

world of solutions

making complexity simple

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Innovators. Progressive thinkers. Shapers of the future.

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Using data analyses, for example with robot solutions based on AI and digital services, we are not just overcoming the challenges, we are creating added value and a real competitive advantage.

*Roman Schnabl,
Vice President Product Management,
KNAPP AG*



**Ladies and gentlemen,
valued business partners!**

We can all feel it. The world is changing faster than ever before. Since we are all part of it, we are experiencing this change on a daily basis. But that doesn't mean that keeping pace is easy. No matter what sector your company works in, you must be agile and capable of rapidly adapting to changing circumstances in the market.

Fast and flexible services are in demand, often for the smallest of lot sizes, to keep customers and business partners satisfied, and to stay competitive. Globalization and digitalization are opening the door for international comparability, turning up the pressure.

For logistics in particular, the need for increasing flexibility, accuracy and efficiency with ever smaller order quantities and lot sizes poses a major challenge. Luckily, there are progressive thinkers and innovators who have already overcome what was once considered an unsolvable problem, using disruptive technologies and solutions.

We can consider ourselves among these innovators. Thanks to our new technologies and solutions, we have significantly improved the world of logistics for our customers. Our company founder, Günter Knapp, was an inventor. He conquered the challenges that his customers were facing with well thought-through technologies that, in turn, made their lives easier.

Every era comes with its challenges; back then, it was innovative mechanical technologies, while today it is intelligent, integrated and flexible all-in-one logistics solutions.

Our top priority is to be a reliable and innovative partner for our customers, now as well as in the future. Not a day goes by where we are not working to develop technologies, solutions and services that will be the answer to the challenges you face, both today and tomorrow, and that will translate into competitive advantage for you.

A handwritten signature in blue ink that reads "Roman Schnabl". The signature is written in a cursive, flowing style.

Those who shaped the future in logistics


€ 50 m

KNAPP invests € 50 million in research and development each year


700

employees worked on new and further developments in the past fiscal year

KNAPP
innovations since 1952



Founder of the international postal services



Italy/Germany
1459–1517/1470–1541

FRANZ VON TAXIS
JOHANN BAPTISTA VON TAXIS

In the 15th century, Franz and Johann Baptista von Taxis set up the first cross-border messaging system that paved the way for today's postal system.

postal services

Inventor of the truck



Germany
1834–1900

GOTTLIEB DAIMLER

Gottlieb Wilhelm Daimler was a German engineer, designer and industrialist. He is seen as inventor of the truck and pioneer of modern freight transport. He can claim to have developed and played a part in building the most successful means of freight transport ever.

automotive industry
mobility

Inventor of parcels services



USA
1888–1983

JAMES E. CASEY

US businessman James E. Casey is inventor of parcel services and founder of the *American Messenger Company*, the world's first parcel service and forerunner of United Parcel Service (UPS).

transport logistics
parcel service

Inventor of Kanban



China/Japan
1912–1990

TAIICHI OHNO

In the mid-20th century, Taiichi Ohno (*1912 †1990) developed the basic logistics concepts of the pull principle, just-in-time and kanban, successfully implementing these concepts at Japanese car maker Toyota.

automotive logistics
management

Inventors of the barcode



USA
1921–2012/1925–2019/1924–1963

NORMAN JOSEPH WOODLAND
GEORGE LAURER
BERNARD SILVER

Students Norman Joseph Woodland and Bernard Silver devised the technology that led to barcodes. George Laurer is considered the inventor of the present UPC barcode standards.

IT
identification technology

Revolutionizer of order fulfilment in pharmaceutical wholesaling



Austria
1907–1989

GÜNTER KNAPP

Günter Knapp has the idea of an automatic picking machine for small pieces. He recognizes the enormous potential of electronics, IT and microprocessor units in the conveyor system that control the movement of containers. This was the cornerstone for fast, accurate order processing.

intralogistics
distribution logistics
automation
software

Revolutionizer of e-commerce and logistics



USA
born in 1964

JEFF BEZOS

Jeff Bezos is founder and President of Amazon. With technologies such as cloud computing, digital streaming and artificial intelligence, he has revolutionized e-commerce and logistics.

e-Commerce
mail-order business
and logistics
software
intralogistics
distribution logistics

Co-creation is the future

Anders Indset is one of the leading business philosophers in the world and is a sparring partner for international CEOs and leading politicians. Called the Rock'n'Roll Plato by the media, he is currently the most popular keynote speaker in Europe with his approaches to practical philosophy. His first German book *Quantenwirtschaft* (quantum economy) reached number 3 on the Spiegel best-seller list and number 1 on the Manager Magazin list of best-selling economics books. The book's premise is that the promise of the 90s – that technology would liberate us – will never work. What follows is a new approach – quantum economy.



We speak with Anders Indset at the Leoben Logistics Summer about intangible goods in logistics and humanity in the business world.



Technology alone is not the answer to all our challenges. KNAPP is one of the leading and most innovative companies in the field of supply chain automation. What else is it going to take to overcome the future challenges in the logistics sector?

Anders Indset: I think that it is important to constantly question yourself, especially as a technological leader. We have to question the way we think about our own technologies and systems. I also believe that the human element must be given much more emphasis. What I mean by that is that we work together more intensely. Not from the top down, but as equals. What management is responsible for today – that is, controlling processes and such – will in future be increasingly taken over by technology. It's about creators and leadership. In future, leadership will be found in all aspects of the company. In future, there will be only one boss: the project. It will be developed in a joint effort to the best of all the actors' abilities. I also believe that we must learn to cooperate with our competitors. This will become more and more important. It's about cooperation. And about fields for training and testing and experimenting, where you can make mistakes and try things out without anything bad happening. There have to be situations where you can show

your feelings. Empathy, love and the like must be an integral part of the economy. This is also called vital energy.

A lot of what you talk about can already be found in our company. What will the relationship to the customer look like in future? What part will the vital energy play in this?

Anders Indset: It's all about trust. Trust is needed when teams venture together into the unknown. Customers, too, can play a strong role here and be much closer and more involved in the development – they can become co-creators. The customer and the supplier will work more closely together. There has to be an awareness of trust. Soft skills are important. When it comes to the capitalization of vital energy, let me add that I am basing this on the hierarchy of needs. Material goods are on the lowest level of Maslow's hierarchy of needs. We have made this a huge area in our lives. We believe that we need two Ferraris and four homes to survive. We must find ways where we can also move up to the higher levels of Maslow's pyramid of needs. So, how can we establish intangible goods with our customers in a relationship of mutual trust? This

will become increasingly important. It is a very complicated matter and we are only just at the beginning. However, I believe that we should start dealing with these things. How can we incorporate technological competence into the intangible? How can we then develop different models?

Do you have a specific example for KNAPP as a technological company?

Anders Indset: If I knew one, it would be very simple. But it isn't simple. However, I am certain that there are opportunities to establish capitalistic models with vital energy. I believe that it can happen even in such an area. I am not a business man but I would definitely begin to play with the idea.

One thing is the business model. The other is the corporate culture. How do I bring vital energy into corporate culture?

Anders Indset: When people are happy to come to work, the fact is that there will be 30 to 40 percent fewer sick days as well as greater motivation on the job. This changes everything. This is the *low-hanging fruit*. When people are kind to one

another and feel appreciated in the company, remarkable things begin to happen to the KPIs. And this doesn't cost a thing.

What would your first practical tip be?

“Be kind to each other. Culture is what you cannot copy or steal.”

Anders Indset: You just feel it. It starts with me. I am the creator of the company culture. I decide each day which emotions I want to project into the world. When I project frustration, I am also suffering. Many managers cover up their insecurities, trying to be important and give answers for the sake of giving answers. They don't really listen. They do this to try to protect themselves. They are afraid of being attacked and afraid of losing something. Those who have the courage to open up are often very successful. Of course, it's about serious issues, about structures and hard work – but it can all be connected. It all starts with me.

The new intelligence

Spring trade fair highlights

Raw materials, goods, data, people, locations and processes: Today, everything is integrated in networks. Furthermore, facing demands such as *customizing* or *seamless commerce*, logistics is becoming more complex than ever. In this data-driven world, our job is to create intelligent end-to-end solutions, viewing the entire value chain as a whole from production and distribution to the point of sale. Therefore, under the motto *the new intelligence*, we will be presenting three innovations revolving around the topic *intelligent value chains using data-driven logistics* live at our exhibition stands at LogiMAT in Stuttgart and at MODEX in Atlanta.

A robot that constantly learns Today, robots are not in short supply. That said, what gives our **Pick-it-Easy Robot** its competitive edge is its intelligence. Whether shiny polybags or fragile bottles, the robot precisely grips and positions a wide range of articles.

Using its artificial intelligence, the robot learns to grip new articles. The **Pick-it-Easy Robot** can therefore process a broad article range and be used for different types of tasks. They work round-the-clock, effectively supporting your employees, helping where you are short-staffed, in particular for the less popular and more expensive night shifts.

Robot as a service Thinking about a robot solution for your warehouse? But the investment costs are intimidating for unproven systems on the market that might only be available as stand-alone systems? So, the robots are always cut out of the budget – does this sound familiar? Thankfully, we're taking a new approach with our **Pick-it-Easy Robot**. We offer an attractive **robot-as-a-service model** that keeps the cost of entry manageable. What's more, the **Pick-it-Easy Robot** is a complete package that includes the software, so the robot can be seamlessly integrated into the overall system and flow of materials. The **Pick-it-Easy Robot** has proven itself adept worldwide in various sectors including healthcare, electronics and industrial applications.

Find out more about our innovative robots at LogiMAT and MODEX where our experts will also be demonstrating the Pick-it-Easy Robot smart cloud solution.





Pocket solutions for single-item sortation are state-of-the-art in omni-channel and e-commerce warehouses. We will present a new pocket system at the LogiMAT.

New AutoPocket boosts omni-channel fulfilment

Flexible pocket sorter systems are indispensable, especially in e-commerce and omni-channel fulfilment. Greater demands for fast delivery times, lack of sufficient space in urban areas and personnel shortages are all impacting the sector. That's why we improved our pocket systems and made them even more intelligent.

The enhanced pocket solution is designed especially for these high demands. Orders for e-commerce and omni-channel can now be fulfilled flexibly from one system with the same level of performance or even greater. Without loss of performance, goods can be fed into the system automatically from any location in the warehouse and every pocket individually accessed. This confirms that pocket system solutions have what it takes when it comes to handling complexity and throughput. In combination with fully-automatic loading stations, you can raise your logistical processes to a whole new level. Don't miss this new development! Experience our new AutoPocket live in Stuttgart.

Smart software solutions: The most intelligent investment you can make for your business

Software is an essential success factor for the operation of your system and the overall success of your business. Therefore it is important that the software solutions be tailored to your business and your requirements. This is where our smart software solutions come in: From consulting to a comprehensive software portfolio including analytical tools and on-going optimization, we offer one-stop solutions.



Consulting
vision
to
design

How does your company really tick? What is driving you? Which business cases do you want to map?

What do your strategies look like for the coming years? These are just some of the questions we deal with during the consulting phase. Here, listening and understanding are of first importance to us. Using intelligent methods, together we form a picture of your future solution and the effects it will have on your supply chain. That's how a common vision shapes the design for your software processes, and from that, piece by piece, the entire system arises.



Software
digital
to
life

The central intelligence lies in the software, which provides the performance and success of a logistics system. Regardless of whether warehouse management system or IT-run equipment like the Pick-it-Easy Robot, how software and artificial intelligence are used makes all the difference. With our complete software portfolio from a single source, we create sustainable investment security. With software solutions such as KiSoft, SAP® EWM by KNAPP and redPILOT, we breathe life into logistics, providing the intelligence needed for optimal system operation.



Service
gateway
to
tomorrow

Optimal system operation in every phase of the life cycle of a logistical system – this is the mission of our Customer Service. From the warm-up in the startup phase to run – optimal operation during daily business – on to boost, the on-going system optimization: The right service is always there when you need it. In addition to our traditional services, smart analysis tools such as KiSoft Analytics help to understand what's going on in the system to make the right decisions at the right time, especially when it comes to optimizing the system.

Interested? We look forward to seeing you at our exhibition stands.

LogiMAT Stuttgart

Neue Messe Stuttgart

March 10–12
KNAPP
Hall 3, Stand B05
KHT
Hall 3, Stand B57

MODEX Atlanta

**Atlanta's Georgia
World Congress Center**

March 9–12
KNAPP
Stand 5406 and 7019

Challenge accepted

Innovators. Progressive thinkers. Shapers of the future.

In this issue of our customer magazine, we're going to highlight the character traits that define and motivate us in our day-to-day work. We develop innovative technologies, we think outside the box, we create trends – to make a long story short, we shape the future of logistics. But how do we do that? We collaborate closely with our customers, right from the start. We approach them as equals and immerse ourselves in their business reality. Only by knowing our customers, by truly understanding their requirements and business goals, can we master challenges together and achieve long-term success.



CONTENTS

Understanding our customers is crucial. Only then can we develop the right solutions, meet expectations and help in refining the individual profile. With this approach, we can master any challenge our customers present us with.

Mario Rauch, Director of Digital Business Models, KNAPP AG

No challenge is too great if we work together as equals

As we create the future together, it's no wonder that there are challenges. In the logistics market, these challenges are becoming ever more complex. The basic principles of logistics haven't changed – the right goods at the right time in the right place. The requirements, however, are more stringent than ever. The idea is to strive for excellence in quality and performance, while keeping costs low, making optimal use of available space, and working with limited resources. New business areas, shaped by e-commerce and omnichannel fulfilment, are also a huge topic for our customers.

From initial design to finished concept

We are progressive thinkers, we are shapers of the future – no challenge is too complex for us to tackle. Just as Henry Ford did, we also believe that *"if you always do what you've always done, you'll always get what you've always got"*. We grow with every challenge, we keep improving, and we keep boosting our know-how.

How does this positive attitude shape our work on a project? And how does it contribute to collaborative success? Mario Rauch, Director of Digital Business Models, KNAPP AG, explains:

"The concepts of logistics processes and procedures are especially vague in the initial phase of a project. That's why we ask questions. We take the time to listen, find common ground and get to know the customer and their business, identifying what makes them so special. The goal is to interpret the requirements correctly, make them transparent and then create a tailor-made system solution that provides the customer with the ideal support for their business, while also leaving them with room for individuality and future growth. We accompany our customers on the journey from the initial designs to the finished concept that forms the foundation of the real solution – and this has visible results."

Asking the right questions to achieve long-term success

Our goal is to translate the individuality and special traits of each customer into efficient logistics processes. How can we achieve this goal?

Mario Rauch: Mutual trust is what makes projects successful at the end of the day. Therefore, it is crucial to forge a stable interpersonal relationship right from the start. In our experience, this can best be achieved with workshops. We sit down together, ask a lot of questions, and listen carefully. It's vital for us to understand the customer's business values, to figure out their key business relations, and how we can best employ our logistics solutions to help optimize these connections. This frank way of working together fosters a close relationship and all-important trust. In short, it provides the very ingredients for successful projects.

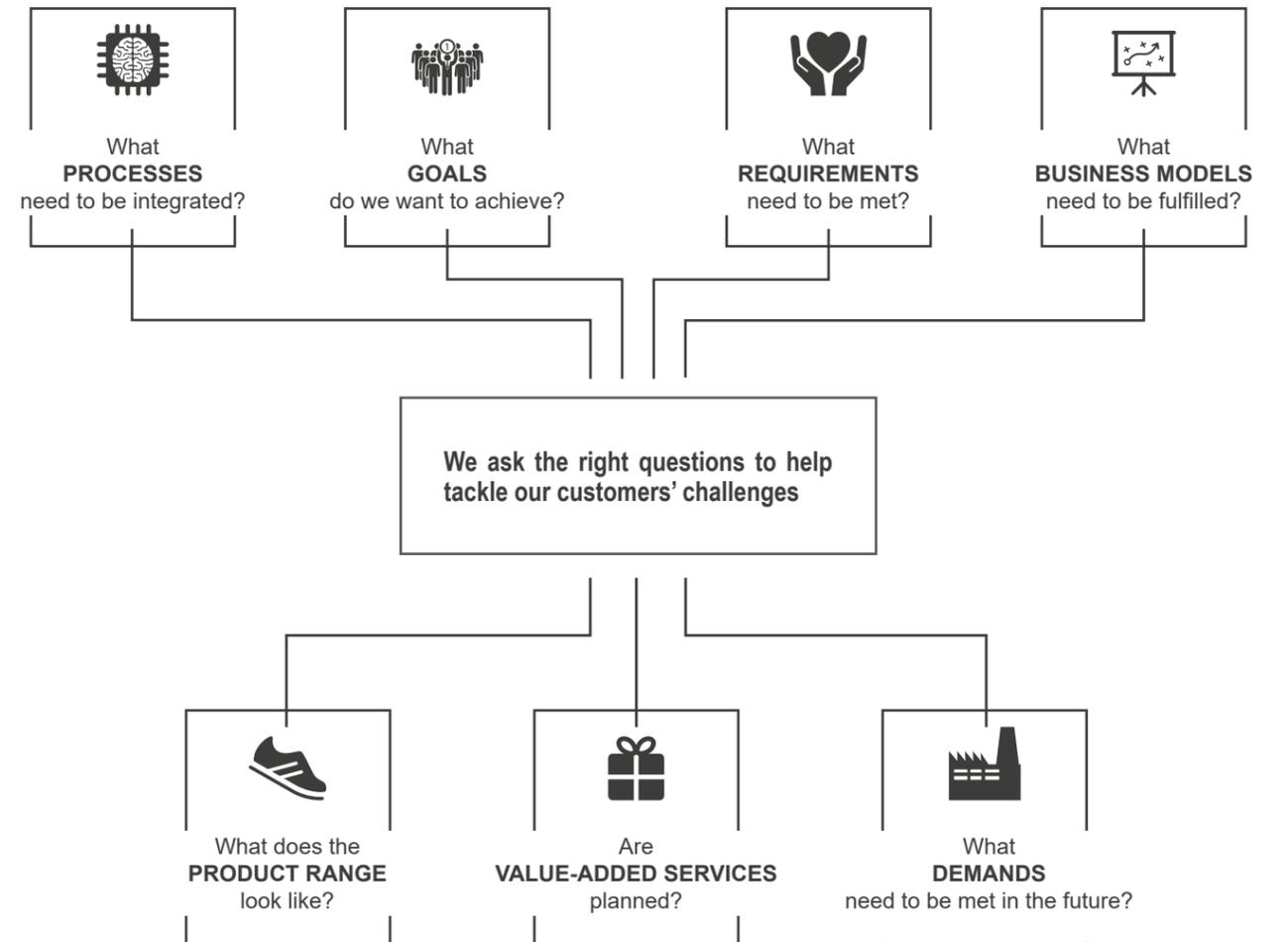
What are the advantages of this approach?

Mario Rauch: In my view, we are creating the basic foundation for the successful implementation of the entire project with this approach, and more importantly, for our customers' long-term success. With our methods, we and the customer both know at a very early stage what the logistics solution will

look like and how it will work. This significantly reduces the investment risk. I am also very proud that through our work together with our customers, we have already celebrated many terrific successes.

What, in your opinion, is so special about this approach?

Mario Rauch: The way we address our customers is both logical and courageous. In this world steeped in technology, talking solely on a technical level is easy. Data, facts and figures are ever-present and tend to dominate conversations. But this unbalanced approach is not without risk; the customer could apply facts and figures to their reality on their own, without our input. They need to recognize the benefits and consider whether the investment will pay off. That is just what we have changed with our approach, we act as consultants right from the start. Figuratively speaking, we start by building a bridge to our customers, and then use this bridge to deliver our suggestions, our concepts and our innovations. Today's world is changing rapidly, and so are business models. We therefore offer flexible, scalable solutions than can easily be adapted to diverse challenges. After all, we want our customers to make the most of their investment.



Omni-channel: The future of Food Retail

KNAPP provides solutions for food retailers with an omni-channel strategy that combines the best of two worlds: All logistics processes for both end customers and store deliveries are handled in a single central warehouse.

In today's digital world, consumers' shopping preferences are changing and, consequently, the expectations placed on food retailers. Young people in particular are purchasing consumer goods online and this tendency is on the rise. This development, however, will not replace the traditional shopping experience, which is sure to remain part of our lives.

Food retailers respond to this change by operating various sales channels. In this way, they can continue to offer great service to their end customers while also meeting the demands of omni-channel business. What does this mean for logistics processes?



The changing world of logistics

When customers place orders online, small quantities and small pack units are common. The orders are either directly delivered to the customers' homes or to a store where they can pick them up.

Stores, however, still require large quantities, which is why large pack units and standardized handling units also need to be picked. These goods are then delivered to the stores.

The logistics handling of small quantities is completely different from that of standardized large handling units and, up until now, has taken place in separate distribution centres. KNAPP offers a new concept that combines the best of both worlds and results in efficient logistics processes.

Omni-channel: Everything from a single warehouse

KNAPP's omni-channel solution allows all logistics processes to be handled in a single warehouse covering e-commerce, brick-and-mortar food retail as well as a combination of both.

Thanks to this strategy, all sales channels can be operated from one and the same distribution centre. In this way, food retailers and producers can respond efficiently to the online trend, while their conventional sales channels through stores remain in place. The digital and traditional businesses are connected in the best possible way, and the solutions are tailored to the customers' requests and their various distribution channels.

A distribution centre handling small quantities where single items as well as standardized large handling units are picked comprises the following core components:

Core element: OSR Shuttle™ Evo

The automatic storage system connects all warehouse areas harmoniously. It provides space for a wide range of articles including standardized large handling units and small quantities. Only one storage system is necessary for the omni-channel solution as it can store the entire article range. Thanks to this solution, food retailers not only save space and costs, but also optimally use the existing synergies. The shuttle system offers high performance, flexibly accesses every article in the system and handles sensitive food with care. What's more, the system ensures efficient and space-saving storage, picking, temporary storage and sequencing of the goods. The OSR Shuttle™ Evo also supplies both the work stations and the dispatch area with goods just-in-time.

Fully-automatic picking of large handling units

RUNPICK, the fully-automatic picking and palletizing system for standardized large handling units, is another core component used for the omni-channel solution. The system efficiently processes fast, medium and slow-moving articles from the fresh and shelf-stable range. Covering a wide variety of articles, RUNPICK forms mixed pallets fully automatically, making it perfect for supplying stores. The entire packing process is controlled by KiSoft Pack Master. It is a special software that calculates the ideal retrieval sequence, determines the stacking pattern and specifies the movements for the stacking machines or robots.

Fully-automatic robotic picking

When it comes to fully-automatic picking of single items, KNAPP's Pick-it-Easy Robot takes on the task. Thanks to its unique technology, the robot is able to reliably process a variety of articles in the food retail sector. The grippers are designed specifically to handling consumer goods and are continually being refined. The robot works by picking the articles directly into the shopping bag. Smart software solutions control the robot, detecting possible grip surfaces and rectifying any errors. Machine learning algorithms continually improve the system. Goods-to-person work stations form the interface between humans and machines.



Advantages

- All logistics processes are handled in a single warehouse
- One solution for all sales channels, for delivering goods to stores as well as to end customers
- Picking single items and small pack units as well as standardized large handling units in a single warehouse
- Reduction of costs and saving space: The entire article range is stored in one distribution centre
- Use of synergies: Technologies are used for various scopes of application – for processing single items as well as large handling units

Multifunctional, ergonomic work station design

The Pick-it-Easy work stations are tailored to the needs of each customer. They reduce heavy and monotonous tasks while simultaneously optimizing order processing. Thanks to the ideal communication between humans and machines, they increase the quality of service and delivery. Depending on the customer requests and degree of automation, small quantities can be picked directly into shopping bags in the Pick-it-Easy work stations, and pallets or roll containers can be arranged manually according to store.

KiSoft: Comprehensive logistics software package

All the core components of the omni-channel solutions are fully integrated in KNAPP's software landscape, covering all logistics processes. The software functions cover everything from the control system to a fully-integrated Warehouse Management System (WMS). KNAPP has also incorporated the special requirements of the food retail sector such as date mark management and lot tracking, and manages diverse order structures and packaging hierarchies in its systems to ensure that all these issues are catered to in the best way possible.



Parfums Christian Dior

The latest designer automation

Parfums Christian Dior belongs to the LVMH group and sells exclusive scents and cosmetics all over the world. The production site in Saint-Jean-de-Braye in France is the main production location of Parfums Christian Dior. Brand-name products such as Christian

Dior, Benefit and Makeup Forever are also distributed worldwide from this location. Since autumn 2018, all orders are handled by an ultra-modern automation solution. Take a tour with us through the omni-channel warehouse of Parfums Christian Dior.

Parfums Christian Dior has been using automation for their production in Saint-Jean-de-Braye for a while. The company wanted to support the growth of its business by optimizing the processes in the distribution using automation.

The following processes and tasks were the heart of this project:



Omni-channel fulfilment and next-day delivery: Fast delivery to regional warehouses, points of sale and e-commerce orders through dior.com



Handling full cases and single items; handling different carton sizes; automatic labelling



Storing orders temporarily and creating perfect sequences for palletizing



High storage density and direct storage of full cases



Performance and zero-error strategy: 64,000 order lines/day, 14,600 full cases/day



Depalletizing and palletizing goods and orders automatically; assembling mixed pallets



Employees enjoy optimum ergonomics: Reduction in walking and heavy lifting



Working hours: 5 day operation; night shift cancelled; maximum 2-shift operation during times of peak load



Capacity for growth: expected stock growth of about 8 percent per year



Limited space and integration in existing system. Goal – best possible performance in a limited space

Intelligent automation solution for special requirements

Basis for error-free processes: Capture master data in goods-in

Unmixed and mixed pallets containing full cases arrive in the goods-in area from the production area located right next door. Here, 2 robots depalletize the cartons fully automatically. Intelligent image recognition technology captures the weight and dimensions of each carton during depalletizing and transmits this data to the warehouse management system. This lays the groundwork for error-free processes starting in the goods-in area.

Keeping an eye on the entire range: Temporary and long-term storage in a single system

At the heart of the warehouse is the OSR Shuttle™ automatic storage system. It holds both full cases and open cartons for single item picking. The system currently comprises 7 rack line systems with 38,190 storage locations and can be expanded by 3 rack line systems and 16,416 storage locations in the future. The software selects the perfect spot in the rack line system for each carton or tray. This ensures that the system always knows where each article is located for immediate retrieval. The OSR Shuttle™ doesn't just store the goods, it also buffers orders temporarily: As soon as all the goods for an order are available, they are automatically retrieved from the rack line system and made ready for dispatch. This separates order processing from dispatch allowing resources to be used more efficiently.



Ergonomics, performance and efficiency thanks to the goods-to-person principle

There are 8 ergonomically designed goods-to-person work stations from the Pick-it-Easy series for efficient manual single item picking. Every article stored in the OSR Shuttle™ can be accessed from every work station ensuring an even workload distribution. The work stations were designed for the special requirements of Parfums Christian Dior and are well-suited for their small, lightweight cosmetic articles.

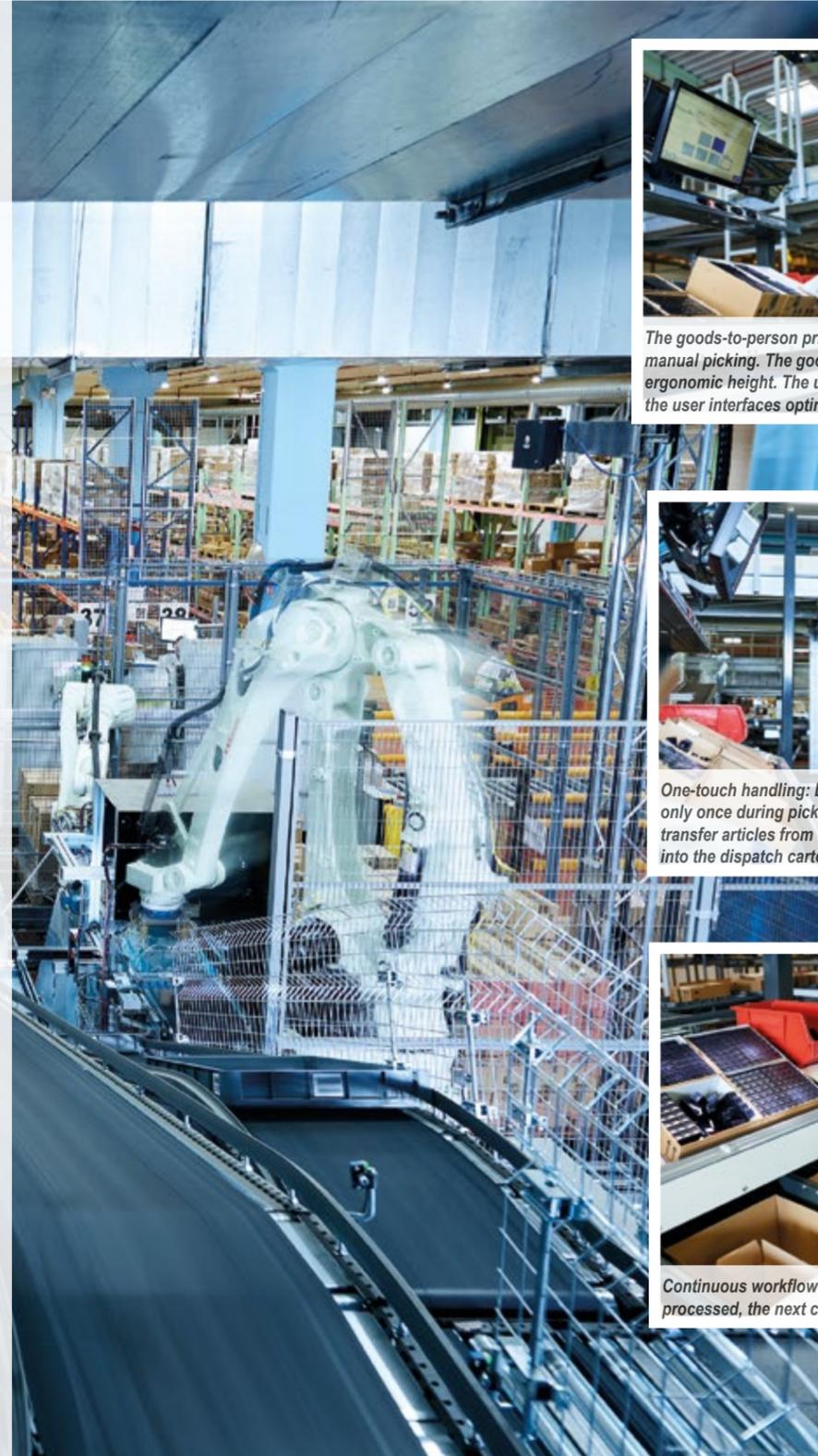
Dispatch preparation: Automatic labelling and complete sequences

Among the central requirements of Parfums Christian Dior were automatic labelling and precise sequencing of the outgoing deliveries. The cartons are retrieved from the automatic storage system OSR Shuttle™, where they are labelled and put in a perfect sequence.

Playing Tetris: Palletizing robots raise efficiency in dispatch

In the dispatch area, 3 palletizing robots handle most of the orders. This has markedly improved dispatch efficiency. The robot truly takes the load off the employees working in the dispatch area. Just a small portion of goods must be manually palletized.

KiSoft Pack Master, an intelligent software for pack formation calculation, provides the much needed help for optimal palletizing. The software calculates the ideal packing arrangement for each pallet. Packing requirements such as stack heavy articles before light ones can be fulfilled automatically. The completed pallets are then wrapped in film and sent on their way to their final destination.



The goods-to-person principle optimizes manual picking. The goods are presented at an ergonomic height. The uncluttered design of the user interfaces optimize quality.



One-touch handling: Each article is handled only once during picking. The employees transfer articles from the source carton directly into the dispatch cartons.



Continuous workflow: When an order is fully processed, the next carton is provided.

Watch this video for a closer look into the omni-channel warehouse of Parfums Christian Dior.



Integrating all the new automation technologies into our existing warehouse with its space constraints – and during on-going operation – was a formidable challenge. Close cooperation and transparent communication throughout the project allowed the teams to master this challenge successfully.



For me, one of the major successes in this project was how the manual picking procedure was optimized. Our employees now work hand-in-hand with ultramodern automation technology. All the work processes are ergonomic, and software guidance reduces errors to a minimum.

Olivier Sorb
Logistics Manager
for Europe, the Middle East and Africa (EMEA)



When designing omni-channel solutions, it is crucial to keep in mind that the different flows of goods must not affect each other. At Parfums Christian Dior, there are two flows of goods – one for full cases and one for single-item picking. The goal was to transform the complex requirements of each into a unique, simple and efficient solution.

Brice Gaujard, Director Sales KNAPP France

Genuinely clever!

How autonomous mobile robots provide everyday help in the warehouse

From Black Friday returns handling, micro-fulfilment in food retail to production networks: How can these logistical challenges be successfully fulfilled economically, safely, simply and intelligently? For example, by combining a central shuttle system with autonomous mobile robots (AMR). This intelligent system solution is what we call the OSR Shuttle™ Evo+. Let's take a look at four everyday applications in production and distribution.



1.

Integrating temporary work stations in the automated flow of goods

During the stressful peak season, get the best performance out of temporary manual work stations. The Open Shuttles supply the work stations with goods from the OSR Shuttle™ Evo central storage system.

Advantages:

- * Complete access to stock in the central storage system
- * Complete overview of stock
- * Automatic just-in-time supply
- * Support for value-added services and kitting processes such as gift boxes, catalogue insertion, etc.



2.

Support for efficient returns handling

Processing returns is both time-consuming and expensive. The intelligent Open Shuttles support returns management: For example, they can bring returns packages from goods-in to the returns work station, ensuring a continuous workflow. They can transport the checked and re-packed goods to the central storage system or to a dynamic pocket buffer.



3.

Integrated and digitalized processes in production

Production companies today face major challenges: The degree of customization for manufactured products is ever-increasing, while processes must still be economical. Therefore, production cells and production processes have to be flexibly networked. The OSR Shuttle™ Evo system solution is ideally suited to take on these challenges and more, offering many advantages:

- * Central storage: Raw materials, consumable goods, semi-finished and finished products are all stored centrally in the OSR Shuttle™ Evo for on-call and just-in-time provision.
- * Flexibly networked: Autonomous mobile robots connect production cells and work steps with each other.
- * Dynamic and scalable: Changes in layout, the integration of new machines and changes to the manufacturing process are possible at any time. The Open Shuttles need no guiding lines.

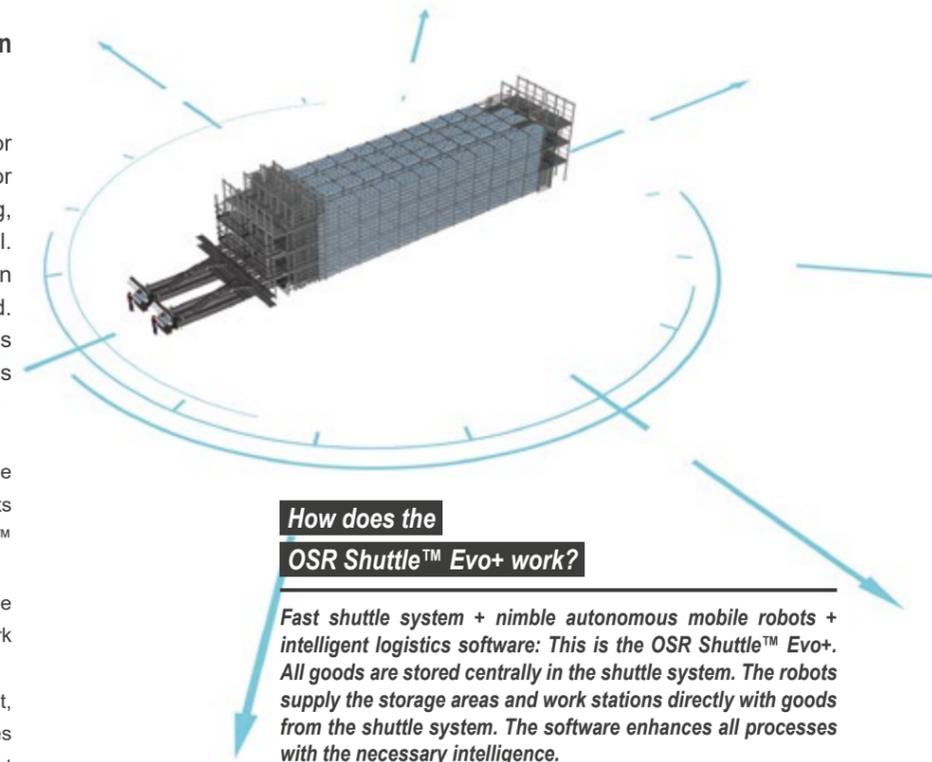


4.

Micro-fulfilment for online food retail

Micro-fulfilment for online food retail is a trend that more and more food retailers are banking on. Online orders are processed in an automated mini-store, which is integrated in a supermarket. Just 30 minutes later, the orders are ready to be picked up. The combination of the OSR Shuttle™ Evo storage system and Open Shuttles also plays a central role in a micro-fulfilment centre.

- * The groceries are stored in the OSR Shuttle™ Evo and are picked at ergonomic goods-to-person work stations.
- * The Open Shuttles collect the completed orders and transport them to buffer conveyors. Each customer order is assigned to a buffer conveyor. This ensures that the customers receive the right items.



redPILOT teamAPP

The decisive advantage

"Change is the only constant in life", Heraclitus said. How right he was! Nothing demonstrates this better today than digitalization and artificial intelligence. However, peoples' attitudes towards work are also changing rapidly. Topping the list for generations X, Y and Z are flexibility and autonomy. These changes bring both challenges and opportunities. The opportunities, however, are open only to those who are able to pair new technologies and requirements with human skills to profit both businesses and employees equally.



Competing for the best

Finding the right employees, recruiting and retaining them are major challenges for today's businesses. Logistics centres naturally gravitate to strategic locations, which means there often are several warehouses in a row. The wages are similar, as are the technological standards. Switching jobs is easy in such an environment, leaving employers with hefty bills for repeated recruitment and training. Understandably, there is intense competition for the best employees.

Winning with flexibility

A bit more money on pay day is no longer enough of an incentive. When a skilled worker has a choice, they will choose the employer that offers the best conditions, the most flexible working hours, the best integration and the one that recognizes and values their skills. They also expect companies to provide digital tools on a level with the ones they use in their free time. The teamAPP by redPILOT offers just that.

Past and present

Back in the day, work was organized in rigid 8-hour shifts, but today's workers can plan their workdays flexibly. The redPILOT app plans the schedule, aiming for cost effectiveness, taking required quantities, employee availability and skill, and customer-specific rules into account. Let's have a look at how this works.

Today, Mr John Smith' shift starts at 2 p.m.

Old procedure:

He arrives at his workplace and checks his schedule for the coming week. The warehouse manager, Ms Doris Leader, drew up this schedule last week and posted it on the noticeboard.

New procedure:

On the bus to work, John Smith checks his schedule using the teamAPP. Doris Leader drew up the schedule using the redPILOT Operational Excellence PLANNER and posted it in the app with a simple click. John Smith can only see his own schedule.

Next week, John Smith would like to work 3 afternoons and 2 mornings.

Old procedure:

John Smith talks to Doris Leader about his plans. She then has to go over the entire schedule, find a substitute and re-schedule. This takes time and effort.

New procedure:

John Smith registers his availability directly in the teamAPP. Automatic scheduling takes this into account. Doris Leader can verify the schedule before putting it online.

John Smith was given a ticket to a Champions League game and needs a last-minute change to his shift.

Old procedure:

John Smith asks Doris Leader to change his shift. She is not exactly happy about this because now she has to find a substitute with the same skill set who is willing to swap at short notice. It takes a while to sort this out.

New procedure:

John Smith applies for the shift change in the teamAPP. All available employees with the same skill set receive a message in their app. Michael Mayer is the first to accept. As this change influences neither costs nor performance, Doris Leader doesn't even need to be involved.

Advantage

It's a new world with teamAPP – a more flexible, more autonomous one. The app seamlessly integrates and maps employers' requirements and employees' wishes. As a nice bonus, it's a huge time-saver, especially for managers.

Focus on the employee, with teamAPP.

Functions

- * Accessing the schedule
- * Registering availability and absences (holiday, sick leave)
- * Requesting shift changes
- * Interface to existing payroll or T&A systems

Advantages

- * Defined workflow for managing absences (holiday, sick leave, training)
- * Employees are involved in the planning process from the start: Flexibility and autonomy boost motivation
- * Cost optimization with a demand-oriented planning process, allowing for transparent employee assignment according to skills and availability
- * Automatic job rotation eases the strain on employees
- * Low fluctuation
- * Quick scheduling saves time
- * Data security
- * Currently up and running at Edeka Rhein-Ruhr, Germany

CONTENTS

LogiMAT Stuttgart
Hall 3
Stand B05
and B57

MODEX Atlanta
Stand 5406 and
7019

The new intelligence

making complexity simple

Robots today are not in short supply. That said, what gives our Pick-it-Easy Robot its competitive edge is its intelligence. Whether shiny polybags or fragile bottles, the robot precisely grips and positions a wide range of articles. Artificial intelligence allows the robot to learn to grip new articles. The Pick-it-Easy Robot can therefore process a broad article range and can easily handle a variety of different tasks – twenty-four hours a day.

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