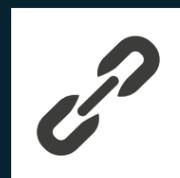


world of solutions

*Facing the new
reality together*

Step by Step to digital

go digital



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Building strong partnerships

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Today. Tomorrow. Always.

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10 years in style – the perfect combination for
the fashion industry*

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**Ladies and gentlemen,
and valued KNAPP partners,**

once again, the challenging times of the past months have shown that we have developed a corporate culture not only with our customers, suppliers and development partners, but also with our owners and employees, that has helped us to both master the challenges and problem areas, as well as to transform them into new chances and market entry points.

First of all, we want to thank you, our customers. Practically every one of you proved to be a fair partner during the crisis. You rescheduled and set up projects with us, continued and started them up under adverse conditions and supported our employees. You made tremendous effort to cover the soaring demand in a few critical supply segments and have even already begun work with us developing new business models, as well as adapting existing ones. Many of you are investing in the future right now, equipping yourselves for new challenges.

We are proud to have the privilege of being there for you. Our investments in local infrastructure near our customers have completely paid off. Not only were we able to provide our 24-hour Hotline service in the usual quality, but our service work on site functioned magnificently, with support from our experts at company headquarters.

Our suppliers helped us to keep the delivery chains up and running at all times, especially for critical spare parts, so not only was the supply of spare parts intact, but also the supply for production, which made the rapid continuation of projects possible.

Moreover, many of our employees continued to work at our customers even under difficult circumstances or have meanwhile returned to sites. We owe them our respect and thanks. Currently, we are working together on policies that will allow us to implement projects while maintaining the greatest level of safety.

Many innovations that were already in the development pipeline have been pushed forward because of the changed situation. Along with the *personal virtual shopper* or our contactless shopping systems that fall under *Project Retail CX*, optimizations and precise control options using KiSoft Analytics and optimizing personnel using RedPILOT are becoming increasingly important.

We offer you the possibility to store your data securely and neutralized in our (ORACLE) cloud. This way, you can always plan ahead to use your best option for operating, including personnel management.

Furthermore, there are also new opportunities in quality assurance and robotics. In machine learning, we've made a quantum leap in robotic single item picking as well as quality assurance and data acquisition through image recognition.

Whatever the future brings – with you by our sides as the most innovative and strongest partners – together, we will be successful!

Thank you very much and stay healthy!

Yours,
Gerald Hofer



Effects of the COVID-19 on the logistics sector

75%

In April 2020, 75 percent of those surveyed believed that in the next three months, COVID-19 would severely impact their business. The logistics sector is affected primarily by travel restrictions imposed because of the coronavirus crisis.

58%

In April 2020, 58 percent of the logistics companies surveyed stated that they were currently experiencing revenue losses as a result of COVID-19. 16 percent of the surveyed companies were facing restrictions due to border controls or entry bans.

40%

In April 2020, 40 percent of those surveyed had already implemented measures for their personnel to minimize the effects of COVID-19 on their logistics company. Shift arrangements or home office were some of the measures taken.



The world will never be the same again

In the wake of the COVID-19 crisis, logistics is not the only area experiencing change. Video conferences instead of meetings, sales via chat instead of visiting customers in person, working from home instead of the office – before the pandemic, this was all rather unusual, but today, it's standard practice. And yet, we will return to normality in many areas, but with lasting effects on the economy, society overall and our personal lives.

Contactless



While most retailers were closed, shopping online increased. The rules of social distancing to reduce the risk of catching the virus still apply. It's good for those already equipped with e-commerce logistics or who use innovative store concepts for contactless shopping like the specialty shop Kreisler:

Digital



Pharmacies had a tough time during the crisis having experienced high demand while simultaneously having to comply with strict safety regulations. With the gradual easing of restrictions, it is now important to provide security and trust to customers. This is where the digital butler supports:

Re-stocking stores



Since we were all stocking our personal pantries for the long haul, demand for groceries increased. It doesn't matter who you are – small business, large or small supermarket chain, e-commerce retailer or a combination – for demanding situations like these, we support our food retail customers like never before:



More space for cyclists



The Columbian capital Bogotá has more than 550 kilometres of bikeways. During the pandemic, the city added 117 kilometres of bike lanes along main traffic routes to encourage the citizens of Bogotá to cycle, to reduce heavy local traffic and to do something for their health.

Less traffic



During the COVID-19 crisis, traffic in many cities went down dramatically. Fewer people were driving to work and fewer people were out and about in their free time in general.

- Hamburg: 62 %**
- Vienna: 43 %**
- Paris: 20 %**
- Madrid: 18 %**
- Milan: 17 %**

World Happiness Report



At the end of March, when the global pandemic had reached almost every country in the world, the Sustainable Development Solutions Network of the United Nations published the World Happiness Report. The Finns lead the list as the happiest people, followed by the Danes, the Swiss and the Icelanders. The study is a reminder that happiness is something we should all be paying attention to, especially in times like these.





Partnership matters.

Today. Tomorrow. Always.

Being a strong partner – a partner you can count on – is at the heart of our endeavours. That is why we take a comprehensive view of supply chains, boldly face new challenges and develop new solutions. We will not shy away from change. Instead, we invest our energy in striving for improvement, which drives us to develop new technologies and approaches that may at first seem impossible. This also leads us to question ourselves and, as an organization, to be geared towards the future. Executive Vice President Heimo Robosch talks about improvements in sales and project organization and how they will help us be even better partners for you.



The partnership approach is at the heart of our activities. With regard to organization, we are geared towards the future, bundling core responsibilities, resources and tools in our business units. These measures ensure that our customers have access to the experts and services they require throughout the project – more important than ever in difficult times like these.

Heimo Robosch
Executive Vice President of KNAPP AG

What motivated the reorganization?

Over the past few years, our company experienced strong growth. The number and size of the projects we are involved in, has increased considerably. Looking ahead, we saw that reorganization would be essential to continue being the best possible partner for our customers. It was a major challenge: In our core business areas, the requirements of our customers differ considerably, and numerous individuals are involved in a project throughout its different stages – often spread all over the globe. Furthermore, it may be years from a first workshop to the final handover of a system. Some of the central issues were: How can the business units and our international subsidiaries become a secure and stable network with all processes running like clockwork? Where are synergies and how can they be used optimally? How can we best apply our knowledge and pool our tools and competencies? In short: What is necessary to continue providing our customers with the most intelligent solutions while offering the highest quality project management?

What does this reorganization look like?

From initial contact, to handover, to go-live and subsequent customer support – our new organizational structure focuses on looking at the big picture of the customer and the project throughout the entire lifetime of the system. Our mission is to ensure that the right people work on the project with our customers at the right time and that the right information is available at all times. To gain this comprehensive view of the project, we have implemented several key elements to our structure: **First**, we bundle the overall responsibility for a project in our business units, such as Healthcare or Food Retail. They have the ongoing responsibility for customers and projects. This ensures that the required industry and technical experts are available at the right time and improves the connection between our global teams without the unnecessary transfer of responsibility. In addition, we have stepped up our account management programme. **Second**, we rely on standardized tools and processes in project management. They enable each business unit to address the

specific sector requirements as well as individual customer requests and to use uniform methods in project management with our customers profiting from the experience and knowledge gained across all sectors. Strategic units create an overarching link across the business units. **Third**, we are highly engaged in knowledge management and knowledge transfer. On a global level, this includes all our international subsidiaries as well as our business units, allowing us to share our experience with the entire company in the best possible way.

What tangible benefits result for our customers?

I see a huge advantage in simplifying complex project development processes. In this way, we implement projects more efficiently, react faster to new requirements and create more transparency for our customers. For example, in the design stage, we are using tools and modules that allow us to come up with individualized solutions more quickly. Another advantage

is a marked improvement in quality: Where people are at work, mistakes will happen, and we have to be honest about that. Our new, intelligent approach in project development and project management enables us to significantly reduce the risk of such errors. The third advantage comes with an even better networking between the teams. We avoid breaklines, which imply loss of knowledge, in the transition between the individual project phases and between our specialist departments. We are convinced that

“ this is the right approach to take the partnership and cooperation with our customers to a new level and to work on solutions for the future together. ”

To me, the speed with which we were able to react to the impacts of COVID-19 and continue to provide the best support for our customers clearly proves the importance of these steps.

Making complexity simple

The comprehensive view throughout the project in conjunction with our expertise, the latest industry best-practice, strong networking and a good dose of our KNAPP spirit are the ingredients for making your project a success.

1

The right start

A logistics project is a bit like a Formula One race: Getting off to a good start is critical. In the kick-off phase we form the right team – your personal crew. Your experts and our experts connect, and we provide you with contact persons in your region.

**A strong team
is the first step
to success.
Your personal crew
is ready.**

It is fascinating to start with the data analysis, to compare concepts, to put a technical solution on paper, to manufacture the necessary components and finally to put them into operation and see the system up and running in reality. Witnessing this is one of the great privileges of our work. I am proud of the team spirit and the commitment with which we combine our technologies and our know-how across the company to create efficient and future-oriented logistics solutions. This is how we ensure the success and competitive edge for our customers.

Sigurd Völker, Managing Director of
Dürkopp Fördertechnik

2

The right design for your goals

Logistical goals and requirements are individual and so are our solutions. We use an intelligent system of modular technological building blocks in combination with our experience in the industry and passion for your project. Step by step, we create the right processes and design layout for your system, starting in workshops and 3D simulation models, using the latest methods.

**Listening,
checking back with you,
understanding, acting.
This is how we create
your system,
made-to-measure.**

The perfect system is different from customer to customer and depends on the individual goals and priorities. Good automation keeps the balance between criteria such as level of investment, number of employees, flexibility for the future, performance or delivery capacity. Therefore, we develop the ideal system in close dialogue with our customer. Creativity is important to combine the right technologies in the right way and to optimally dimension the system.

Heiko Süß
Vice President Wholesale

3

The right fine tuning

From design to sophisticated and detailed planning: Each cable, screw, switch and each software function is prepared in detail. This is where our planning experts come in. Flexible cooperation is essential: Continuous coordination between Design Engineering and Final Engineering ensures efficiency and quality. The right planning is also crucial for the smooth production and installation of your system.

**Fast execution
and optimum quality
The right technical experts
at the right time.**

This phase always fascinates me because it's when a system concept turns into a concrete plan. Taking the design plan as our basis, we break down the customer's business cases to the smallest chunks. Where does a transport container need to go? Which commands must the warehouse control system give, with millisecond precision? How should the work stations be designed to ensure that the employees stay healthy? Our work is a bit like putting a gearbox together: Many cogs, shafts and toothed wheels have to be assembled into a functioning unit. It's our job as well as our passion!

Maria Geroldinger
Head of Final Engineerin

4

The right project management

Someone has to keep an eye on everything – in our case, the project manager. The project manager is the interface between all individuals involved in the project, and is responsible for keeping deadlines, coordinating the team, monitoring the costs and much more. Reacting quickly is essential: Pooled responsibilities, fast access to experts and standardized methods support our project managers in efficiently implementing your project up to the startup of your system.

**Making sure
everything runs smoothly
efficient project management
thanks to clearly defined
responsibilities and
a complete overview**

The key to successful projects is open communication throughout the entire project. By pooling expertise in the business units, we create the basis for this communication. Our sector focus enables us to incorporate new insights from the business areas of our customers into each phase of project development. Cooperative partnership starts with the first discussion and continues through implementation, system startup and on to optimized warehouse operation with the entire system at full production.

Andreas Salzng
Vice President Healthcare Solutions

5

A glimpse of the future

A comprehensive view of the project includes anticipating the challenges in the future. We do not need a crystal ball, instead, we use the latest analytic tools and plenty of hands-on spirit. That is how we transition smoothly into service support. While the requirements of the market and logistical challenges are constantly changing, our account management stays on the ball with you. New challenges? We can respond quickly.

**Thriving partnership
We go the extra mile
for you.**

Service is part of the solution, right from the start. We develop every service solution together with the customer. Our goal is to always exceed our customers' expectations. Many customers in particular have a great deal of trust in managed service: This is where we can be a strong partner, who not only supports a system technically, but also supports the customer to get the best possible use from their system and to adapt to new challenges. As partner in business operations, we let our customers profit from our industry know-how and help them to achieve even more success.

Sebastian Schom
Business Operations Manager

6

Central knowledge management and quality standards

"It is good to rub and polish our brain against that of others." We like this slightly quirky idea of French philosopher Michel Eyquem de Montaigne. We have set up a special task force for our business units that addresses the task of global knowledge management. This enables our experts to learn from each other on a worldwide basis. Additionally, we use central tools for managing customer information and standardized workflows.

**Challenge the
status quo
Create a network of knowledge
and experience to facilitate
constant improvement.**

Whether our customers require our system to handle their yogurt, shirts, pills, or bearings; they should rightfully expect excellence in our sales and projects processes. My view has not changed in 30 years in this business: We must provide excellent service to our customer partners, in order that they can, to theirs.

David James
Vice President Strategic Business Unit &
Subsidiary Development

Fresh. Efficient. Reliable.

**A dependable
partner for food retail**

Where consumer behavior is changing, you need a strong and reliable partner. Someone working in the background to flexibly adapt logistics processes. A few customers report about how, with support from KNAPP, they were able to successfully overcome the new challenges.

In exceptional situations, consumer behavior can change rapidly. In response to changing demands, it's important to act immediately, not get bogged down with a lot of red tape and to quickly adapt the logistics processes quietly running behind the scenes.

In situations like these, having a strong and dependable partner who can quickly and proactively provide support is an absolute must. Whether they are running a large supermarket chain, an online shop or a combination of these – in times of change, our customers in food retail need our support more than ever before.

Fresh foods delivered daily to the stores

We offer solutions for brick and mortar food retail that are ideally adapted to customer requirements. By flexibly expanding and modifying existing systems, we help our customers to adapt their concepts to their order structure. This ensures that fresh groceries arrive every day and that the general public is supplied in all situations.

SPAR relies on flexibility in brick and mortar retail

Food retail is the core business of the SPAR Austria Group. The Ebergassing distribution center supplies 150 stores in Vienna and the surrounding area. The Flexible Case Picking solution provides a flexible response to peaks whenever they occur.

“On peak days during the corona period, we delivered double the quantity to our SPAR, EUROSPAR, INTERSPAR and SPAR-Gourmet supermarkets. A top team made this possible, working in the warehouse, in the trucks and in the stores. This is the only way we could process these unbelievable quantities,” explains Christian Kalnay, Head of Warehouse and Transportation department in the Logistics and Goods Flow division, about the challenges of the past months. *“At SPAR, we are glad to have a reliable system and a flexible partner: KNAPP. For example, the KNAPP team in Ebergassing was quickly provided with reinforcements. Thank you for this important support.”*



At the Ebergassing location, peaks are handled with flexibility.

Trend towards online food retail

Consumer groups who up to now have mainly shopped in stores, are increasingly purchasing their groceries online when the situation demands it. Retailers need to adapt to these shifts in logistical demands and processes including high growth rates. Fast, economical order handling is an essential part behind the curtains.

Our solutions for online food retail support the daily supply of a wide selection of fresh produce to consumers. Changing order volumes are no problem for these highly adaptable processes. This is the only way to provide fast, direct delivery to the end customers. The concepts range from small warehouses (micro-fulfillment centers, short: MFC) connected to the stores to large, central fulfillment centers that can be semi or fully-automatic.



The trend in food retail is clearly moving online.



REWE supplies the customers from Food Fulfillment Centers.

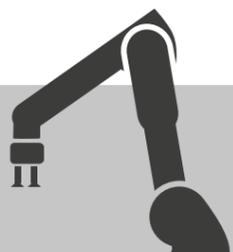
Central processing for REWEs online orders

E-Grocer CFC (Central Fulfillment Center) is a solution for centrally processing e-commerce orders. REWE pools the online activities and supplies their customers from central warehouse locations. In Cologne, Germany, this takes place at *Scarlet ONE*, the most modern food fulfillment center in continental Europe. There, e-commerce orders for the REWE delivery service are prepared. For many consumers, the delivery service is the first choice for their well-planned purchase. *“Due to the coronavirus outbreak, we became much more important to our customers and they showed great appreciation for the REWE delivery service. Our customers especially appreciate the contactless delivery of their weekly purchases,”* explains Wolf-Axel Schulze, Head of the REWE Automated Fulfillment Center. *“Keeping goods available in critical item ranges was a special challenge that led to a high percentage of substitute articles in outbound deliveries. The KNAPP KiSoft logic in combination with the REWE Host automatically replaces any order lines that can't be filled, even if the picking process has already been started. This worked perfectly during this difficult situation,”* explains Tim Geißen, Head of WMS Management at REWE.

The preparatory work between REWE and KNAPP really paid off and REWE delivery service customers were ensured of getting their groceries. *“During this time, the processes in the warehouse as well as the immediate performance requirements from the KNAPP system were severely put to the*

test several times. However, our processes run like clockwork and have proven to be very robust,” says Stefan Freudenthaler, Head of Automation technology at REWE. *“We have high change dynamics, so we re-prioritized our planned optimizations and requests for change and then adapted the development accordingly. Updates with important new features or corrections*

were installed almost on a weekly basis. The cooperation between KNAPP and REWE for development and testing has been tried and tested for years and was truly essential,” adds Tim Geißen. *“Another challenge was to satisfy the high demand for technical support. The KNAPP support and project managers were committed to us and really came through.”*



**Omni-channel:
Everything from
a single warehouse**

Our innovative omni-channel solution optimally integrates the traditional with the online business. Thanks to this strategy, several sales channels are operated from one warehouse: e-commerce, brick-and-mortar food retail as well as a combination of both. Regardless of which segment requires higher performance, a flexible response is possible. Retailers with an omni-channel strategy are perfectly equipped for current and future challenges in the food sector.



Health matters

Securing supply and quality in medicine distribution

Pharmacies are experiencing a severe onrush of demand because of the corona crisis. Pharmaceutical wholesale in particular has been flooded with orders to supply pharmacies with medicines. Since many people have been stocking up on medical supplies, replenishment has become a central issue. The spike in orders has pushed many wholesalers to their limits, utilizing all available resources to ensure the sufficient supply of medicines. In times like these, it is all the more important to have a reliable partner such as KNAPP helping to secure and strengthen the supply chain so that customers and patients may rest assured that they will get the medicines they need in time.

Securing the supply is not the only challenge pharmaceutical wholesalers face. They are confronted with many requirements in their sector including a growing variety of products, increasing cost pressure, legal provisions for patient safety, personalized medication and the availability of goods. As a technology partner, we tackle these issues head on with practical solutions. Our contribution in securing and strengthening the supply chain creates a value chain that customers and patients can rely on. We support over 650 customers in the healthcare business and 1,000 pharmacies worldwide throughout the entire lifecycle of their project, creating long-lasting partnerships.

Error-free is the key to a secure supply chain

When creating an error-free supply chain, logistics partners need to find ways to seamlessly and securely integrate end-to-end traceability from the producer to the patient for every medication moving through the supply chain. The zero defect warehouse provides just the right mix of smart technology and software. Such a warehouse not only combines quality and process reliability with highest efficiency but also fulfils all requirements related to serialization and lot documentation.

In this context, we have a combination of established and proven technologies including:

- **Reliable central belt systems** for high-performance order picking
- **Smart shuttle solutions** for central, secure and space-effective storage of the product range
- **Versatile KNAPP-Stores** for efficient picking, automated goods-in handling, and easy returns processing
- **Innovative Vision systems with image recognition technology** for quality assurance and checks
- **The latest work station design:** Intelligent picking robots and ergonomic goods-to-person work stations for optimal use of resources
- **Completely integrated warehouse management and warehouse control software** for controlling and optimizing all processes

By combining these intelligent technologies into tailored solutions for the demands of the healthcare sector, error-free workflows in the warehouse become a reality, ultimately creating lasting added value for patients.

Secure supply thanks to 24-h pharmacy service



In addition to our automated solutions for pharmaceutical wholesale, we also offer tailored solutions for digitized processes in pharmacies.

The Apostore picking robot stores and retrieves medicines quickly and reliably. The robot retrieves 400 drug packages per hour from wholesalers' containers and transfers them to the storage system.

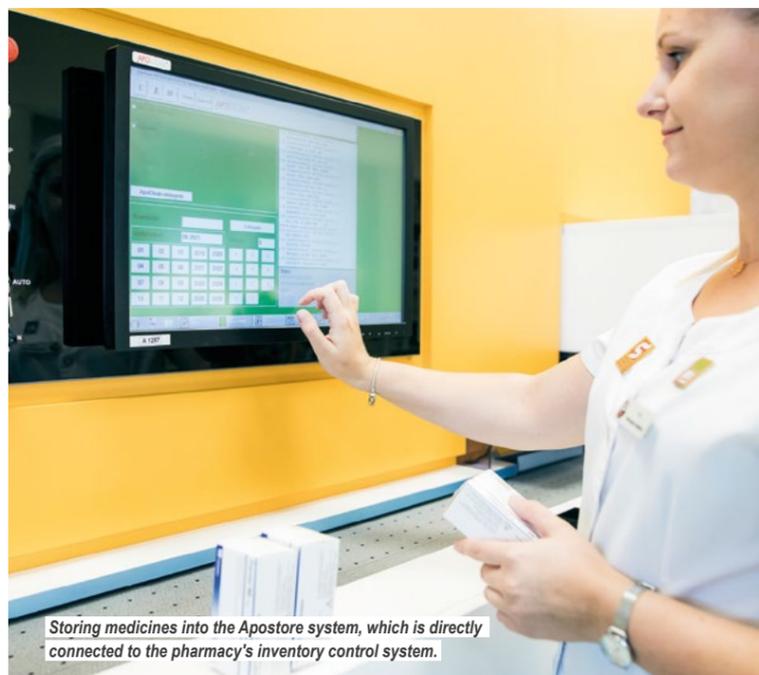
The robot works automatically, dynamically and autonomously around the clock, and is even equipped with a function providing integrated delivery note management. Thanks to an OCR recognition system, the national drug code, the Data Matrix code as well as imprinted expiry dates and lot numbers can be read in just one step during storage. Pharmacists therefore enjoy full transparency and control and can check

the authenticity of a pack before it is added to stock. Automating inventory and stock management provides a precise overview of the stock at any time, the number of items of packaging according to categories, expiry dates, the stock value according to positions as well as the entire stock value.

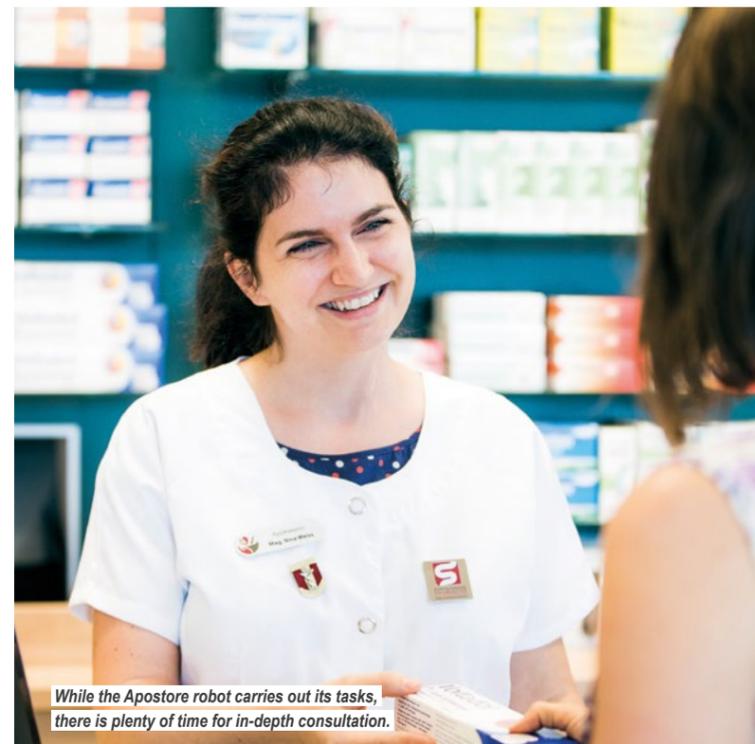
Our technologies not only enable economic and efficient management of pharmacies, new solutions for the point of sale also cater to changes in the market such as electronic prescriptions or online orders. With the help of our digital solutions, pharmacies can fulfil the expectations of their omni-channel customers as the need for more flexibility, better quality and faster availability increases.



The Kuttner family of the Pharmacy Weiz, in Austria, is delighted with the Apostore robot which gives them more time for their customers.



Storing medicines into the Apostore system, which is directly connected to the pharmacy's inventory control system.



While the Apostore robot carries out its tasks, there is plenty of time for in-depth consultation.



The digital display is quick to provide valuable up-to-date information for the customers.

Pharmacy of the future



- **A visit to the pharmacy of the future** starts at home on the customers' tablet. Whenever they need new items, they can simply look them up in advance.
- **They then place the orders** for the desired medicine online using an app or through the webshop of their go-to pharmacy and, without much delay, the orders placed online can be fetched from the pharmacy at the desired time.
- **Bright, heat and UV-resistant displays** for continuous use are installed in shop windows or on 24/7 terminals on the store facade, providing customers with animated and changing advertisements.
- **What's more**, the terminal gives customers the opportunity to select items on the spot and to purchase them using a card payment system.
- **The picking robot** retrieves the orders and hands them over to customers through an output tray.
- **Depending on the legal situation** in each country, customers can also use the terminal to access their medicines or urgently needed care products outside of opening hours.

This eye-catching opportunity to present services and sales promotions around the clock enables pharmacies to generate more turnover. Whether they order items personally or online, this solution allows brick-and-mortar pharmacies to provide maximum service while simultaneously giving discerning consumers new ways of shopping.



Secure supply thanks to intelligent production logistics

In sourcing, climate change, digitalization, artificial intelligence and production on demand are the topics of the times. On top of general developments in the market, manufacturers have specific challenges to overcome. Of primary importance is ensuring that production is kept optimally supplied. Therefore, smart production will always go hand in hand with an intelligent and networked logistics solution.

**KNAPP is partner
to the automotive sector**

**Porsche implements smart production
logistics solution with KNAPP**

In the manufacturing, four requirements must be met: First, a **high number of variants** must be handled efficiently. This is a central issue, especially for many luxury brands. Second, the various load carriers needed by automobile manufacturers, for example, must be efficiently handled or the numerous small load carriers used by electronics producers must be handled and stored space-effectively. The third important issue is the **perfectly timed supply of production** lines with all the necessary materials. In this context, exact sequencing and complex creation of routes for in-house transport are vital. The fourth criterion is maintaining **top quality** in all steps of production and assembling.

“Our solutions address these requirements, providing intelligent, integrated and reliable production processes. This is how we optimize supply flows and availability, best use storage capacities and reduce error costs”, explains Wolfgang Skrabitz, Managing Director of KNAPP Industry Solutions.

What might such a solution look like? Here, an example from the automotive sector.

Automation and integrated production systems have been shaping automobile manufacturing for some time. In the past years, production has almost reached perfection. In light of increased demand for customization and the complexity this adds to production, how is it even possible to work efficiently and economically as well as to conserve resources? Dynamic systems and stronger networking are the solution. Smart production will always involve an intelligent and networked logistics solution. Porsche Leipzig GmbH shows us how. Working with KNAPP, they developed a logistics solution that won the Logistics Award of the Verband der Automobilindustrie (Union of the Automotive Industry).



Porsche Leipzig employs about 4,300 people

Porsche Leipzig GmbH has a successful history: In 2002, the plant started series production of the Cayenne SUV, with 259 employees. Since then, the site underwent continual development to become one of the most advanced and sustainable production facilities in the automotive sector. With the production of the Macan model, the plant in Leipzig was expanded into a full-scale plant in 2011. Today, Porsche Leipzig GmbH employs about 4,300 people. The factory produces the Porsche Panamera and Macan series, as well as bodies for Bentley.



The why behind the new logistics concept

With luxury brands, variety is extremely high and customer wishes and expectations are central. For efficient production despite the high degree of variation, a new logistics concept was developed and implemented. It features an automated small parts warehouse with KNAPP shuttle technology, dynamic, automated picking and automated guided vehicle systems. Supply flows had to be optimized and storage capacities had to be used even better – all of this in the most environmentally friendly way. This new concept reduces CO₂ emissions by 3,500 tonnes and is a key element in the sustainability strategy of the Porsche company.



Special requirements for the KNAPP solution

The assembly line had to be flexible, which required a scalable, OSR Shuttle™. This provides parts for final assembly to a trolley train station, automatically filling the train just-in-time in a precise sequence. At Porsche, the components come in numerous different load carriers (containers, polystyrene boxes) with different dimensions and heights. The goal was to develop a single system to handle all the requirements. This provided important advantages: Buffer space reduction, increased route efficiency and better quality through correct supply since unloading is the only manual process.



The solution features precise sequencing directly from the OSR Shuttle™ storage system, while maintaining maximum performance.



The train station is designed so the driver can precisely position the trolley train. The number of carts varies between one and four.

CONTENTS

© Porsche Leipzig GmbH

Key data and special features of the KNAPP solution

Location:	Leipzig, Germany
Sector:	Automotive
Application:	Automated small parts warehouse to supply the assembly line
Storage system:	OSR Shuttle™ with 90 shuttles and 4 lifts
Load unit locations:	54,639 (at 600 mm x 400 mm)
Performance:	1,200 double cycles/hour in the OSR Shuttle™ and 900 sequenced retrievals to the trolley train station
Load carriers:	Approx. 90 different load carriers in dimensions of 300 mm x 200 mm to 800 mm x 600 mm (containers, polystyrene boxes)
Work stations:	<ul style="list-style-type: none"> Automatic depalletizing for 5 different types 6 manual goods-in work stations
Special features:	<ul style="list-style-type: none"> Sequencing in one system (OSR Shuttle™) Handling of approx. 90 different types of load carriers Automatic high density loading of trolley trains Trolley trains loaded ergonomically from both sides Optimal route creation by KiSoft Special train station for internal special and urgent orders
Software:	<ul style="list-style-type: none"> KiSoft One with special route calculation and interface to the customer SAP KiSoft SCADA for warehouse visualization Software for automatic trolley train loading

The solution

Automatic depalletizing in goods-in area

The components are delivered on pallets and fed in at the automatic depalletizer. The individual packing patterns of the pallets are transmitted to KiSoft, the warehouse software. A robot equipped with a layer/row gripper carries out automatic depalletizing. Depending on the handling unit, the pallets are depalletized by layer or by row based on the packing pattern. The handling units are then separated onto small load carriers (KLT). Each small load carrier is automatically provided a label with a unique barcode as identification. Small load carriers with dimensions between 300 x 200 mm and 400 x 300 mm are automatically placed on trays especially designed for Porsche.

Besides automatic depalletizing, there is manual processing for certain parts. These small load carriers are labelled at ergonomic work stations and then transported to the small parts warehouse on the conveyor system.

Storage in the OSR Shuttle™

All small load carriers undergo checks and are automatically weighed and measured before being stored in the OSR Shuttle™. Located in a separate building, the OSR Shuttle™ includes 2 rack line systems with 90 shuttles and 4 double lifts. The OSR Shuttle™ flexibly stores the various sized small load carriers in the best possible way. During storage, special strategies are applied such as distributing identical parts to different rack line systems and levels.

100 % on demand sequencing by KiSoft

The parts are requested by their codes according to the production sequence of the individual vehicles on the production line. The time required to move the components to the line is also considered. KiSoft uses sophisticated algorithms to calculate the individual small load carrier of the part. The KNAPP software plans the sequenced allocation of the tugger train based on the parameters of the tugger train routes. It then conveys the individual small load units from the OSR Shuttle™ to the exit line in the exact sequence.

This solution is special because sequencing is carried out in one single system, the OSR Shuttle™ while still providing full performance.

Automatic tugger train loading and just-in-time supply to the line

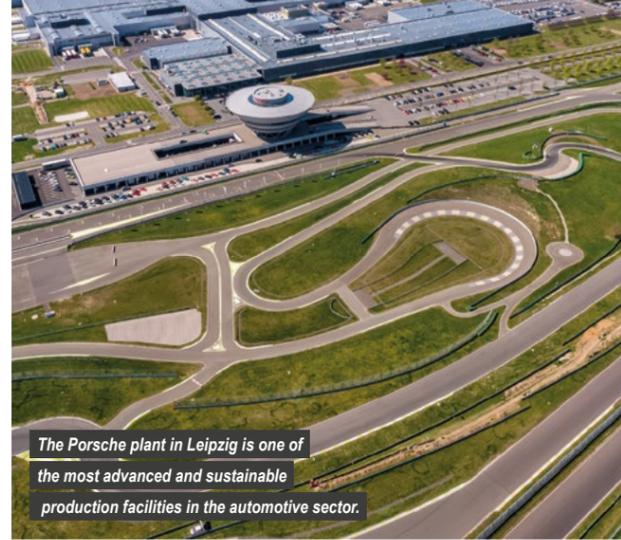
When development began, there was no system on the market that could automatically load different load carriers on several levels with a variable number of carts.

With the new concept, two tugger trains can be loaded with load carriers in parallel at a tugger train station. The train station is designed so the driver can precisely position the tugger train. The number of carts varies between one and four. Load carriers are supplied to the train station according to the planned arrival time at the destination and the possible routes. The load carriers can be placed multi-deep on the levels. Unloading at the target locations along the route is rapid and ergonomic because the load carriers are placed on the tugger train in an exact, pre-defined sequence. The sequence of the target locations along the route is considered as well as the side from which the load carrier is taken, so the identifying code can be detected. This makes the manual unloading of the tugger train at the line as ergonomic for the driver as possible.

The tugger train driver takes empty load carriers from the line back to the train station for the empties. Here they are automatically unloaded before the tugger train is reloaded.

Successful cooperation and future

With the new logistics concept, Porsche Leipzig completely changed the plant logistics and internal network. Thanks to the terrific teamwork of Porsche and KNAPP and other participating suppliers, the project was implemented quickly and during ongoing shift operation. *“Our interconnected technologies and developments make us a partner of the automotive sector, which is why we look forward to continue supporting Porsche with our solutions”*, explains Wolfgang Skrabitz, Managing Director of KNAPP Industry Solutions.



The Porsche plant in Leipzig is one of the most advanced and sustainable production facilities in the automotive sector.



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With the KNAPP solution, it is possible to load two tugger trains in one train station at the same time.



For almost 90 different types of small load carriers, KNAPP's intelligent software plans their sequenced allocation to the tugger train and retrieves them in precise sequence out of the OSR Shuttle™ onto the take-away conveyor.



The location in Leipzig manufactures the Porsche Panamera and Macan series, as well as bodies for Bentley.



Load carriers are supplied to the train according to the planned arrival time at the destination and the possible routes.

E-commerce fulfilment

Turning customer needs into intelligent logistics processes

The online business is an integral part of our lives and is now booming. Whatever the customer needs – whether fashion and electronic items, medicines, groceries or spare parts for agricultural equipment – everything is just one click away. All these purchases have two things in common: a specific need and an expectation for the experience of shopping. To fulfil these customer needs, smooth logistics is critical for online businesses. What does it take to make e-commerce fulfilment efficient and service-oriented? What is the ideal degree of automation? What questions should you ask yourself about your business? Logistics experts shed light on important aspects regarding e-commerce fulfilment.



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Stay true to the core of your business

Each consumer has a specific reason in mind when they click on the **Buy Now** button. Is it the cheapest price, the large selection, regional products, product customization or the fast delivery? *“To stand out from other online vendors, every company makes a promise to their customers in their online shop. This promise can be kept thanks to intelligent e-commerce fulfilment, giving the company a real competitive advantage”*, explains Mario Rauch, expert for process design and software consulting at the technology company KNAPP.

When he gives advice to companies looking for a logistics solution, he therefore begins by asking questions such as:

How is your business different from others?

What are your goals and business scenarios now and what are they for the future?

What is your corporate culture like?

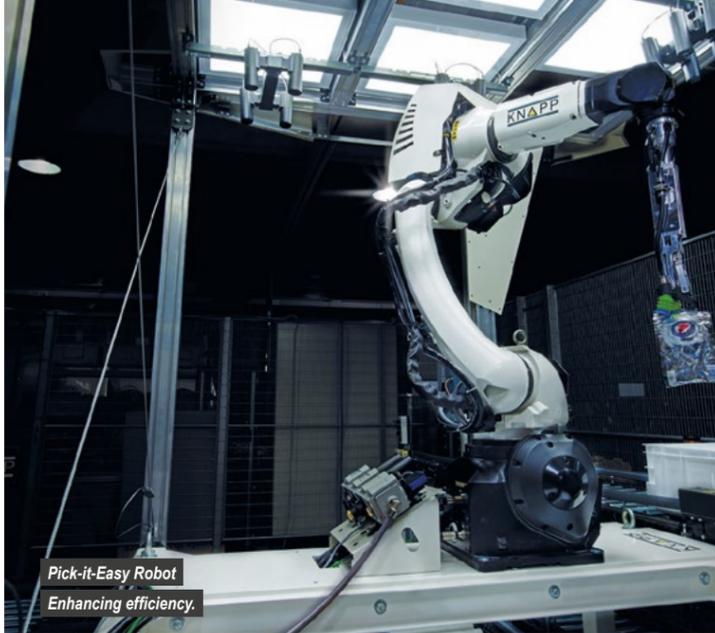
What is your product range?

Which processes must be integrated?

Our customers usually expect us to just make them an offer and then they are surprised when we hold a workshop with them in which we discuss questions like these. But this is the only way for us to understand how our customers and their businesses work and to translate that unique customer promise into cost-efficient logistics processes.



Mario Rauch
Director of Digital Businessmodels
KNAPP



Pick-it-Easy Robot
Enhancing efficiency.



Pick-it-Easy workstations
Linking technologies and people.



KiSoft
Making the right decisions.



OSR Shuttle™ Evo
Storing centrally.



Our customers are experts in their business. We are experts for intelligent automation. Only by combining our knowledge can we create the best e-commerce solution. The key lies in open dialogue with the customer.

Anton Tschurwald
Vice President Retail Solutions
KNAPP



When and why should you automate your business processes?

The right time and the way a company enters the world of automation should be planned step by step and considering all relevant aspects, and depends on individual turnover figures and growth prognoses. Anton Tschurwald, Vice President of the Retail Business Unit at KNAPP is very experienced in helping companies adopt and develop their e-commerce fulfilment:

“With our customers, we develop scenarios and expansion steps. The solution has to provide maximum efficiency at all times. The most common criteria for automating a business include growing order volumes and an increasing number of articles, but also quality and delivery speed. Orders have to be fulfilled with top quality and with ever increasing speed, so as not to disappoint the end customer with an error or a long wait,” he explains. Another factor having a direct effect on customer satisfaction is the so-called cut-off time: *‘Order by 11:59 pm and receive your delivery on the next day.’ This is a service that many of our customers offer or plan to offer. Here, intelligent logistics processes and technologies can help: For example, a warehouse system from which all goods can be retrieved at any time, one-touch picking or pre-sorting of dispatch routes,”* states Anton Tschurwald.

Actual success is what matters

The word automation sounds like a huge investment and might put off companies wanting to enter the e-commerce business. Getting started, however, doesn't have to be expensive nor does it mean they have to fully-automate their entire business. Much can be achieved with just small, systematic measures within a reasonable budget.

“You can start smart and small, for example, with paperless manual picking, carton closers or photo stations to document the contents of shipments. A WMS software is also an important step because with it, you can collect and analyse data, learn from it and prepare yourself for growth at the right time,” says Mario Rauch.

Transparent and reliable data plays an important role in e-commerce fulfilment but in practice, this is also what poses a major challenge for many online retailers, as Gerrit Schneider, expert for master data management at KHT knows from experience,

“One of the greatest logistics challenges in e-commerce is capacity fluctuations, meaning the peaks. Here, data plays an important role because it makes it possible to think ahead regarding purchasing behaviour and to be proactive instead of reactive. An overview of the warehouse workload is often missing and valuable space wasted. A mobile station that captures the weight and dimensions of the articles is a simple but effective solution in this case. It can also be useful in the dispatch area for selecting the correct carton size and for saving valuable resources.”

In e-commerce, data plays an important role. With data, you can be proactive instead of reactive.

Gerrit Schneider
Sales Manager
KHT



Successful e-commerce fulfilment depends on many different factors, but one thing is certain:

“There is no ‘one size fits all’ solution. The solution must be as unique as the customer. Basically, we design solutions geared towards the future that can grow with the customer’s business. At the end of the day, it’s only the actual success, supported by the automation, that matters,” concludes Anton Tschurwald.



A fashionable anniversary

10 years **KNAPP and Dürkopp Fördertechnik**
celebrate in style

“You either know fashion or you don’t”

Anna Wintour, editor-in-chief of American Vogue once said. As one of the most influential women in the fashion industry, her quote definitely resonates with Dürkopp Fördertechnik, a company with a long-standing tradition and firm roots in the fashion industry. Dürkopp Fördertechnik has been part of the KNAPP group since 2010. Thanks to this merger, we’ve got a first class collaboration providing expertise and industry know-how from a single source.

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Sigurd Völker

The perfect combination for our customers in the fashion industry

Johannes Holas, Vice President of Fashion Solutions at KNAPP AG, and Sigurd Völker, Managing Director at Dürkopp Fördertechnik, reminisce about the past 10 years in an interesting conversation about current industry trends, successful collaboration, common values and visions of the future.

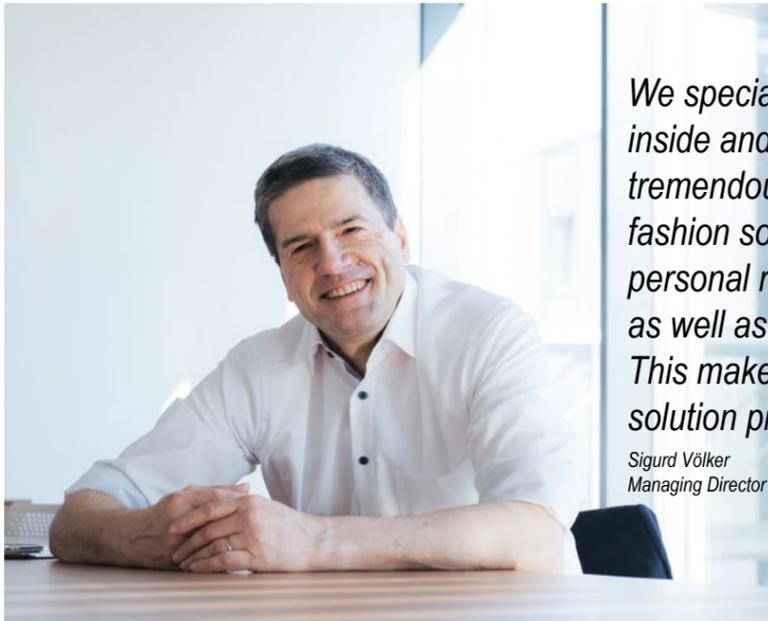
Johannes Holas

Thinking of recent events, how did we support our customers during the corona crisis?

Johannes Holas: We did our best to support our customers during this difficult time but we still don’t know the full extent of this crisis in every business area. First analyses have shown a sudden surge in e-commerce—a business trend that is likely to continue. This rapid change was a big surprise, so many of our customers were suddenly facing challenges. So we implemented smaller expansions in our customers’ systems as fast as we could to support them in changing their business models.

What is still driving the fashion industry? What trends do we foresee?

Sigurd Völker: In a study, managers in the fashion industry were asked to name key words they would use to describe their environment. The terms changing, digital and fast were mentioned most often. We can absolutely confirm that. This industry has morphed into a tech industry in many ways. There is a lot going on in the fashion industry and things are moving at a rapid pace.



We specialize in fashion and know this business inside and out. Over the years, we have gained tremendous experience when it comes to fashion solutions and have created enduring personal relationships with each other as well as with our customers. This makes us a solid solution provider.

*Sigurd Völker
Managing Director Dürkopp Fördertechnik*

Johannes Holas: Conventional trends such as fast fashion, customization, returns and e-commerce are in full swing. What is important right now is to find the right nuances in these established trends. This mix of streamlined supply and value networks combined with product and service features that consumers find relevant and is our current interpretation of *value chain excellence*.

Sigurd Völker: Slow fashion –the opposite trend – is also coming our way. Swapping, recycling and extending usability of items are becoming increasingly significant, as well as transparent supply chains, ethically correct working conditions in production and environmentally-friendly materials. This is a requirement profile contrary to what we normally work with but is one that we are prepared for as well.

Dürkopp Fördertechnik has been part of the KNAPP Group since 2010. What makes the company unique?

Sigurd Völker: We have a great team of experts, which makes the difference. We specialize in fashion and know this business inside and out. Over the years, we have gained tremendous experience when it comes to fashion solutions and have created enduring personal relationships with each

other as well as with our customers. This makes us a solid solution provider.

Johannes Holas: Dürkopp's experience in fashion helped our team in Graz, who previously worked mostly with flat-packed goods, rise to a whole new level. 10 years ago, the original idea was to merge two technologies to create new products and solutions which neither of the companies could have achieved alone. Following this approach, continually generating added value for our customers and sometimes even completely reinventing ourselves are what distinguishes us from other providers in the intralogistics industry.

How has the collaboration between the two companies evolved over the years?

Sigurd Völker: Our business has become more international and our projects are significantly larger with a higher degree of automation. What's remarkable is how we have come together with our concepts. Graz provides the high-speed warehouse technology and transport systems, whereas we provide the systems for temporary storage, consolidation and sequencing of single items. All of this is optimized and organized by a software solution. In a team effort, we then create master concepts that are hard to beat in terms of efficiency and performance.

What values do the companies share?

Johannes Holas: People are at the centre of everything we do. When everyone feels at ease, even things that previously seemed unimaginable can become reality. We try to create space for this kind of flourishing and are rewarded with creativity and openness. We are working in a global environment and, thanks to our diverse team, we can adapt to the many different challenges and, ideally, get people excited on both sides of the project – the customer's team as well as our team.

How do you see the collaboration with the customer?

Sigurd Völker: Openness and trust are the core elements of our relationship with the customer. As a system supplier, we have a great responsibility when a customer trusts us with part of their value chain. We are very aware of this responsibility. At the very beginning of a project, customers entrust their needs to us, and in turn, we take the most direct route to find the right solution for them. Technological innovations or not, at the end of the day we are doing business from person to person. We see our customers as partners and focus on long-term partnerships.

Visions of the future

Johannes Holas plays word association

Technology

Topics that we now consider visionary will soon be more accessible to a wider audience. Recognizing the right trends and translating them for our industry is an exciting task for us.

Fashion industry

Flexible solutions – could also be compared with what we say in the mountains, "In gear we trust!" Only robust solutions will be fit for the fast changes in the market.

Cooperation

Despite all of the technological advances, it's important to remember that we are all just human. People will always have to work together and we should maintain this important aspect.

People are at the centre of everything we do. When everyone feels at ease, even things that previously seemed unimaginable can become reality. We try to create space for this kind of flourishing and are rewarded with creativity and openness.

*Johannes Holas
Vice President Fashion Solutions
KNAPP AG*

