



Retail

Ready to ship in 30 minutes

Wehkamp.nl is the biggest online lifestyle shop in the Netherlands and currently serves about 2.7 million regular customers, shipping around 30 million items per year in the Dutch market. The article range consists of more than 430,000 different items from 2,000 brands, divided into various categories e.g.: fashion, shoes, home & living, electronics, garden, baby products and beauty. Founded in 1952, Wehkamp has its roots in the classic catalogue business and was one of the first retailers to adopt an online retail strategy in the 1990s and, in 2008, became a 100% online retailer.

wehkamp.nl

Location	Zwolle the Netherlands
Sector	Retail, e-commerce
Warehouse size	52,000 m ²
In operation since	2015
Expansion	2019
Application	Largest automated DC worldwide, dedicated to online retail only; up to 12,300 picks per hour



Every customer expects that we keep the promise we create in our online shop, which is: order until 11.59 p.m. and get your order the next day. With the high reliability, uptime and throughput of this facility, we make sure that we keep our promise.

Sander Bolmer, Director Supply Chain, Wehkamp

Support future growth

Wehkamp used to fulfill their orders from warehouses in Dedemsvaart and Maurik. In 2012, to accommodate a future growth target of 200 percent by 2020 and the broadening article range, the company decided to build a greenfield built to suit fulfilment center in Zwolle to replace their small goods operation. The new Logistics Service Center (LCS) Zwolle should become the largest distribution center in the world solely dedicated to online retail.

Scalable design

In early 2017, wehkamp.nl decided to expand warehouse capacity due to changes in its business and forecasted growth. The extension included an expansion of the automated shuttle system by three extra rack line systems to provide additional 79,500 storage locations and higher throughput. Along with the increased performance of the shuttle system, four additional goods-to-person work stations were installed. Due to the scalable design of the solution, extensions like this were already considered in the initial design phase. Therefore, most of the extension efforts took place during ongoing operation.



The Pick-it-Easy work stations meet the latest standards of ergonomics and facilitate efficient and error-reduced picking. The ergonomic design together with the high usability of the easyUse interfaces create a state-of-the-art work experience for the operating staff.

Our facility is designed with a goods-to-person principle. When a customer places an order, the order is assigned to one of our 28 Pick-it-Easy work stations. The OSR Shuttle™ automatically delivers the right items to the work stations. In addition, our employees can work on 6 customer orders simultaneously which allows us to pick up to 12,300 items per hour.

Sander Bolmer, Director Supply Chain, Wehkamp



The numbers of the Zwolle site are impressive but there is so much more to it than just numbers. The processes are tailored to fit the fast-paced business of wehkamp.nl and most items only have to be touched once by the employee during order processing.

Rene Wolters, Managing Director KNAPP Benelux

Key to a successful solution

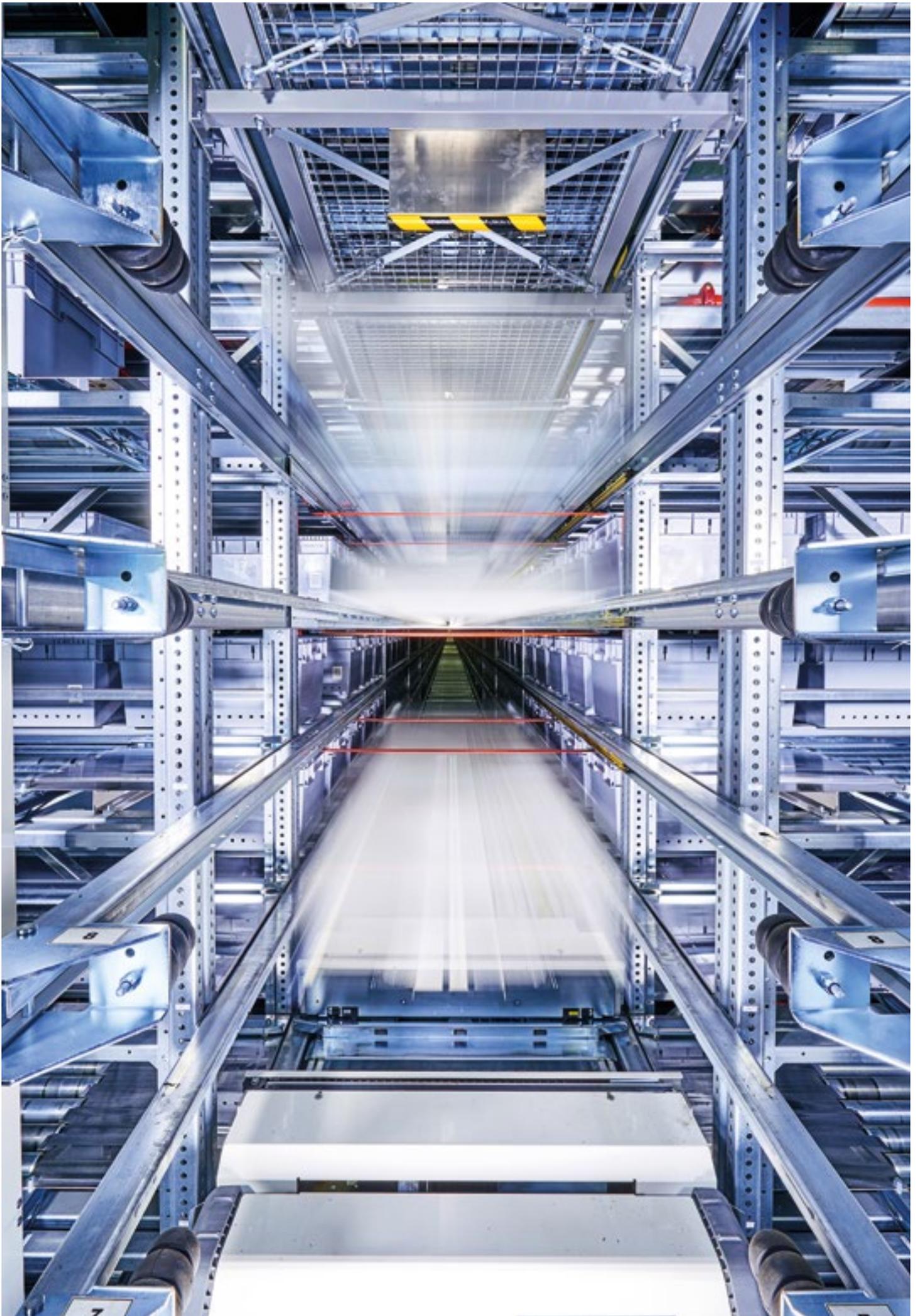
Listen, understand, implement – every design phase of a project starts with this simple principle. KNAPP deals with each customer's demands and requests in detail in order to transform them into tailored intralogistics systems and processes. For Wehkamp, KNAPP designed a solution that supports the fast-paced growth of their business and improves the service to their customers on many levels. Despite the complex requirements of the e-commerce application, the solution is easy to use from an operational perspective, following the KNAPP motto: making complexity simple. The solution employs a sensible level of automation where automatic and manual processes blend. In that way the KNAPP system enables Wehkamp to have customer orders ready for shipment within 30 minutes of order receipt.

Increased sustainability

Automatic packing lines reduce the height of the dispatch carton precisely to the fill level of the item and therefore eliminate the need for filling material. This height reduction secures the items inside the carton and significantly reduces the amount of transported air. Non-fragile items and smaller orders are shipped in plastic bags. Using plastic bags and reduced carton sizes takes up less space in the delivery vehicles, ultimately reducing CO₂ emissions.

Smart one-touch handling

The solution is designed as an all-in solution: all articles – except for bulky and hanging goods – are stored to and retrieved from the automated system OSR Shuttle™. With its double-deep tote storage, the OSR Shuttle™ provides sufficient storage capacity for Wehkamp's large assortment. The total OSR Shuttle™ consists of 21 aisles with 26 levels – 546 shuttles serve a total of 556,000 storage locations. Two cross belt sorters connect the storage area with the picking area. Goods-to-person work stations of KNAPP's Pick-it-Easy series are located on two levels and are supplied with goods from the OSR Shuttle™. Utilizing KNAPP's *all aisles access*, every order can be processed and completed at every work station. This design approach enables Wehkamp to reduce their system complexity and avoid consolidation because every item can be accessed by any pick station.





Processes at Wehkamp

① Inbound

Goods-in

After receiving, goods are repacked into storage containers at 16 height-adjustable work stations. On average, 10 pieces are stored per container. If an article is new and its master data is unknown, the article is measured at one of three measuring devices. By calculating the dimensions of the article, the system ensures optimal storage density in every tote.

Returns

At the returns area, articles are checked for quality and either discarded or re-packed for storage. The returns sortation is done at 18 height adjustable work stations. The handling of returns, including controlling and repacking of the articles, is done at 96 work stations, which are divided by flat-packed goods, shoes and electronics.

② Storage

Storage containers from the decanting and returns areas are automatically stored into the automated storage system OSR Shuttle™. More than 400,000 SKU (stock keeping units) are stored centrally in the OSR Shuttle™ – over 100.000 of them only have one storage location available, however, the OSR Shuttle™ manages to provide the right stock keeping units at the right time at the right work station. The 546 horizontally-moving shuttles, together with a high-speed lift system ensure consistent and reliable throughput and a balanced workload at the goods-to-person work stations.

③ Automatic order start

At the automatic order start, three carton erectors provide the work stations with the necessary cartons – large or small – which are conveyed to the pick buffer. For single item orders, empty totes are transported to the pick buffer and combined with the cartons. Upon order release, the warehouse control system KiSoft decides which transport unit suits the order.

④ High-speed transportation

The high-performance conveyor system Streamline conveys the containers throughout the entire warehouse. Two cross-belt sorters distribute the containers across all the picking work stations with speed and precision.

⑤ Picking

Goods-to-person picking is processed at 28 Pick-it-Easy Health work stations which are served with goods by the OSR Shuttle™. Two cross-belt sorters connect the OSR Shuttle™ and the Pick-it-Easy work stations. For multi-line orders, the appropriate cartons are supplied to the target bay of the picking station. Single item orders are gathered in a so-called super-tote for fast picking and are separated and packed later. This approach generates optimized order lead time while also creating an ideal workload balance across all the picking stations during peak times.



6 Packing

Value-added services

Orders that require additional value-added services are conveyed to a manual packing area where gift wrapping and other services can be processed. 20 work stations are involved in the packing process during peak days.

Cartons

Multi-line cartons are conveyed automatically to one of three automatic carton closing machines. Each of these is suited for a specific carton footprint that wehkamp.nl uses. Before closing, packing lists and flyers are inserted. Next, the carton height is reduced by cutting off excess material. Finally, the carton is lidded, a shipping label is applied and the carton proceeds to the sorting and dispatch area.

Bags

Orders that are suitable for bagging are transported to a separate bagging area. Here, employees place the individual items onto a conveyor which automatically

combines the right product with the right packing list and flyer. Once the allocation of packing list, flyer and item is complete, two bagging machines wrap the item in a bag.

7 Sorting

The parcels are sorted for their different destinations on a total of 140 sortation ramps. Sliding chutes guarantee the gentle handling of the cartons, making sure that the order gets to the customer in the expected quality.

8 Software

KNAPP's software KiSoft controls and optimizes the processes in the warehouse. All processes are monitored in the control center.



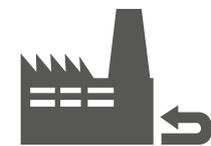
430,000 SKUs



12,300 picks per hour



Next day delivery



Efficient returns handling
up to 40 percent in apparel category



Ergonomic work environment



Reduced CO₂ emission
thanks to smart packing



30 minutes order lead time



Optimized service



Flexibility, performance, quality
and efficiency



Wehkamp and KNAPP share values like innovation: we both have a drive for improvement. There is a constant interplay of being efficient and reliable on the one hand and trying to innovate on the other hand.

Sander Bolmer, Director Supply Chain,
Wehkamp



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