

Flexibility Creates Success

making complexity simple

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Günter-Knapp-Straße 5-7
8075 Hart bei Graz | Austria
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BEST PRODUCT 2021 at LogiMAT



fresh approaches: solutions for more flexibility

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Dear Partners and Valued Customers,

if you asked me what KNAPP's International Customer Service stands for, my answer is *flexibility*.

It's not just an abundance of cultures, languages and time zones requiring our flexibility, but also you as our KNAPP AG customers. It's your wide range of needs and often special business models that drive us to create customized end-to-end solutions, seamless combinations of innovative technologies, agile software tools and intelligent services.

Widely varying industries and changing business models – responding quickly to these dynamic changes is the challenge we face in International Customer Service, which is not unlike the challenge facing you, our customer. We are drawing from a very deep pool of transferable skills acquired from across the logistics industry, turning us into a central service hub that helps you operate your installations optimally.

For us, excellent customer service means providing the right service at the right time, in the right place and in the right quantity. Our objective is to prevent problems before they happen.

Digitalization is prompting the creation of powerful tools to manage the skyrocketing quantity of data, the quality of which is also on the rise. Adapting to these developments also means changing our services, from reactive and preventive services to forecasting and predictive ones. In future, we will be able to ensure very high system availability and maximum performance in highly automated warehouses. What helps us achieve this is our ability to recognize patterns and proactively shape operative processes.

These times are also exciting for the employees of our KNAPP service organisation. The newly developed digital tools require clever approaches and our employees need flexibility as well as versatility to perform their jobs. By combining highly qualified service employees and digital service tools with traditional services such as maintenance, spare parts management, Service Desk services and repairs, we pave the way for intelligent service networks. The result is a customizable service portfolio that can be quickly adapted to perfectly suit your needs.

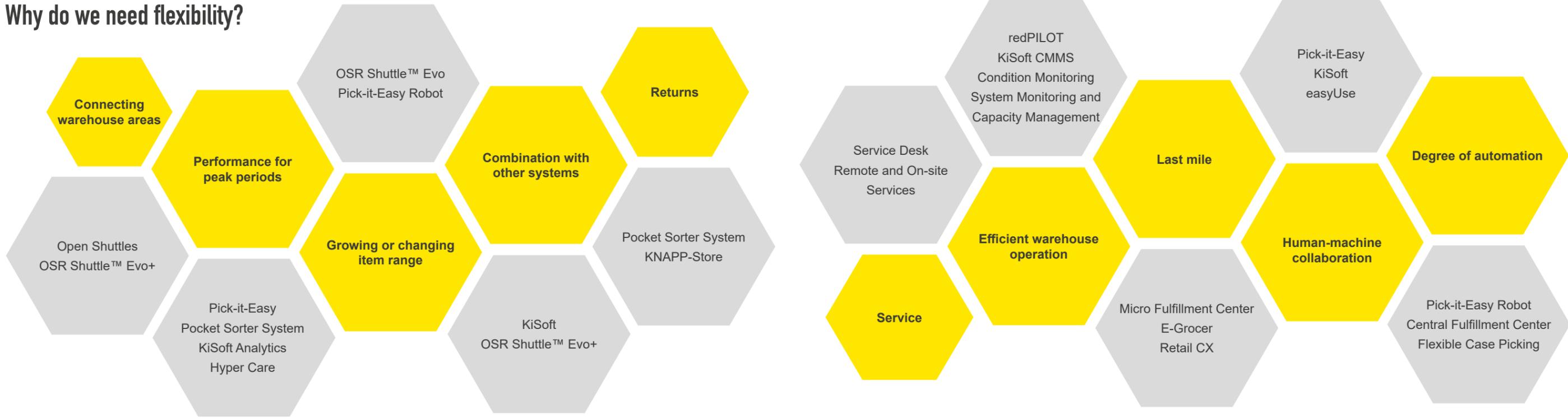
We hope you enjoy reading this issue and stay safe. We look forward to supporting you with our services – *our service intelligence for your success*.

Manfred Fuchs
Vice President Customer Service
KNAPP AG

Flexibility for Your Success

We accompany our customers on their way into the future by offering scalable, modular and adaptable solutions with optimized processes that enhance their competitiveness.

Why do we need flexibility?



How our customers benefit from flexibility?



"We can double the performance in the warehouse within one day."

Sylvain Hodebert
Head of Logistics
L'Oréal Division Luxe



"We chose KNAPP as a partner because their shuttle solution with the pick-and-pack work stations offers the speed and process reliability that we need in our spare parts logistics and it can be flexibly expanded in line with our growth."

Dr. Steffen Vodran
CEO
Diesel Technic AG



"To be able to respond to tomorrow's business, we were looking for a highly flexible overall solution. This is exactly the flexibility that we found in the new system approach of KNAPP's OSR Shuttle™ Evo. We now have a unique opportunity to separate performance from storage capacity, where each can be separately increased as needed."

Georg Schukat
Managing Director
Schukat electronic



"The teamAPP by redPILOT helps us to flexibly respond to peak periods. We can identify the shifts that are not well-staffed in the redPILOT PLANNER, and send out a message. Employees can accept these times at the last minute directly through the teamAPP, and if needed, switch shifts with someone. This has really simplified the planning process and has improved daily operations."

Andy Bertmann
Head of Logistics
EDEKA Rhein-Ruhr Stiftung & Co. KG



Automation Means Less Flexibility

3 myths about automation and digitalization

When it comes to automation and digitalization, there are a lot of myths and misconceptions floating around out there. Many of these myths stem from a time when logistics was limited to what was taking place within the 4 walls of the warehouse, where the task was simply getting things from point A to point B. In the interconnected and digitally driven value chains of today, however, much more we are dealing with so much more. Not only raw materials and goods, but also processes, people, technologies and locations must all be integrated into the network. It doesn't stop there, of course, since each step must also be linked to the right data at the right time and made available for the right user. There is no other way to profitably steer the torrent of global and local streams of goods as well as the customers' wishes in today's world. It's about time we say goodbye to some of these old beliefs, so today, we'll take a closer look at 3 of them.

Automation means less flexibility – or does it?

Companies often worry that automation means being restricted and therefore being far less flexible in how they can conduct their daily business. This is a needless concern, because our approach is: Even the highest efficiency and highest degree of automation may never come at the cost of flexibility. That's why we don't automate processes, instead, we make processes flexible. We combine our intelligent technologies and create tailor-made solutions for our customers in the sectors **healthcare, food retail, fashion, retail, industry and wholesale**. For each business model, our goal is to ideally map out its individuality using our automation solutions, adapting them to our customers' growth targets and investment frameworks.

flexibility that this solution offers. With incredible flexibility, the autonomous, freely moving Open Shuttles link the different areas and processes in the warehouse with the central storage system. They can work in goods-in, supply various decentralized and manual work stations, handle express or special transport jobs in dispatch, or supply materials to production machines; moreover, they also have applications in micro fulfillment.

A strong technological team means maximum flexibility

1 The automated storage system **OSR Shuttle™ Evo** can be found at the **heart of modern warehouse processes** and fulfillment strategies in all sectors. The system can be scaled up and down both in terms of size and performance, and handles the storage of all types of goods, storing not just SKUs but also overstock. The OSR Shuttle™ Evo is an integral part of the KNAPP software landscape. As Jan Frans Berends, Logistics Director at our customer Kramp describes it, *"It's a digitally driven system. The design of the system was another reason why we chose it, because we did not want to have spaghetti-like coils of conveyors in our warehouse."*

3 The **goods-to-person work stations of the Pick-it-Easy series** form the interface between people and the automated warehouse technology. The work stations bring together **ergonomics, efficiency and the highest quality** in order processing: For example, multiple orders can be processed simultaneously. User-friendly software interfaces guide the employees step by step through each order. *"For me, one of the greatest successes in our project was how we optimized the manual picking procedures. Our employees work hand-in-hand with top-notch automation technology. All the work processes are ergonomic, and software guidance reduces errors to a minimum,"* says Olivier Sorbe, Logistics Manager for Europe, the Middle East and Africa for Parfums Christian Dior.

2 The combination of intelligent, **autonomous mobile robots** and the central storage system gives rise to the **OSR Shuttle™ Evo+** solution. The plus stands for the extra

4 For **e-commerce and omni-channel fulfillment** in particular, pocket sorters provide a great deal of flexibility. Every item in every pocket can be clearly identified and retrieved from the pocket buffer. Pocket sorter systems are ideal for storing goods space-effectively, especially in the **fashion sector** where they are unrivalled when it comes to **handling returns efficiently**: Incoming returns are placed directly in a pocket at the returns work station, making them immediately available for sales. Even in **fine sorting and CEP**, pocket sorting offers exciting opportunities to increase flexibility and performance capacities.



A robot is nothing but a gimmick!

Have you heard this one before? For a long time, robots in logistics were viewed as expensive playthings having special *prototype* status. There were just not enough applicable areas and not enough SKUs suitable for the robot and, in general, it just did not work that reliably – at least this was the widely held belief. However, this could not be further from the truth. Thanks to rapid technological advances, especially in artificial intelligence, robots now are incredibly useful in logistics processes and not only raise efficiency and quality, but employee satisfaction to boot.

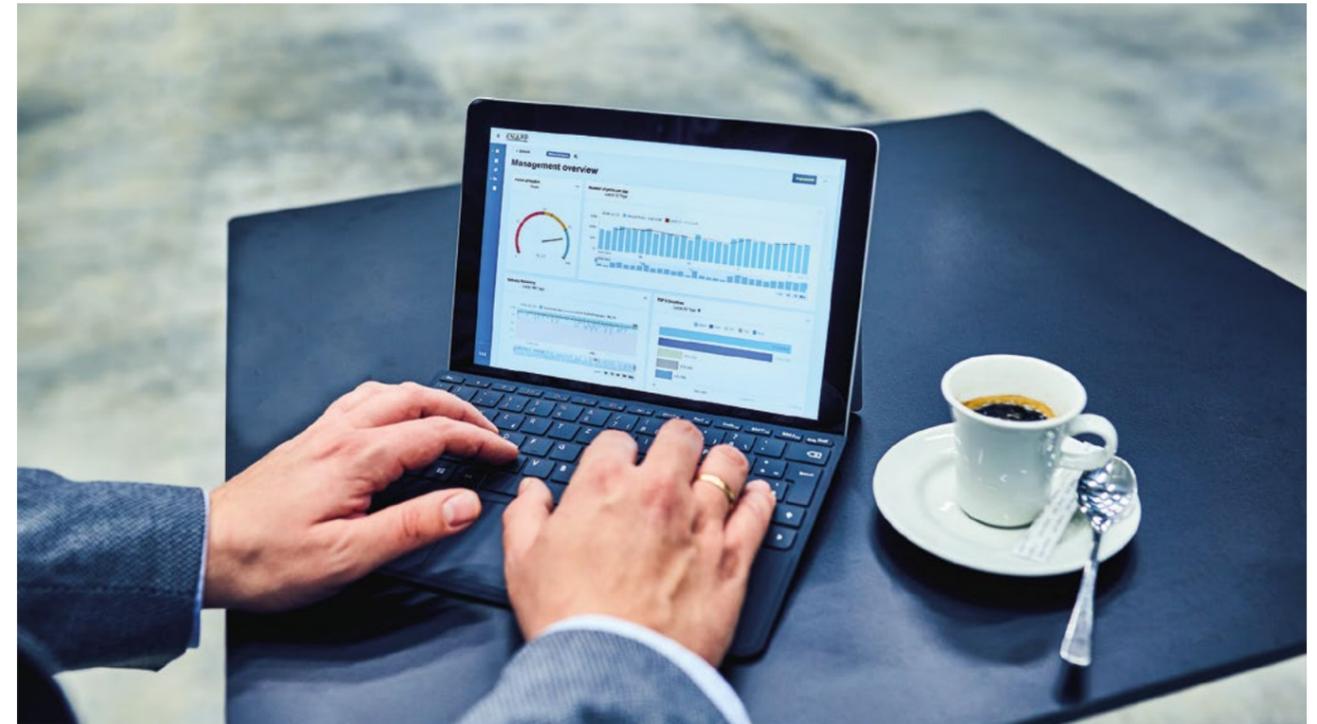
Robots create added value in numerous logistics processes

1 The picking robot **Pick-it-Easy Robot** is being used worldwide in various sectors, for example, to pick medicines, foods and high-grade cosmetics, in tools and spare parts retail as well as in the fashion and retail industries. The Pick-it-Easy Robot can master a broad range of items thanks to its artificial intelligence and can (almost) see things and pick them up like a human. Even items wrapped in film, glass bottles or floppy items such as socks can be reliably and gently handled. The intelligent and versatile Pick-it-Easy Robot works around the clock when needed, increasing performance and providing considerable relief to its human colleagues, for example, by working the night shift.



2 For deliveries to supermarkets, goods must be stacked on pallets or roll containers in a stable manner. This is a job for the **palletizing robot RUNPICK** and the smart **packing arrangement calculating software KiSoft Pack Master**. This combination allows stable roll containers to be formed automatically according to defined specifications. Employees at the warehouse no longer need to do the heavy lifting and carrying, and neither do the employees at the supermarkets, because the roll container is stacked precisely according to the layout of the supermarket.

Do you want to see what it looks like when robots play Tetris? Watch this video



Service technician? That's the guy with the screwdriver!

Always on the go in his overalls, with a tool box in his hand – that's what you have in mind when you think of a service technician, right? Well, here's some news – service and maintenance has undergone an amazing transformation in recent years. The trend has been towards digital services and intelligent information and what's more, *“as much as 90 percent of our service call-outs are solved using remote technology,”* says Alessandro Freidl, Director of Online Services at KNAPP. Intelligent information is extremely useful when it comes to the day to day business of running a warehouse, including predictive maintenance or staff allocation planning.

Intelligent information keeps the system at its best

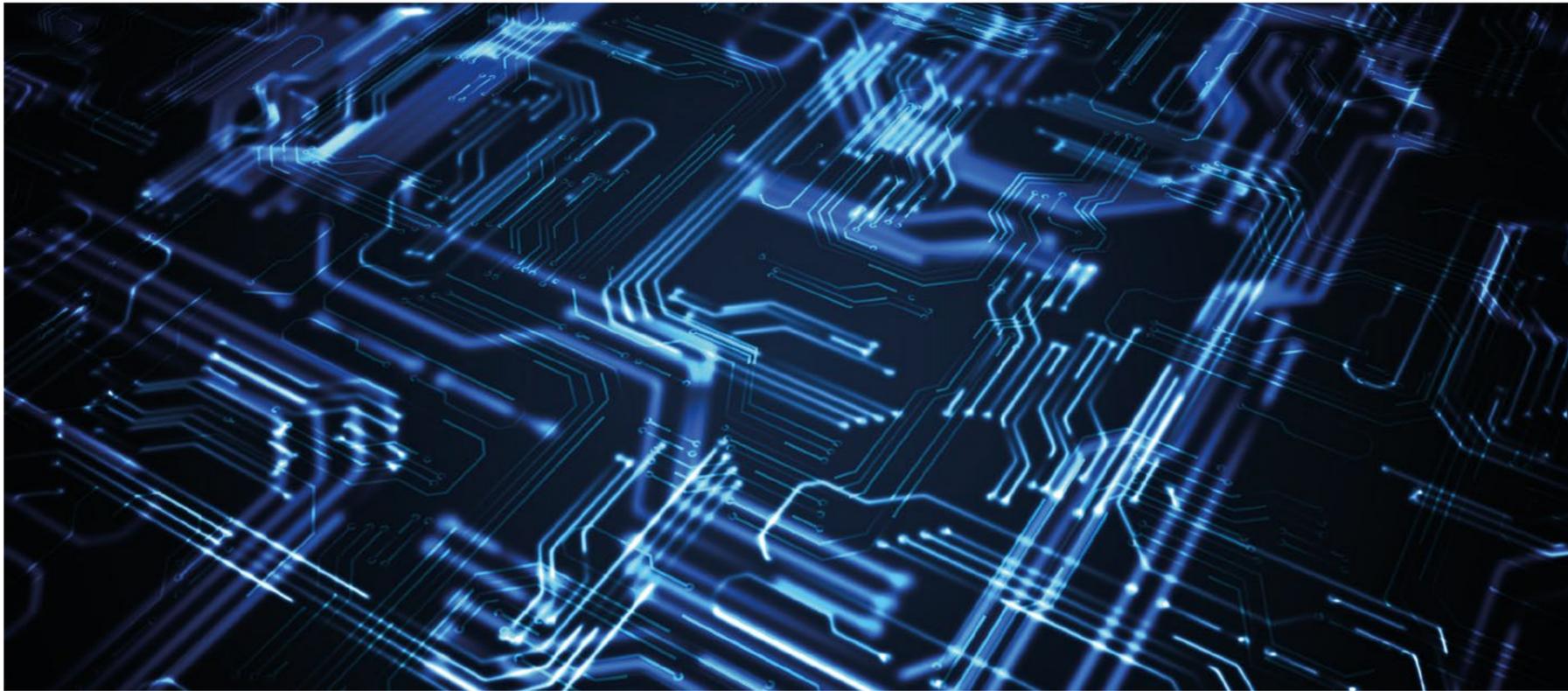
With our Lifecycle Management, we work closely with our customers to ensure the reliable operation of their systems. One valuable tool in the service toolbox is **KiSoft Analytics**. The software application analyzes relevant system data and displays it in a dashboard with KPIs,

facilitating the decision-making process whether for the short, medium or long term.

Another clever assistant is the **redPILOT Operational Excellence Suite**: This software keeps the logistics system running optimally at all times. With redPILOT on the team, shifts are easily and quickly planned, with the right person with the right qualifications always being on the right job. The **CMMS tool** (Computerized Maintenance Management System) by redPILOT uses system data to schedule maintenance tasks in a structured way. This saves costs, prevents unexpected failures and optimizes the efficiency and availability of the system. Additionally, reports are available at all times to provide a system overview.



Find out more



„About 40 percent of our business today is through our e-commerce channel, but we anticipate that will grow to 60 percent over the next 4 years.“

Scott Jayes
VP Business Operations
Allied Electronics

Flexibility Takes Many Forms

Allied Electronics: A joint commitment to digitalization

When Allied Electronics embarked on its journey to expand their North American business unit in Fort Worth, Texas, there was a long list of goals they set out to achieve. In order to meet their overarching objective – to build a state-of-the-art expansion that was true to their mission, as a leading supplier of automation and controls products – they would have their work cut out for them, in more ways than one.

Responsible for North America, Allied is part of Electrocomponents, a \$3B global distributor of automation and control products providing access to more than 500 brand name suppliers. The team of 800 employees in Fort Worth offers multiple service options to satisfy every need of a diverse range of customers. Through its website, www.thinkallied.com the company offers over 3 million products and is a powerful tool for any engineer or purchaser. Through its advanced search functions, expert advice and innovative Visual Product Finders, customers can find products from all areas of industry and eCommerce.

Top of mind was the Allied's digital channel and addressing the growth of this channel. Scott Jayes, VP Business Operations at Allied put it succinctly, when he noted that *“Our digital channel brings another level of transparency for customers. They have choice and knowledge at their fingertips to compare solution providers, and what they offer.”*

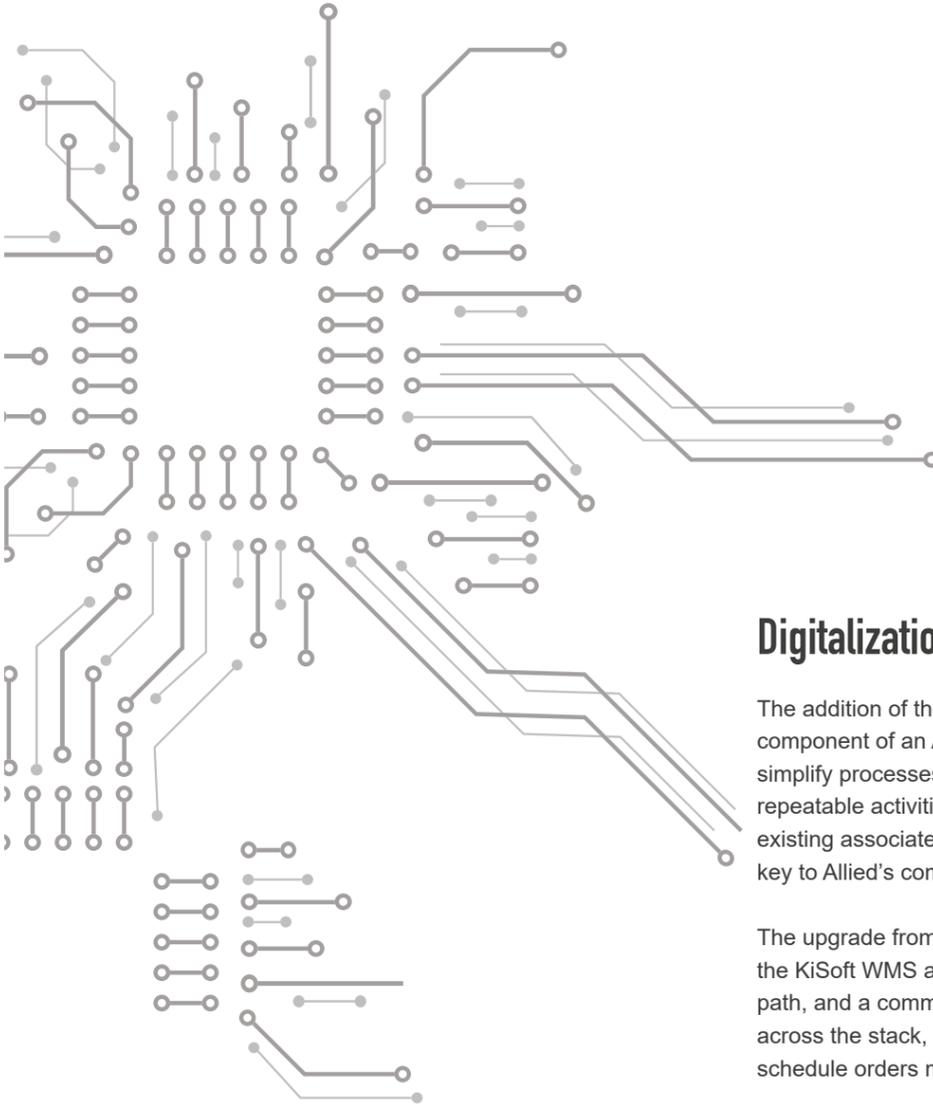
Allied has continued to grow since that time according to Scott Jayes. *“About 40 percent of our business today is through our e-commerce channel, but we anticipate that will grow to 60 percent over the next 4 years,”* with plans to double the number of articles from 200,000 to 400,000

and room to grow our inventory to 600,000 articles. All this while continuing to build the company's reputation for delivering a best-in-class service experience for the Allied customer.

Allied was in fact a perfect fit for KNAPP, expanding on the longstanding relationship that began ten years earlier when the two teams worked closely together on the original 300,000 ^{ft}2 (27,870 m²) Allied facility, which included one of the first OSR Shuttle™ systems, and went live in 2007.

To accomplish their goals, the team had to add more than 200,000 ^{ft}2 (18,500 m²) bringing the total to almost 500,000 ^{ft}2 (47,000 m²). The core of the addition included the OSR Shuttle™ Evo, delivering high density storage and sequencing to a network of 35 goods-to-person stations.

An efficient goods-to-person solution was designed in combination with a pocket sorter from KNAPP to manage and sequence multi-line orders rapidly from order picking to automated packing. All-in-all, 75 percent of orders are picked, packed and shipped the same day as they are received, with the balance of orders shipped to meet specific customer delivery schedules, or are non-stock purchases.



Digitalization & the technology stack

The addition of the KiSoft WMS and WCS was a key component of an Allied automation strategy; designed to simplify processes, and to reduce or remove repetitive and repeatable activities, the strategy that would in turn, free existing associates to perform value added tasks that are key to Allied's competitive advantage.

The upgrade from the existing technology stack to include the KiSoft WMS and WCS featuring a simplified integration path, and a common user interface that was consistent across the stack, simplified training and was able to schedule orders more efficiently.

We learned a lot about resiliency

As the project was nearing completion in March of last year, it became evident as more and more information about the spread of COVID-19 became available, that the Allied and KNAPP team had a much larger and unexpected challenge and that project managers, engineers and implementation teams would have to work hand-in-hand, make creative decisions and create a new playbook that was never anticipated at the beginning of the project. The project had to remain on track as Allied customers included many front-line businesses, including hospitals, healthcare organizations, food manufacturers, and those supporting critical needs – required essential products and components supplied by the Allied team.

The project was two-months ahead of schedule with a go-live date planned for April 2020 when COVID-19 impacted the US economy. After considering the alternatives and impacts the team decided to proceed with the project. *"We definitely learned a lot about resiliency and what we can deliver under difficult conditions"*, said Jayes.



Commitment, teamwork and creativity

Scott Jayes, and Chris Hewardine, Director of Operational Improvement at Allied credit the global reach of their parent company RS Components with providing advanced insights to the group. News of the pandemic and its rapid spread began to emerge in late 2019 at their China facilities, followed by reports at their Italian operations.

Similarly, a group of KNAPP software engineers who were scheduled to go home chose to stay in place at a crucial point in the project to ensure completion as travel bans were being enacted – it's unlikely their replacements would have been permitted to travel. In this way, we succeeded in implementing the project successfully against all odds. A bold decision in difficult times.

"People initially thought we might be over-planning for the pandemic, but it proved beneficial, and those lessons are now part of our playbook." Jayes says. Site protocols were quickly put in place, including masks, temperature checks and other safety measures. *"We had to get creative to do testing, and mobilize the business that was working from home,"*

At the end of the day, people were a critical component. Scott Jayes and Chris Hewardine, credit Fred Martin, the project manager from KNAPP for ensuring the team was able to meet final deliverables under difficult circumstances. *"You'd think he worked for Allied"*, Hewardine says of Martin.



The Voigt Group at a glance

For over 150 years, the Voigt Group has been a reliable partner for both the pharmaceutical industry and specialist retailers in Switzerland. Sustainability, responsibility and innovation are the drivers behind the development of tailor-made logistics solutions and services to meet new market and customer demands. The group aims to achieve potential synergies and increase efficiency while maintaining the same level safety and quality.

VOLOGIN

The flexible all-in-one pharma supply chain

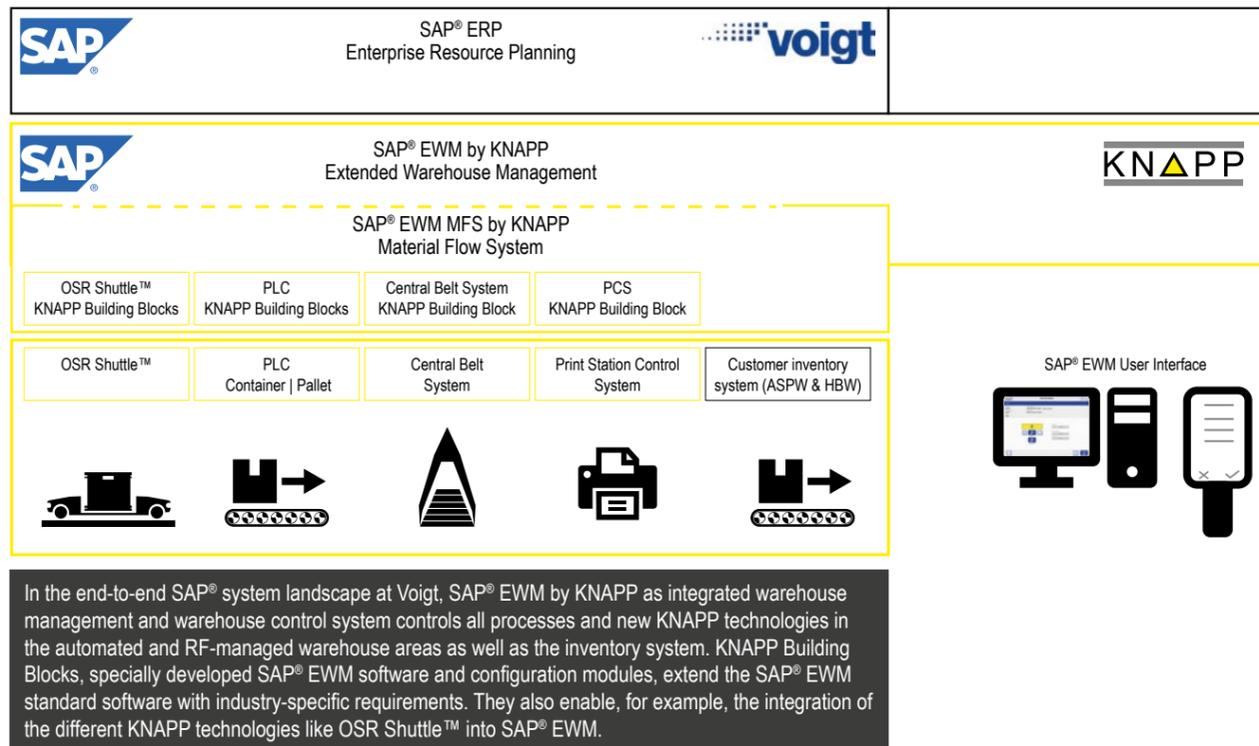
Zero error tolerance, state-of-the-art infrastructure with high safety measures, minimal costs, the entire product range available within minutes and being able to adapt quickly to new market situations. These are the requirements for the supply chain of the future in pharmaceutical distribution. In collaboration with Voigt, we have created a flexible supply chain: VOLOGIN.

The idea behind this acronym, which stands for VOIGT LOGISTIK INTEGRATION, was to merge pre-wholesale with wholesale in a distribution center as part of a logistics solution at the Niederbipp site in Switzerland. Along with consistent system use for both business areas, achieving synergies and flexibility for growth and expansion were other goals we wanted to achieve.

The solution is designed to handle the short-term peak periods that are typical in the wholesale business. While the workload for the pre-wholesale business is consistently distributed throughout the day, wholesale has two peak periods per day: at noon and in the late

afternoon/evening. The logistical operations for the pre-wholesale business take place outside of these periods. Overall, this results in a highly profitable and even use of the system throughout the day. Goods are stored and retrieved based on the same principle. Coordinated and controlled by SAP® EWM including MFS, the workloads of both pre-wholesale and wholesale are distributed throughout the day.

State-of-the-art warehouse technology and software form an end-to-end IT environment extending from the manufacturer to the end customer. With this fully integrated system, Voigt is optimistic about new potential for success and further market growth.



Central elements: SAP® EWM by KNAPP and OSR Shuttle™

The intelligent management of both business areas by a highly dynamic OSR Shuttle™ system creates synergies beneficial for personnel allocation, route planning and goods-in. Overstock is automatically stockpiled for the SDA channels of the Central Belt System. Overstock can be picked directly for customer orders with large quantities. In the goods-out area for pharmaceutical wholesale, the order containers that are ready to be shipped are presorted by the OSR Shuttle™ Sorter according to outbound delivery sequence criteria. As a result, route planning no longer requires a laborious work step during vehicle loading. The system also buffers products between picking and shipping and ensures an

even workload distribution even during peak periods. The SAP® EWM by KNAPP software solution handles warehouse management and material flow. It manages all processes involved in advanced shipment notification, goods-in, storage, replenishment control and goods-out in the RF-guided areas as well as the automated warehouse areas. In goods-out, various calculations are made for the handling units, not only to ensure the optimal use of space, but also regarding their transit times by order type and time remaining before shipment. Software modules, the KNAPP Building Blocks, are used to meet industry-specific demands such as optimizing order start and coordinating it with wave planning.

What else has VOLOGIN to offer?

We met with Christian Fritz, CEO at Voigt Industrie Service AG, Dieter Hochörtler, Europe South/East Direct Sales at KNAPP AG, and Gerald Lassau, Managing Director of KNAPP IT Solutions GmbH, for an interview about VOLOGIN.

Dieter Hochörtler:
VOIGT has three sites in Switzerland. How will operations change at these sites in the future?

Christian Fritz:
In Romanshorn, where the company was founded and is still headquartered, we handle the wholesale business. The Niederbipp site focuses on pre-wholesale, and in Neuendorf we handle both these business areas. 6 years ago, we launched the VOLOGIN project with the goal of closing the Neuendorf site and transferring all activities to Niederbipp. This strategy means we can cover all the wholesale and pre-wholesale activities with one installation in one location.

Dieter Hochörtler:
What's your take on the market requirements with regard to what the market needs and the goal of reaching full integration?

Christian Fritz:
The requirements have changed drastically. Fifteen years ago, businesses along the pharmaceutical supply chain were relatively neglected. Today, the business is considered a key success factor for the entire supply chain from manufacturer to distributor to retailer. That's why this business has gained

tremendous value. The regulations covering medicine safety and especially those pertaining to security measures against theft, are a very hot topic in the industry. Therefore, it is vital that pharmaceutical logistics meets the most stringent requirements, not only with respect to regulations applying to medicine but also in their day to day operations as well.

Dieter Hochörtler:
An interesting aspect affecting the new warehouse are the Good Distribution Practice (GDP) and Good Manufacturing Practice (GMP) regulations. We now have an end-to-end solution specifically designed for cold-storage products that covers all areas: incoming goods, storage, picking and outgoing goods.

Christian Fritz:
Ten years ago, you could ship products requiring refrigerator temperatures using a dock at ambient temperature. The truck arrived, the goods were unloaded, passed through the ambient area into the cold-storage area where they were received. Today, this is no longer possible. We now have separate docks for products requiring ambient, cold-storage and deep freeze temperature ranges. The docks ensure that the medicine never leaves their required temperature

ranges. These valuable, highly sensitive products might become unsafe to use if the temperature is not right, causing substantial damage to the product and putting patient safety at risk.

Dieter Hochörtler:
What are the greatest synergies that Voigt has achieved by merging pre-wholesale with wholesale?

Christian Fritz:
As a medium-sized business, we had to come up with a unique concept to ensure the longevity of our company and which would elevate us to a whole new dimension. Because pre-wholesale and wholesale are structured differently, the two business areas are usually handled by separate systems in the pharmaceutical supply chain. We put in tremendous effort to make sure that we could merge both business areas. With this combination, we are entering new territory. However, we are running successfully with it and the combination is opening up new opportunities. For instance, we can find new ways to save money, but also put new products on the market, be it for wholesale or pre-wholesale.

Dieter Hochörtler:
A core element of the system solution is the OSR Shuttle™ technology. It



“As someone coming from intralogistic, I am particularly fond of the shuttle system.”

Christian Fritz
CEO
Voigt Industrie Service AG

supplies the goods to the goods-to-person systems, picking systems, picking robot, and manages overstock for the adjacent warehouse areas. What is your favorite warehouse technology?

Christian Fritz:

As someone coming from intralogistics, I am particularly fond of the shuttle system. It’s the main show. Again and again, I am impressed to see the lifts racing up and down and the many small shuttles whizzing sideways, back and forth. It fascinates me every time.

Dieter Hochörtler:

Everybody is talking about green logistics. What was done for the VOLOGIN project in terms of sustainability?

Christian Fritz:

Sustainability has been a top priority for us for years. We use our energy resources judiciously and are prepared to make serious investments. The new building in Niederbipp meets the MINERGIE standard. It is a quality label for sustainable construction in Switzerland. The redundant heating and cooling systems were also built using sustainable materials. In addition, thermally activated building systems known as TAB systems turn the entire construction into a

thermal energy storehouse. That way, we ensure a temperature-stable and energy-efficient environment. Groundwater is another source of energy we use. We pump up an average of 7,000 liters (1,849 gallons) per minute, use the water as an energy source and, of course, send it back down again. We have also increased the number of solar cells.

Gerald Lassau:

Another important sustainability aspect is the way a warehouse is controlled. Voigt opted for SAP® EWM to serve as their warehouse management and material flow control system. Their previous system was a non-SAP® system, which tends to be somewhat of a black box. What were the advantages for Voigt that came with implementing SAP® EWM by KNAPP?

Christian Fritz:

Originally, we were looking for an installation and software separately. In the end, however, we decided to try to find a single provider who could provide both since we were convinced that the combination of the two is of particular value. We opted for SAP® EWM, because SAP has invested heavily in the development of the solution – it enables us to control the process. We are playing a leading role in the software

development with KNAPP. For now, KNAPP is supporting us in providing the foundation and development for our own developers and software. However, we are eager to play an active role in this by leading this process and not by being led.

Gerald Lassau:

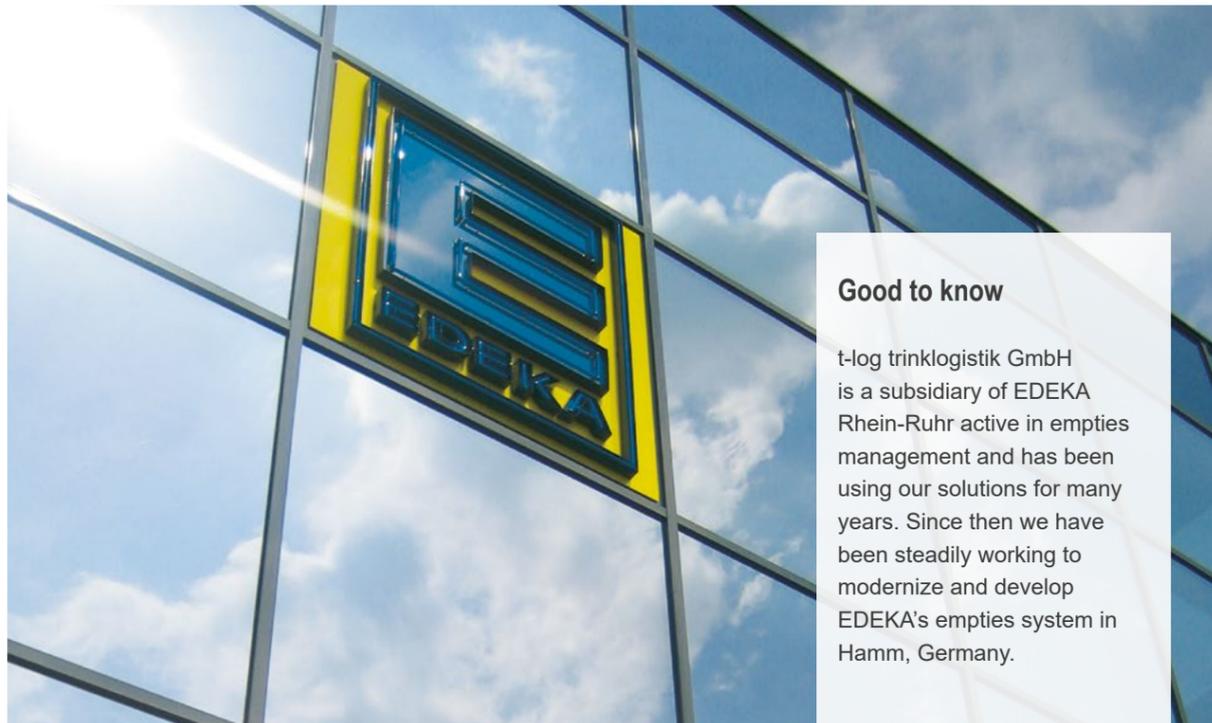
Supporting Voigt in building their SAP® EWM expertise has worked out phenomenally considering that we could only assist using remote technology during the April 2020 go-live because of the pandemic. How did you experience the teamwork with KNAPP, especially with regard to EWM?

Christian Fritz:

We successfully implemented a very challenging project. The installation is unique and very complex. I am very happy with how we work together and noticed that the employees involved are very active, even proactive, in the project. I feel that our relationship is based on sincerity, which I personally find especially important. We are very determined to achieve our objective, which is to make the project a success. I can definitely say that we are headed in the right direction. There is still much left to do, but I am confident we will succeed together with KNAPP.



Thanks to the smart combination of both business areas into a highly dynamic OSR Shuttle™ system, synergies are achieved with regard to personnel allocation, route planning and incoming goods.



Good to know

t-log trinklogistik GmbH is a subsidiary of EDEKA Rhein-Ruhr active in empties management and has been using our solutions for many years. Since then we have been steadily working to modernize and develop EDEKA's empties system in Hamm, Germany.

Flexible Planning

We love it when a plan works out. In logistics, a good plan is one that can be adapted quickly and flexibly because you need to be able to respond well to sudden changes. This is how to remain profitable when processing unexpected peaks in demand. It may be because an influencer is promoting a beverage or the Olympic Games are taking place. Or because a pandemic creates chaos in your processes. The logistics solution and the planning tool must provide the necessary flexibility. EDEKA Rhein-Ruhr has met this demand by implementing redPILOT's resource planning tool and an empties management solution by KNAPP.

Our empties management solution, **Reusables Management Solutions**, went into operation at EDEKA in 2012, which back then was already one of the most innovative sorting systems in Europe. Since then, we have continually modernized the empties system, flexibly adapting it to current market demands.

All the modernizations and expansions raise the system's overall throughput. To date, roughly 80,000 crates are processed per day at Hamm in Germany. In order not to disrupt on-going operations, the system is never modified as a whole, only separate parts of the system are modified.

Modernization as a response to market dynamics

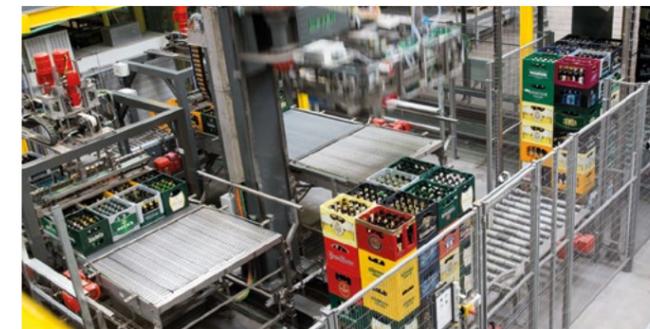
In 2015, EDEKA invested in their first modernization. Since then, single bottles have been sorted fully automatically by a sorting robot. The recognition system that precedes the robot was replaced two years later. As a result, the system now learns new bottle types and special bottles even faster, while error rates are reduced to a minimum. The handling units are now conveyed to the right sorting area based on the number of handling units and their turnover rate. The nine logo recognition machines are continuously renewed to make the allocation of beverage crates to the areas even faster and more reliable. This allows error-free allocation of the crates to the individual areas, saving both time and costs as well as manual post-processing.

Flexible automation in the goods-in area

Last year, we expanded the goods-in area by a manual depalletizing station. Now EDEKA is able to unload pallets either fully automatically or manually, depending on whether the incoming pallets contain mixed or unmixed articles. The four existing deposit detection machines were replaced as well. This has improved the accuracy of deposit booking and, in turn, the allocation to the sorting areas.

Optimized resource planning

Along with the modernization of the system, EDEKA also relies on a flexible solution for optimizing operations scheduling. redPILOT provided a solution with the necessary flexibility to respond to the ever-increasing complexity. The software not only supports day-to-day planning, but also shows available potentials related to costs and performance. Here is what redPILOT can do to help bring more flexibility to your business.



Key data

Types of handling units

- Crates and pallets

Performance

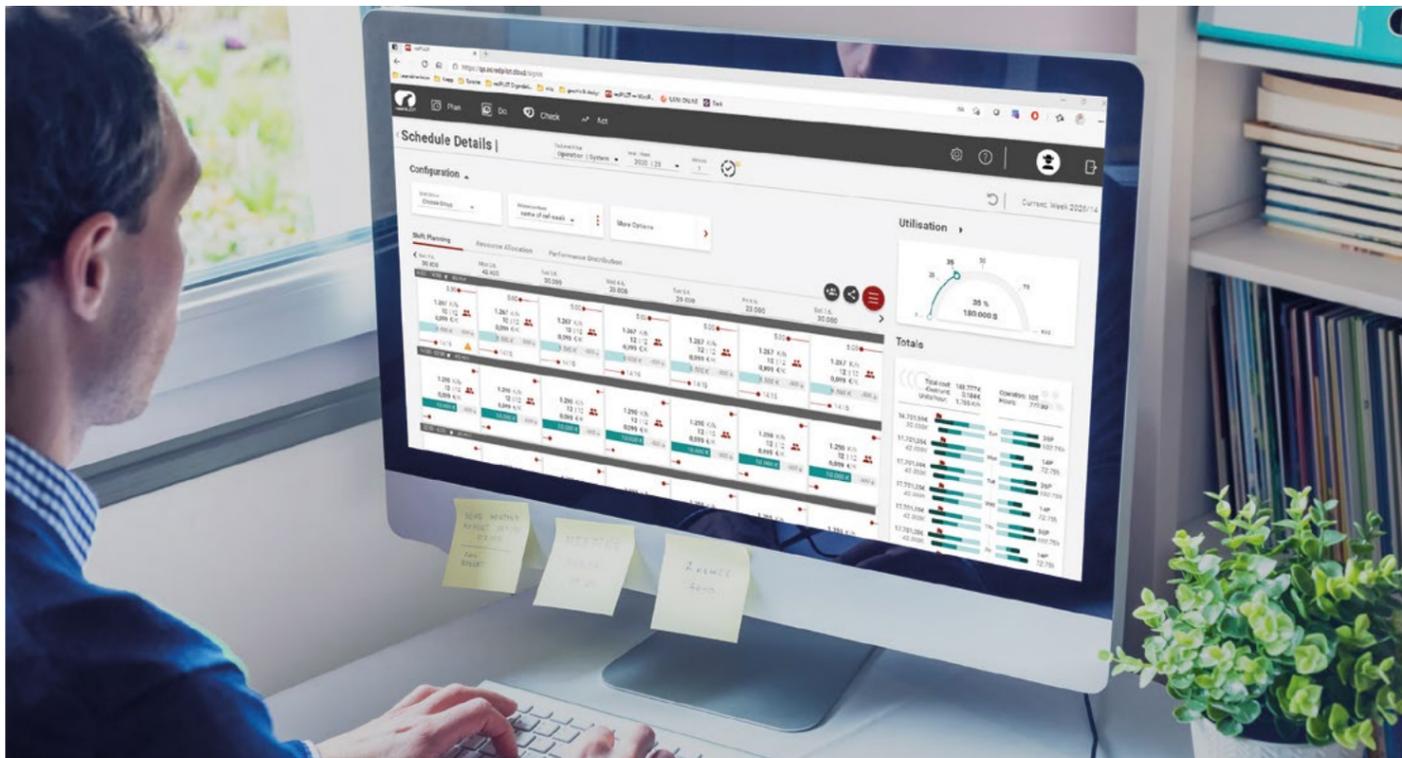
- 80,000 crates per day / 2.2 million crates per month

Core components

- Pallet and container conveyor systems
- 14 electronic image and logo recognition systems
- 3 manual depalletizing stations
- 2 automatic depalletizing robots
- 2 automatic palletizing robots
- 2 bottle-sorting robots
- 2 automatic transfer shuttles

Software

- Warehouse visualization
- KiSoft RCS (Reusables Control System)
- KiSoft Transport



redPILOT Operational Excellence Solution supports

- searching for the best resource configuration and creating ideal work schedules
- detecting bottlenecks and adapting to changing conditions (personnel reassignments, etc.)
- continual further development based on figures, data and facts that are generated every operating hour

Flexibility means...

... to plan ahead with just one click

EDEKA employs full-time and part-time workers as well as students. The latter are hired primarily for peak periods such as Christmas and Easter. This diverse personnel structure adds a certain level of complexity to resource planning. In the past, the scheduler had to contact many people, find out who is available and when, deal with different personal requests, and manage everything in Excel sheets. Changes at short notice such as sick leave made this planning process even more difficult. Thanks to redPILOT, plans are now coordinated with just one click precisely where and when needed. Since the personnel required can be determined so precisely, the quality of the planning process increases tremendously.

... communication through the app

Shift plans can be viewed in teamAPP. Even if a worker cannot come to work for a single shift, this *open* shift is posted on the app at EDEKA. A look on their smartphones lets the colleagues know when they can apply for a shift. Only employees with the right skills receive the information. Those interested can apply for the shift directly through teamAPP and the scheduler can accept the change in redPILOT. The entry is automatically saved and the plan updated.

... a boost in employee motivation

Employees' skills are managed transparently in redPILOT and are automatically taken into consideration when shift plans are created. This means that employees are primarily and justifiably assigned those work tasks that best suit them. Average performance is thereby raised along with employee satisfaction. What's more, legal and operational framework conditions (e.g. maximum number of working hours, job rotation) are integral parts of redPILOT and automatically taken into consideration.

...increased performance

redPILOT constantly informs the people responsible at trinkgut about bottlenecks or excess capacities in the warehouse including their locations. Thanks to the interface to KiSoft, the software that manages the handling units, the system's data is constantly analyzed. redPILOT also suggests alternative strategies to the people responsible. This way, schedulers and shift supervisors can quickly and easily decide which worker should be reassigned to work at which system component. Bottlenecks are managed optimally, while excess capacities and idle times are eliminated. This continuous online optimization raises the overall performance of the warehouse.

... low operating costs

Shift models can now be created more flexibly and planned to meet specific requirements. Excessive planning for unexpected fluctuations becomes almost unnecessary or is even completely eliminated. The quality of the planning process is improved as well as personnel assignments and system utilization. Minimized personnel assignments and system utilization naturally translates into reduced operating costs.

... decision making becomes easier

Managers always have an overview of the completed tasks and job performance, allowing them to work towards long-term improvements. Potential for savings can be immediately identified thanks to integrated, end-to-end activity-based costing. How much does a pick cost at which work station? This is not a theoretical calculation, but one that is generated automatically based on the processing time needed in real life.

... cross-site

The company has many locations with similar logistics applications; the processes can be perfectly compared in terms of numbers, data and facts for improvements in best practice approaches that are supported by the system.

... flexible supply in perfect timing

The empties system is currently working at capacity. To increase throughput and improve the system's performance, the installation will be expanded by an additional third line this year. Our empties system at EDEKA is designed to be operated efficiently year-round and to flexibly respond to peak periods. This helps our longstanding partner sort the returned empties in a timely manner and to supply them by beverage producer.



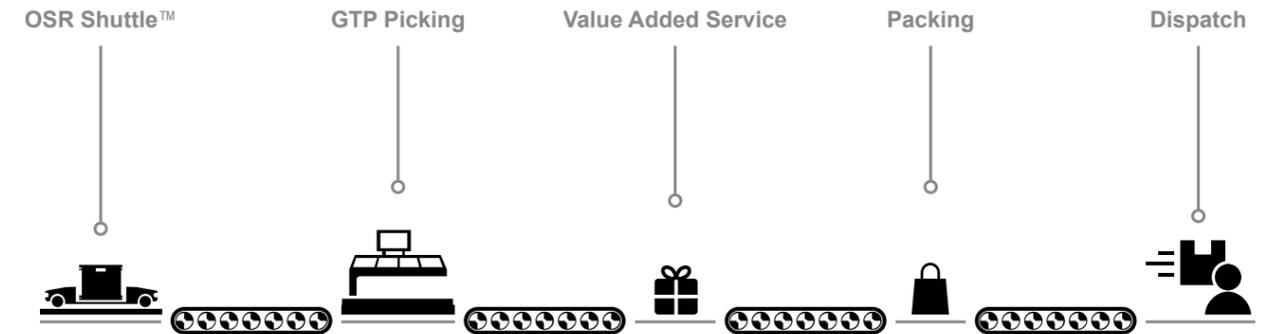
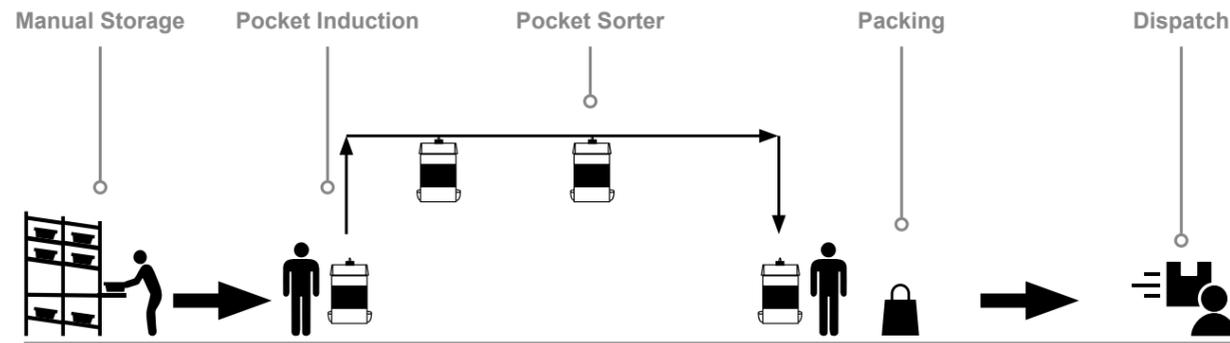
Life isn't perfect but your outfit can be.

**Our style guide for
your perfect logistics outfit**

Based on many years of experience in the fashion industry, we have developed a portfolio of solutions that not only guarantee one-of-a-kind quality, but also deliver innovation and excellent economic value. Our individually designed logistics systems are fitted to your requirements like a well-tailored custom suit. Unlike off-the-rack, this is made just for you this can be adapted and customized as required and timeless. This ensures long-term investment security, even in a world of rapidly changing business models.

“Our customers benefit from short delivery times. Thanks to the scalability of our systems and high efficiency, we can ensure fast transit times even in extreme peak seasons. Efficient logistics, meaning cost-efficient logistics, gives us a clear advantage over competitors.”

Andreas Krüger
Head of Logistics
BRUNO BADER GmbH + Co. KG

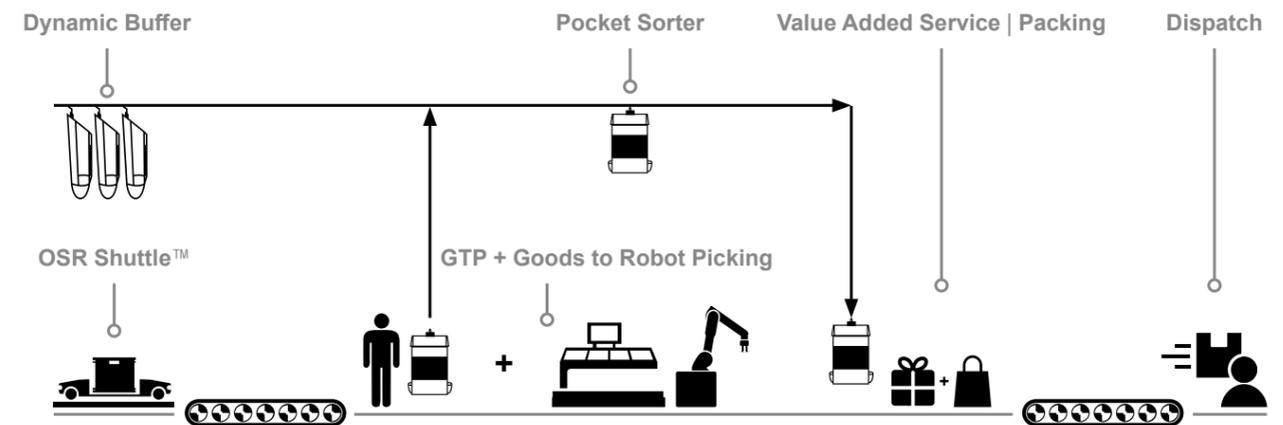
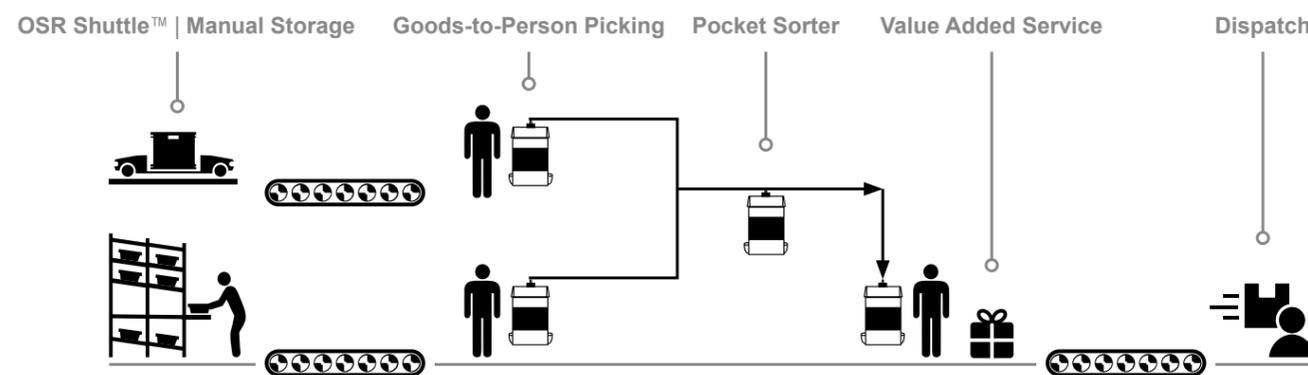


S The little black dress of the fashion industry

The small, yet elegant solution – a true staple, sophisticated and simple. Despite the comparatively low investment costs, the size S solution impresses with its fully automatic sorting and supplying to Pick-it-Easy workstations – a simple and safe workflow, from assignment to pack station.

L Less is more

Making complexity simple – this is the fashion slogan of this solution, because although it seems simple, this high-performance installation has real power. At the heart of the solution are the shuttle system and the ergonomic Pick-it-Easy work stations. Coco Chanel once said: *Simplicity is the key note of all true elegance*. This is how we see it too: simplicity is the key to system scalability. We can simply adapt to future challenges and elegantly enhance your warehouse outfit.



M The must-have that never goes out of style

Size M is a timeless combination that is always one step ahead of every trend. The interaction of manual and automatic warehouse areas provides enough flexibility to deal with a broad inventory range. Unlike size S, this solution includes a smart shuttle system, with dazzling efficiency and scalability. With value-added services, you can offer your customers customization – which embellishes every solution.

XL Your made-to-measure suit

The size XL solution combines the basics and key pieces of all the solutions. Just like a well-fitting, tailor-made suit, it suits your needs perfectly. The pocket sorter system in this highly dynamic solution makes sure that goods from all the upstream areas reach the work stations in the exact sequence required. And extending its capabilities even more, returns management in this XL solution shows impressive flexibility. This makes our made-to-measure suit your must-have for all occasions.



Good to know

The Swiss company Digmesa has developed, manufactured and distributed flow measurement devices for fluids for almost 38 years. In combining the locations of the two subsidiaries, processes and production for both companies had to be restructured and moved to a new hall. As part of this relocation project, they wanted to automate the transport processes supplying the assembly machines, and in just four months, the flexible solution including an Open Shuttle was up and running.

Flexible Supply of Production

All things new – was the program last year for production at Digmesa, as subsidiaries Digmesa AG and Digmesa Polyform AG came together at a single location. Find out how an autonomous mobile robot became the flexible link between the two companies in a conversation with the two managing directors.

Rising coffee consumption drives growth at Digmesa

In what areas is Digmesa active and what has changed over time?

Stefan Schneider: Digmesa is a typical small to medium sized company, and we develop, produce and distribute flow meters for various industries. You'll find a flow meter that we built in almost every coffee machine in the world. That's why the coffee machine boom and the digitalization of the past

ten years has resulted in a particular upswing for our business. When I first started at Digmesa, we were producing 100,000 flow meters a year. In the meantime, that number has grown to 10 million. You can't easily produce these numbers manually, so early on, we began to automate.

Dominik Huber: Polyform Kopp AG was acquired by Digmesa in 2013, and rebranded.

We do classic contract work in thermoplastic injection molding and produce plastic parts for Digmesa, but also for other customers. We've had to constantly invest and adapt our processes to be able to produce these huge numbers. Last year, we combined locations and introduced an ERP system. Our work together recently took a step forward when we added the KNAPP system.

An Open Shuttle provides reliable material flow to the injection molding machines

At Digimesa Polyform, an Open Shuttle is being used for bringing empty containers to the injection molding machines and for transporting the finished pieces to their next stop. The central starting point of the solution is a flow rack. Here, buffer storage is organized around a FIFO storage strategy (first-in, first-out). A KNAPP PLC application controls the solution completely without any connection to a Host system. Light curtains at the racks are used to keep track of how full the individual channels are.



“Thanks to the Open Shuttle, we’ve not only optimized our processes, but also our storage quantities”

Stefan Schneider
CEO
Digimesa AG

What was the process like before you used the Open Shuttle?

Dominik Huber:

We had been using a simple filling system, which filled cartons with the plastic parts. These were then weighed on a counting scale, counted and the cartons hand-labelled. A driver had to bring the cartons to the Digimesa location three times a week. The parts were then submitted to a further quality check before they were added to the assembly machines. The cartons then made the return trip. By switching over to using an Open Shuttle, we were able to optimize processes and save resources.

Stefan Schneider:

The decision to combine the locations opened up many opportunities for us. We used value stream mapping as an analysis to help us design the material flow processes for the new building from the entry of the raw materials all

the way to goods-out. We are talking about 10 million pieces of the same product type. Our injection molding machines run continuously, with 24/7 operation of our assembly machines, so optimal material flow is important, as is having no standstills. This was the critical factor for investing in an autonomous system that – without a driver – puts things in the right place.

What made you decide on an autonomous mobile robot as transporter?

Stefan Schneider:

Basically, we were looking for the simplest way to get parts from the injection molding machines to the warehouse. We looked at various different automation solutions. We realized that an autonomous mobile robot (AMR) could handle all of these tasks independently. The implementation time was also crucial.

The new building was planned, and we needed to find a suitable solution. The *simple* solution that we now have comprises three components: a warehouse, an Open Shuttle and the outfeed points. KNAPP made this all possible thanks to the simplicity of the solution and the rapid, competent project implementation.

Dominik Huber:

I absolutely agree with Mr. Schneider. The real advantage is that the Open Shuttle has an integrated lifter, which really set the KNAPP AMR apart. I looked at a few systems on exhibit and none of them had a lifter.

Stefan Schneider:

What really convinced us was the shuttle’s functionalities. In comparison with other systems, with the Open Shuttle, we can pick up and deliver at various heights. This is something we needed that only the KNAPP AMR could fulfill. As we began to talk to the

KNAPP employees, we also quickly realized how dynamic, flexible and competent the company is. This was very impressive, and we also had a lot of confidence in the solution they finally gave us.

As a company grows, automation becomes more important. However, some might say jobs are lost because of this. How do you see the situation?

Stefan Schneider:

The person is a central element in the Digimesa corporate culture. We want to live up to these values in the future as well, and we want to give our employees the opportunity to develop. You can be sure that automation generates a certain type of job, and in extreme cases, eliminates jobs in other areas. I see our situation like this: Without automation, we could not produce these quantities. Especially not at the Swiss site. We would have

no chance to exist as a company. This really means that without automation, there would certainly be fewer jobs. We see it as an opportunity to keep developing new products and innovations, stimulating growth and creating jobs.

Dominik Huber:

Of course, current trends mean that more specialists are needed, and fewer unskilled workers. However, at the quantities that we produce, automation also makes things easier for employees.

The Open Shuttle has been up and running for a couple of months. What are your thoughts on the system so far?

Dominik Huber:

We have worked a lot with the Open Shuttle and the experiences are good. At the beginning, there were a

few difficulties with the positioning, which was related to the new building. With your help, Mr. Schneider and I were able to solve this problem very quickly. In the meantime, we are really thrilled with all the different things we can do with it.

Is there anything about the project that you would do differently?

Stefan Schneider:

Yes, we would do things differently on our side. Everything happened at the same time. Moving to the new building, setting up the system, the startup of the machines as well as the KNAPP system, the reorganization of our purchasing routine and, at that same time, production had to continue. It was quite stressful. The startup of the injection molding machines was scheduled at the same time as the startup of the Open Shuttle. We could have done better



“The flexibility that we gain by using this system is incredibly valuable.”

Dominik Huber
CEO
Digimesa Polyform AG

with the scheduling. But from just the project development perspective, with KNAPP everything functioned well on both sides.

What other tasks could the Open Shuttle handle in your company?

Stefan Schneider:

Well, I have a few ideas (laughs). Right now, the AMR is bringing the parts to the warehouse automatically. From there, we are bringing them to the assembly machines manually. This is also a transport task from one defined location to a clearly defined destination, which is currently carried out by an employee. This process would definitely be eligible for automation. I'm sure there is still potential to be used.

What are your goals for the future?

Stefan Schneider:

The first thing on the list is to finish with moving and getting operations combined for the two companies. Culturally speaking as well, there is still a lot to do. This affects the improvement of the technical consolidation and processes. Furthermore, we are still feeling the effects of the pandemic in a major way. Everyone is still working from home and has invested in at least one additional coffee machine (laughs). Our order books are full, and now we have to create the capacity. This means capacity not only in injection molding, but also in assembly. We have made plans for large investments to ensure that we can fulfill the demand for our products. In addition to this, we also want to

continue to develop our company, be innovative and develop new products.

Dominik Huber:

The consolidation of the two companies at the Ipsach location and the connection of the production areas with the Open Shuttle is just the first step. Now we've got to get on with the cultural integration, and which projects will then open up after that, well, we'll just have to see what happens.



The Open Shuttle supplies the injection molding machines with empty containers from the flow racks and transports the finished parts away. This transport process connects the two subsidiaries.