

CASE STUDY

DSV



Efficient Order Fulfillment with Maximal Flexibility





3PL services with the finest KNAPP technologies

DSV organizes supply chain solutions for companies around the globe and knows that top-quality services demand sophisticated resources. As the fastest growing third-party logistics provider in the north of Europe, the company has transformed an existing 60,000 m² (645,835 ft²) warehouse in Venlo in the Netherlands into a modern omnichannel distribution center, which it has been operating for a well-known sporting goods manufacturer since 2021. Fast shipping with next-day delivery and the highest

quality are the focus of the solution. Above all, the automation solution at DSV focuses on handling the considerable daily volume of goods and error-free order fulfilment for the retail, wholesale and e-commerce business of a large sporting goods manufacturer. On an average day, around **10,000 orders and 100,000 items** are shipped across Europe from the warehouse.

Next-day delivery goes without saying. In addition to requiring a reliable system, DSV wanted a high

degree of flexibility, which would compensate well for their B2B and B2C peaks and guarantee an economically sensible capacity utilization throughout the year, all without neglecting the service level. **Sustainability** is also a major concern at DSV. The picking stations are designed with ergonomics in mind, improving the quality of working conditions. Moreover the volumes of shipping cartons are optimized to reduce the carbon footprint.



Sector: Fashion retail

Location: Venlo, the Netherlands

Employees: 75,000 worldwide, 1,000 in Venlo

Revenue: € 20.2 billion total

Business areas: 3PL, transport and logistics warehouser and operator of the warehouse in Venlo for a sporting goods manufacturer (retail, wholesale and online)

Startup: Fall 2022

Warehousing space: 60.000 m² (645,835 ft²)

Storage locations: 257,000

Active SKUs: 70,000

Containers: 241,000

Delivery area: Europe

Orders / hour: 400

Orderlines / hour: 4,443

Items / hour: 10,000

Delivery window: same- and next-day

Technical solution: OSR Shuttle Evo, 16 Pick-it-Easy work stations, carton erector, pick and pack combined with automated, volume-optimizing carton closer



Successes of the automation solution

01

Maximized output

At DSV, efficiency matters. Automating increased output by 300 percent, without adding additional personnel.

02

98 percent system availability

This level of availability requires the highest efficiency, with the system only shutting down for servicing, maintenance or possible malfunction.

03

Rapid outbound delivery

Same- or next-day delivery goes hand in glove with seamless B2B and B2C order fulfillment.

04

Optimized warehouse management

Thanks to the intelligent storage logic in combination with powerful software, an economically sensible capacity utilization is possible. The typical peaks of the fashion sector can then be handled easily.

05

Flexibility for future growth

The current warehouse design includes room for growth accomplished by expanding the shifts. Gaining another 30 percent in capacity is possible by finishing a part of the system that has already been planned.

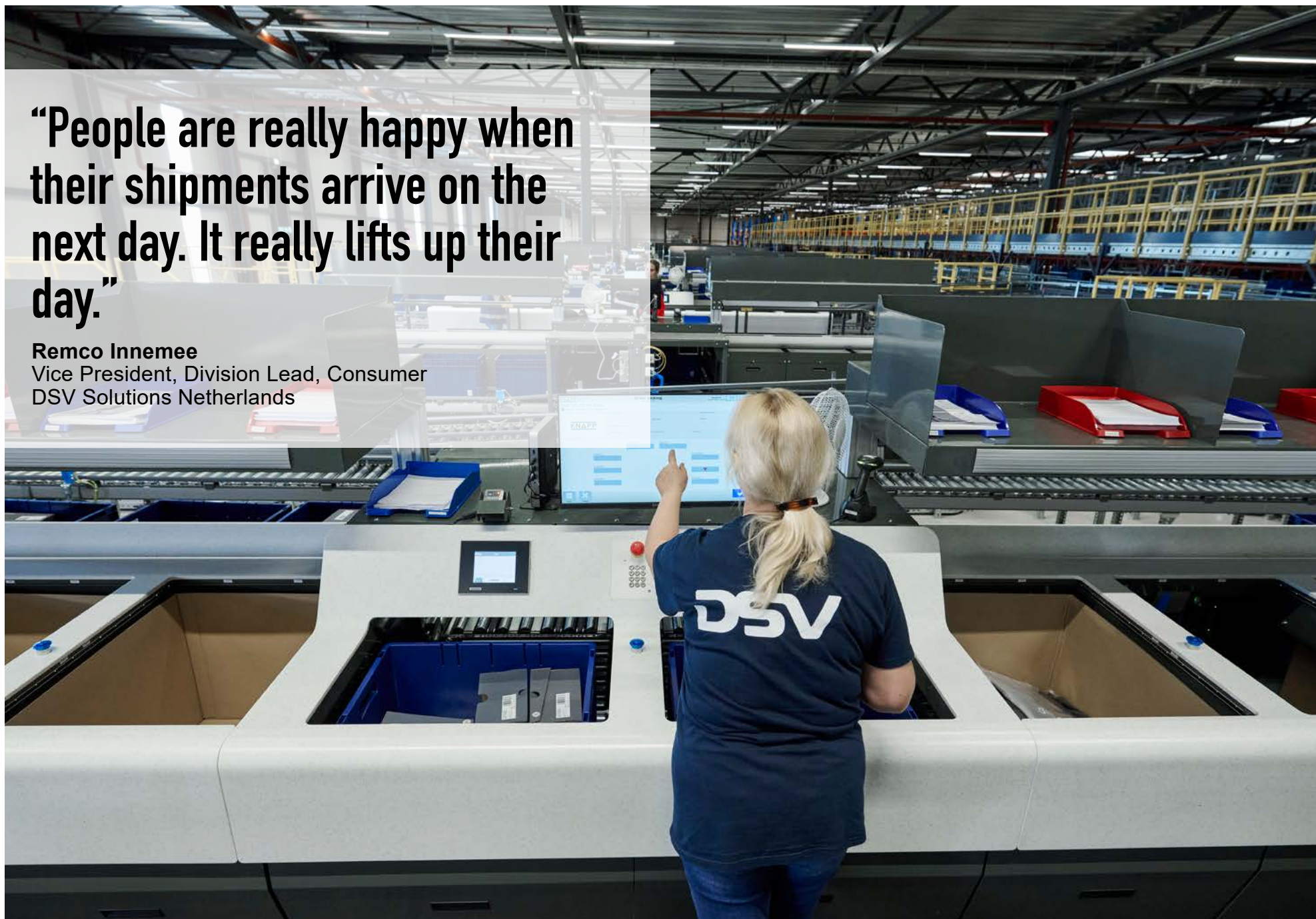
06

More sustainability

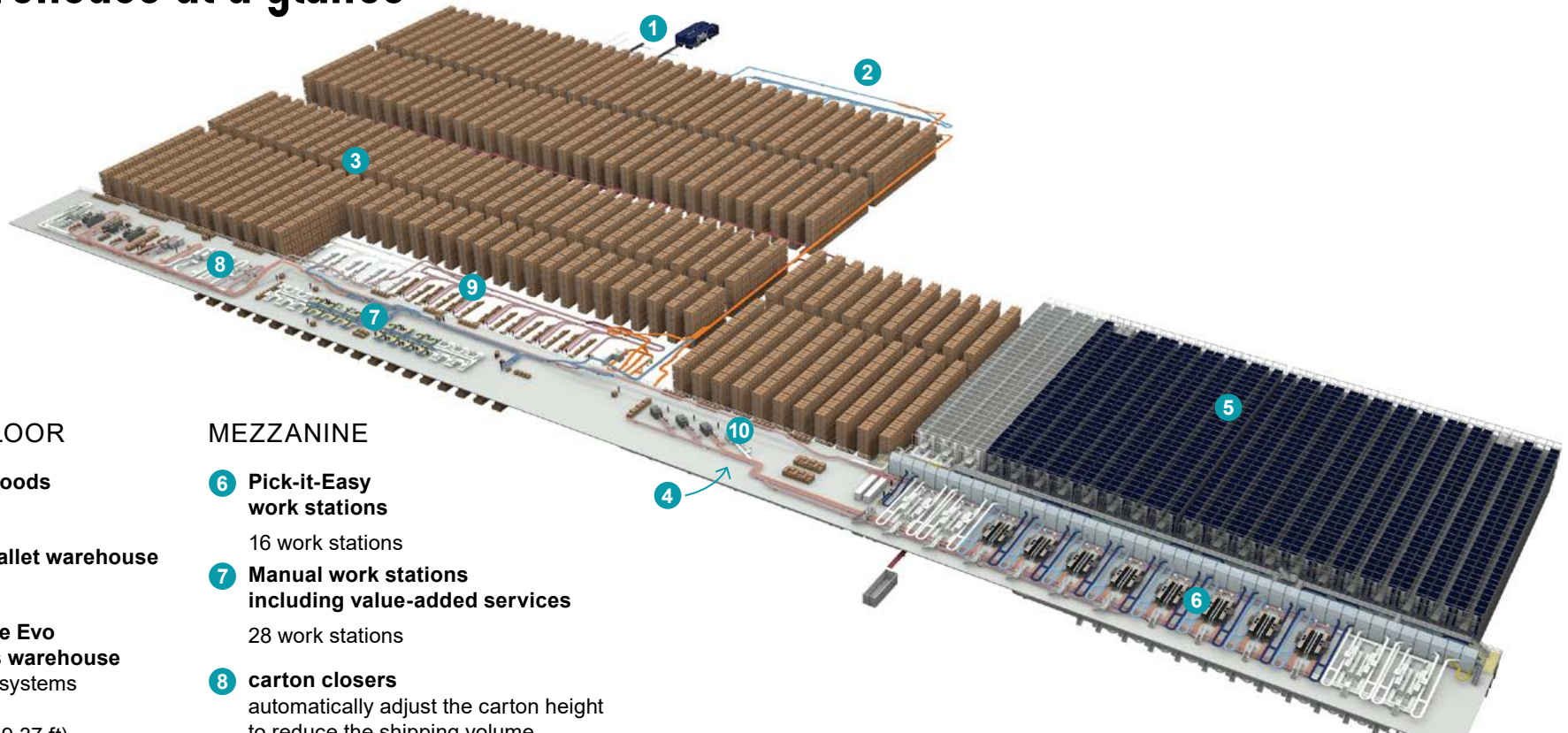
Ergonomic work stations mean that employees work in an optimized working environment. Furthermore, carbon emissions are reduced by reducing the carton volumes, achieved by the automated carton closing system, which adjusts the exact height to the filling volume.

“People are really happy when their shipments arrive on the next day. It really lifts up their day.”

Remco Innemee
Vice President, Division Lead, Consumer
DSV Solutions Netherlands



The warehouse at a glance



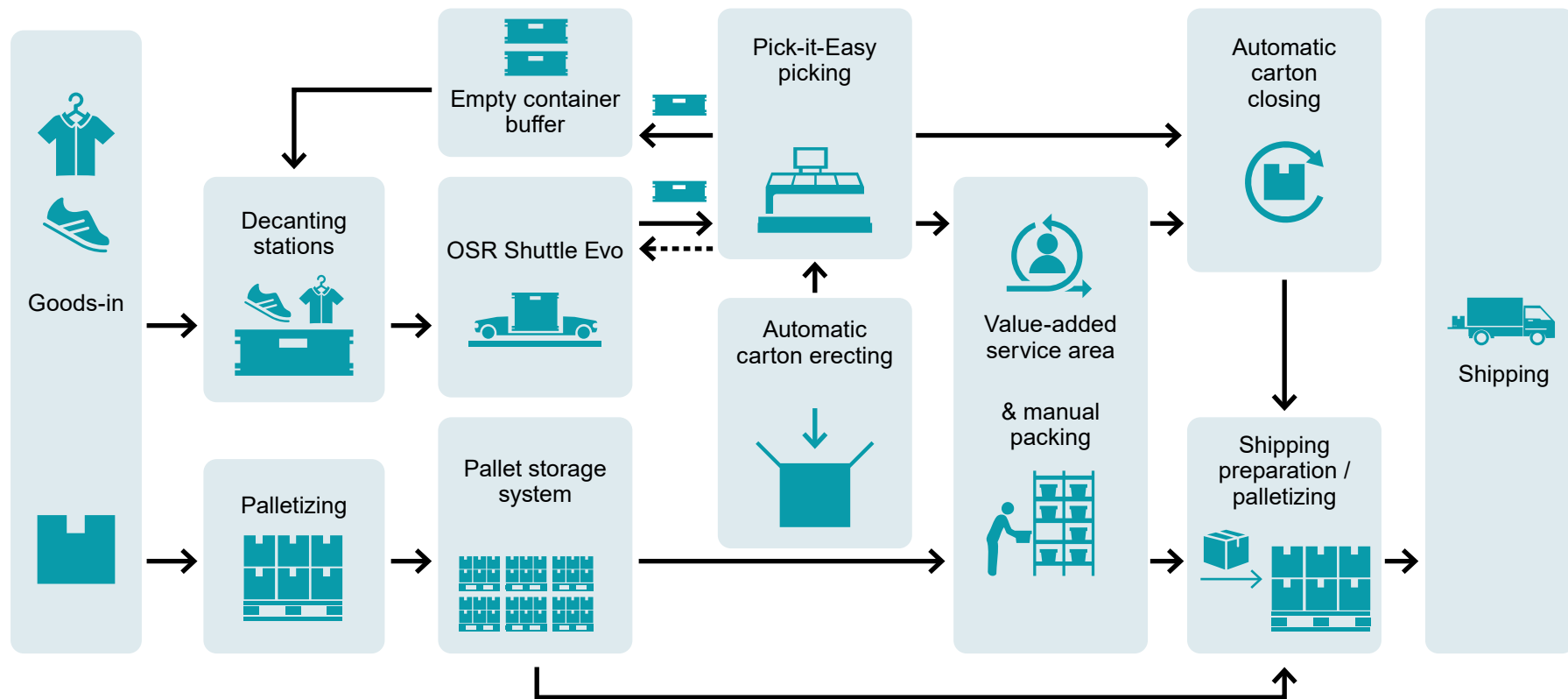
GROUND FLOOR

- 1 Incoming goods**
- 2 Palletizing**
- 3 High-bay pallet warehouse**
- 4 Decanting**
- 5 OSR Shuttle Evo
Small parts warehouse**
19 rack line systems
19 levels
12 m high (39.37 ft)
361 shuttles
257,070 storage locations,
triple-deep storage

MEZZANINE

- 6 Pick-it-Easy
work stations**
16 work stations
- 7 Manual work stations
including value-added services**
28 work stations
- 8 carton closers**
automatically adjust the carton height
to reduce the shipping volume
- 9 Shipping ramps**
2 for B2C orders
12 for B2B orders
- 10 Carton erectors**
2 standard sizes

Material flow



Central warehouse processes

1| Goods-in

The goods enter the warehouse in cartons and are repacked in containers or cartons at the 14 decanting stations. Some of the goods go on pallets to the high bay pallet racks.



2| Storage

The small parts warehouse, the OSR Shuttle Evo, has space for a total of 257,070 containers. These are stored triple deep on the 19 levels of the 31 modules until it's time for shipping. 361 shuttles operate within the automated warehouse, retrieving items on demand, which are then conveyed to the picking stations.



3| Picking

Picking is carried out at one of the goods-to-person work stations of the Pick-it-Easy series, where orders are picked and assembled directly in the shipping carton. In parallel, there are 28 more manual work stations, for value-added services and manual packing.



4| Shipping

Cartons from the Pick-it-Easy work stations are closed in a volume-optimized way and labeled and conveyed with the manually packed cartons to the 14 shipping ramps.



OSR Shuttle Evo: flexibility and storage density to the max

The heart of the system is the OSR Shuttle Evo, a small parts warehouse with space for 241,000 containers. At DSV, plastic containers and cartons are stored multi-deep in the 19 levels of 31 modules.

For picking, there are 16 goods-to-person stations from the Pick-it-Easy series, where picking is carried out directly into shipping cartons, supplied from an automatic carton erector.

Before proceeding to the shipping ramps, the cartons are closed, thereby optimizing the volume, and given a shipping label. This process is completely automated and requires no personnel.



Tailored to suit

The shuttle system is 100 percent tailored to fulfill DSV's needs for performance and flexibility, which has also meant a massive increase in the entire output. The automated logistics solution is also a perfect support for order fulfillment with respect to omnichannel distribution. Capacities are at 4,752 double cycles per hour.

The OSR Shuttle Evo handles the following processes:

- Storage and retrieval of items
- Space-effective, triple-deep storage
- Order assembly and picking
- Order buffering
- Shipping container sequencing

All components interact optimally

A highly automated warehouse is only as good as the software that runs it. At DSV, KiSoft warehouse control system interfaces with DSV's inventory control system, ensuring that all the processes run smoothly, efficiently and without errors. This combination covers the entire flow of goods in real time, managing the stock, all the product master data, the load units and load carriers, and more.

- Material flow control
- Order release
- Order type
- Weighing
- Checks
- Document insertion



Smart tools for efficient warehouse operation

Starting on day one, our priority is to support our customers in whatever challenges they have, to deliver solutions and to make everyday business as simple and plannable as possible. Proactive and reactive measures are essential tools to bolster the short-, medium, and long-term success of the company.

The digital services and types of support we offer have meanwhile grown to about 50 configurable services that can be tailored to individual requirements.

With the Service Desk, DSV has secured round-the-clock access to the experts at KNAPP, who can restore system availability quickly in the event of a malfunction.

DSV uses the IT Services package to keep a close eye on all of the installation's IT, both hardware and software, and to take preventative action. You get not only automatic, proactive care for your IT infrastructure, but may other important features that by helping you take action at the right time, prevent problems from happening in the first place.

For all things maintenance, KiSoft CMMS provides additional digital support. You can intelligently plan maintenance as well as make data-driven decisions about it. This ensures not only greater system availability, but also ultimately reduces costs, because the algorithms optimize the maintenance cycle and minimize system failures. Some of the standard special features of the software include an integrated spare parts management as well as tasks related to work safety.

Last but not least, DSV selected the Resident Service and now enjoys having experts available on site. This outsources technical system operation risk, while the company benefits from many services such as incident management, spare parts management, reporting and even the introduction of system optimizations.



Corporate culture connecting people

Third party logistics providers like DSV possess profound expertise when it comes to organizing supply chain solutions and know firsthand which challenges to expect on a daily basis and how fast the processes and business models sometimes change. In 2019, Remco Innemee, Vice President, Division Lead, Consumer at DSV Solutions in the Netherlands, was looking not only for an outstanding automated warehouse solution for a customer, but also for a partner who could be relied upon 100 percent, who had expertise and experience and could implement a project, and who fit the framework well.

During the entire run of the project, there were many constructive as well as critical discussions focusing on the automation solution for DSV in Venlo. Step by step, we homed in on the project design that would enable DSV to cover all capacities and changes up to the year 2032, just by adapting the system as needed.

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George Thomann, Project Manager at KNAPP, gladly reflects back on the time spent planning, implementing and commissioning the project: “The cooperation with DSV was collegial and professional in every way. Coordinating with us, they knew exactly how the system had to be designed and they were not shy about acquiring more expertise for themselves.”

The design process and implementation were smooth sailing. One reason for this was because the main contract already included all the requirements and necessary changes, so during the implementation phase, almost no modifications were needed. As a 3PL provider, DSV had furthermore clearly defined the scope of delivery to their customer, painting a very clear picture for them in advance.

This successful collaboration may very soon be continued in one or another project with DSV.

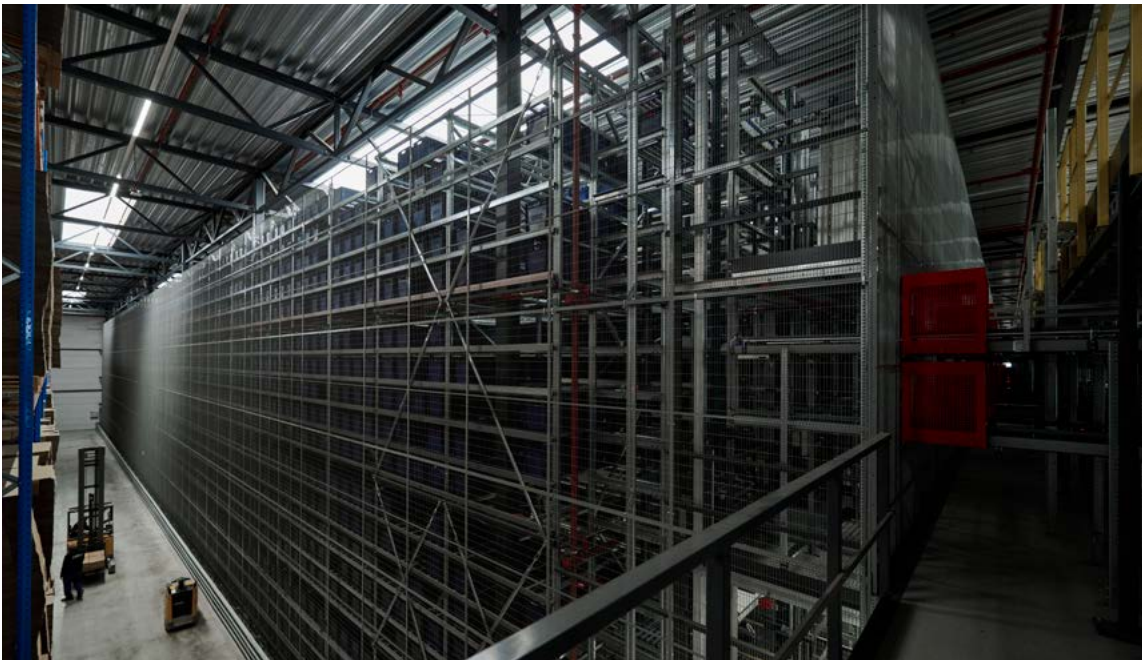


“DSV and KNAPP understood each other brilliantly from the beginning. The two companies complement each other very well with respect to their values and corporate cultures.”

Remco Innemee
Vice President, Division Lead, Consumer
DSV Solutions Netherlands



VOLUME and FLEXIBILITY.
At DSV, these words are magic.





Fashion



Food Retail



Healthcare



Industry



Retail

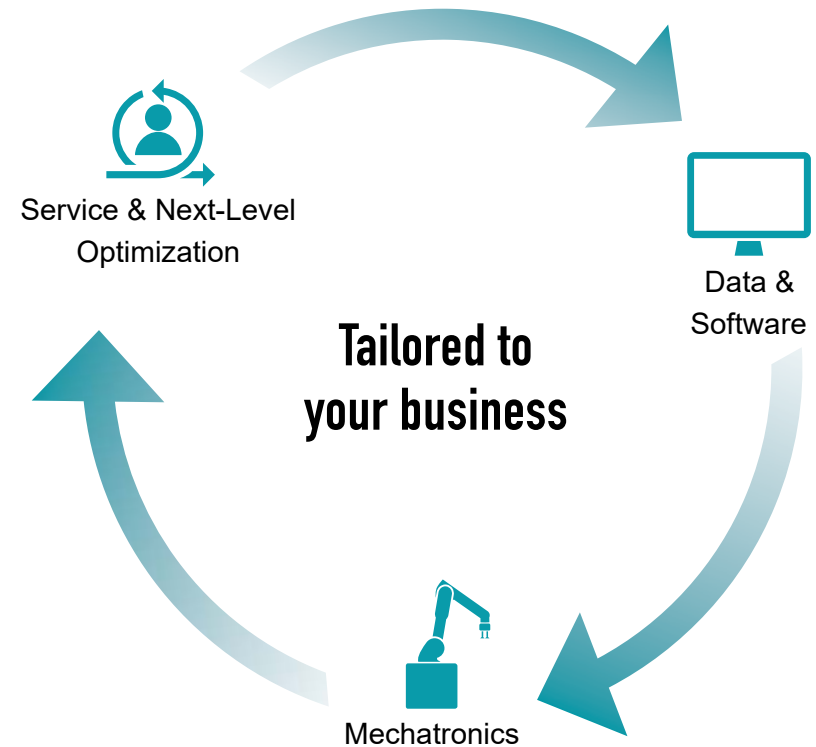


Wholesale

Expand your competitive advantages

We work together with you to design and build a system tailored to suit your logistics requirements, growth targets and investment strategy.

At KNAPP, our systems are not just off the rack. Instead, we take the time needed to learn about your needs, business model and challenges. Whether you want micro or macro, a semi-automatic system to help you get started or a fully automatic distribution center for top performance – we have just the right all-in-one solution for you.



We look forward to
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