

CASE STUDY

# APOTEK 1

**Maximum Efficiency. Minimum Space Requirements.**  
**This Is Pharma Logistics at Apotek 1.**



system  
video

## The invisible force powering 450 pharmacies serving millions of patients

Apotek 1 is the leading pharmacy chain in Norway and a crucial player in the Norwegian healthcare system. With more than 450 brick-and-mortar pharmacies and a market share of about 50 %, the company reliably supplies the population with medicinal products – online, offline and for nursing homes. The pharmaceutical wholesaler Apotek 1 supplies not only their own network, but also fulfills the statutory obligation to distribute pharmaceuticals safely to all pharmacies in Norway. They also supply nursing homes and process public calls for tenders.

At the heart of the supply chain is the distribution center in Oslo: around 350,000 items are picked here every day for pharmacies, nursing homes and customers ordering online. While the e-commerce business continues to be handled in the existing facility, the new KNAPP extension takes over fully automated order fulfilment for pharmacies and nursing homes. Overall, the center reaches a 77% level of automation – but the KNAPP solution itself operates at 100%, setting a new benchmark. The OSR Shuttle, Pick-it-Easy work stations, robots, the Central Belt System (CBS) and the Itemizer integrate

seamlessly, ensuring maximum flexibility and outstanding service quality. Building on this solid foundation, the new expansion realized in close collaboration with KNAPP marks a decisive step into the future. Facilitating faster lead times and optimum stock availability, the expansion safeguards a stable supply, meeting the aging population's growing demand for medicinal products. Apotek 1 is now perfectly equipped to provide safe, reliable and innovative healthcare products – both today and tomorrow.

Location  
**Lørenskog, Norway**

**163**  
DC employees

Business areas  
**OMNICHANNEL LOGISTICS**  
Pharmaceutical wholesale, direct delivery to nursing homes,  
e-commerce

Sector  
**Pharmaceutical wholesaler**

**21,500**  
Total SKUs

**11.316 m<sup>2</sup>**  
Warehousing space

Delivery area:  
**Norway**

Technical solution  
**OSR Shuttle with approximately 70,000 storage locations,  
Central Belt System with A-frame ejec-tors and automatic supply  
from the OSR Shuttle; 2,176 channels, 1,260 SKUs, Pick-it-Easy  
work stations, Pick-it-Easy Robots, Itemizer Check**

**350,000**  
Items / day

**60,000**  
Order lines / day

 **APOTEK 1**



## From a tight squeeze to top performance: The drivers of expansion.

01

### Limited warehouse space and growing order volume

The system expansion created a compact, highly automated warehouse featuring several technologies. This allowed Apotek 1 to increase capacity while assuring efficiency and quality, all in the same limited space.

02

### Picking with higher efficiency and precision

A degree of automation of 100 % was achieved by combining the technologies OSR Shuttle, Pick-it-Easy stations, CBS, Pick-it-Easy Robots and Itemizer, allowing fast lead times and optimum picking precision.

03


### Flexibility for varying customer orders

Smartly interconnected technologies are the key to processing varying order structures efficiently, such as orders coming from Apotek 1's and other pharmacies, nursing homes or online orders from end customers. The system adapts to all these flexibly, while maintaining the same high service quality for all.

04

### A future-proof solution for growing requirements

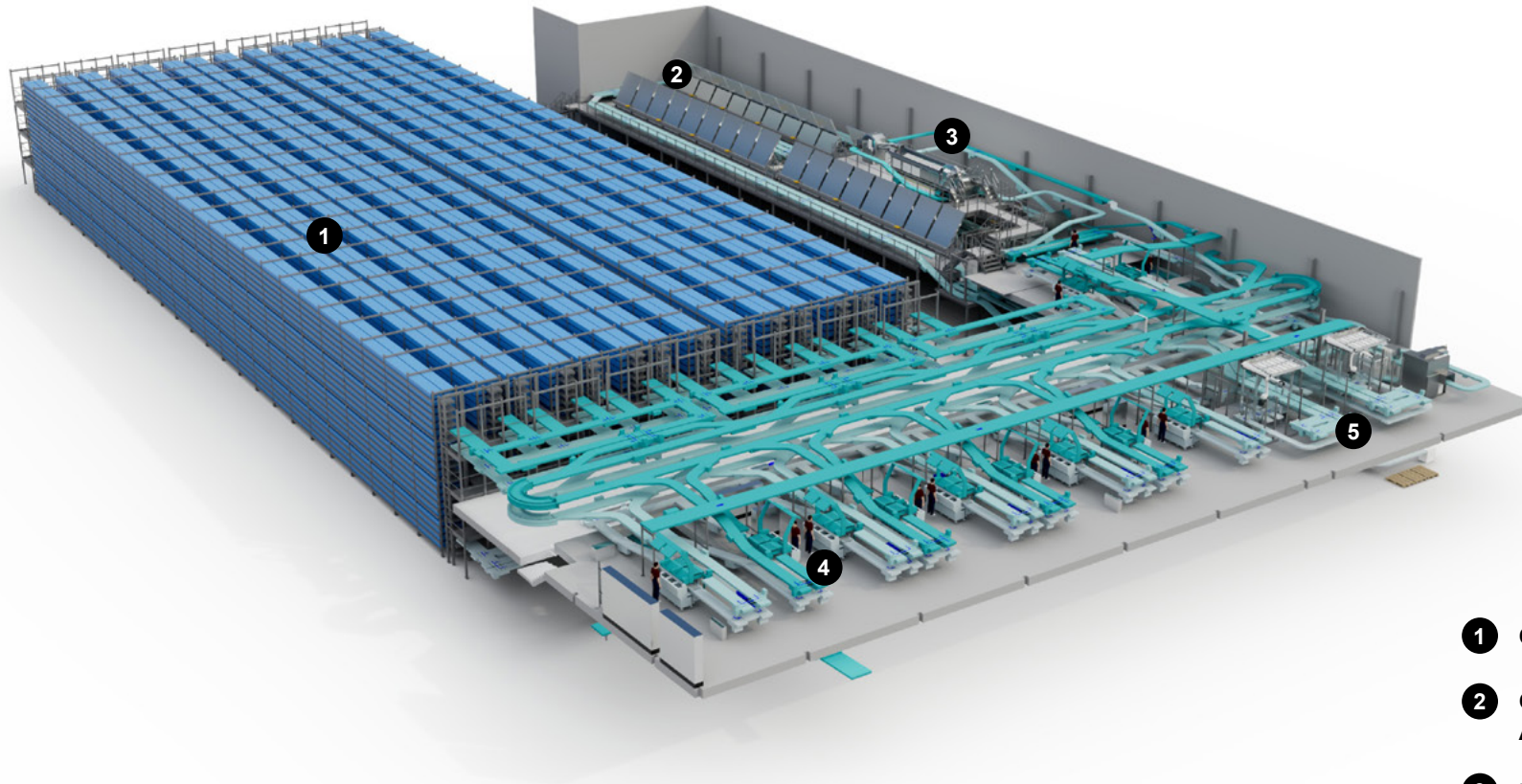
The system is ready for future growth, with two Pick-it-Easy Robots, Pick-it-Easy work stations and A-frames managing 350,000 pieces per day. This reduces the need for manual labor, increases transparency and ensures supply for the long term.

A photograph of three men standing on a metal walkway in a large industrial warehouse. The man on the right, wearing a dark suit jacket over a light blue shirt, is pointing towards the camera. The man in the middle is wearing a tan sweater and has his hands in his pockets. The man on the left is wearing a black short-sleeved shirt and brown pants. The background is filled with blue metal shelving units and industrial equipment.

**“We are especially proud of how the various technology components interact and cooperate, providing a high degree of flexibility.”**

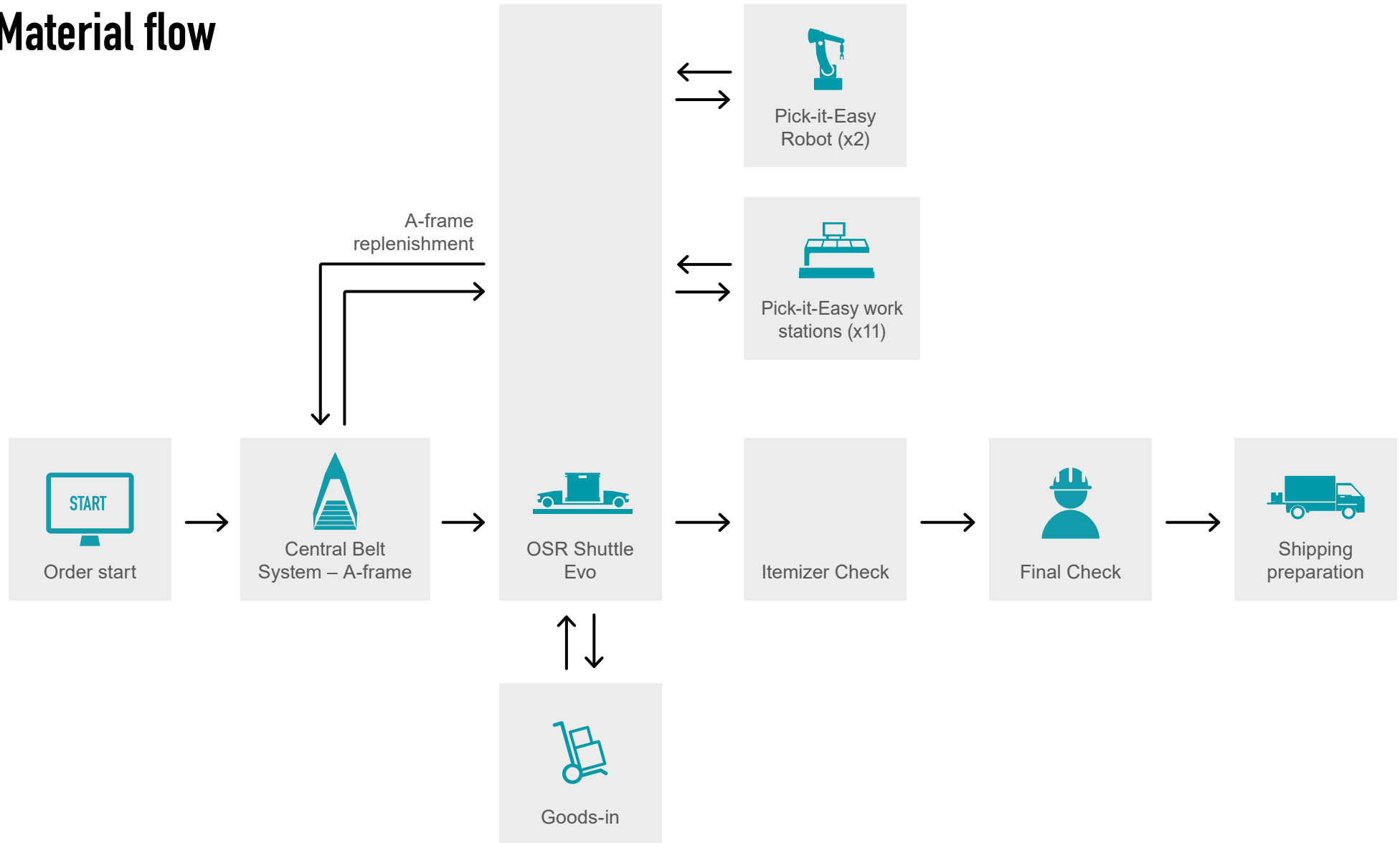
**Morten Solberg**  
Director Logistics and Supply Chain  
Apotek 1

# The system at a glance



- 1** OSR Shuttle Evo
- 2** Central Belt System – A-frame
- 3** Itemizer Check
- 4** Pick-it-Easy work stations
- 5** Pick-it-Easy Robot

# Material flow





## Picking procedure: Automation is the key to success

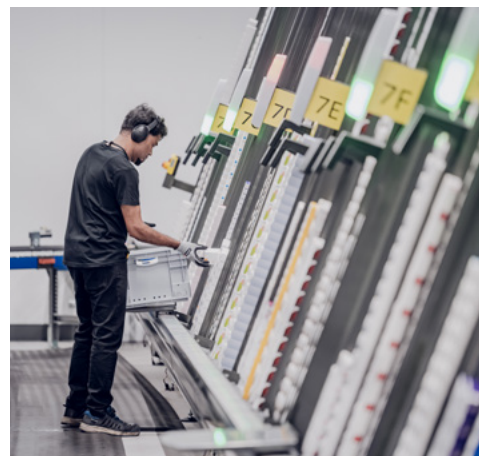
Cutting-edge pharma distribution at Apotek 1 hinges on automation. The key success factor is the all-in shuttle concept, a highly automated storage system that connects all processes end-to-end. At the heart is the OSR Shuttle, which supplies items to all connected picking modules continuously.

The picking procedure is also highly automated, ensuring optimum efficiency and precision: 45 % of items are processed at ergonomic Pick-it-Easy work stations, 30 % by A-frame ejectors in the CBS, 12 % by Pick-it-Easy Ro-bots. The high degree of automation significantly reduces errors, stabilizes operations, and considerably speeds up the entire workflow.



## Central Belt System picking with automated replenishment

The OSR Shuttle supplies items directly – without buffer racks – to two A-frame picking systems boasting a total of 2,176 channels, picking around 3,000 items per hour. This all-in shuttle solution significantly speeds up the refill process, reduces potential errors and ensures smooth material flow, resulting in optimum efficiency and process reliability.



## Picking at the Pick-it-Easy work stations and Pick-it-Easy Robots

The bulk of the picking tasks are processed at 11 Pick-it-Easy work stations and 2 Pick-it-Easy Robots. The robots work around the clock, can handle 60 % of SKUs, grip items of varying shapes and adapt to new kinds of packaging. They are also very popular with their human co-workers. The Pick-it-Easy work stations are ergonomically designed to ensure a comfortable, safe working environment.



## The all-in shuttle solution: Powerfully dynamic storage and picking

The OSR Shuttle is at the core of the Apotek 1 distribution center, the major part of the 100 % degree of automation is thanks to this system. It provides highly dynamic and extremely dense, double-deep storage across 69,664 locations and seven rack line systems, combining optimum accessibility with high flexibility. The independent shuttles facilitate fast item supply for all picking strategies – all from a single system.

The all-in shuttle solution means that all item categories, from prescription to over-the-counter, from parapharmaceuticals to cold storage items, narcotics and customer orders are all processed from one system landscape. This single solution can handle various types of items and comply with all regulatory requirements in pharma logistics, and it ensures that all SKUs are accessible across all warehouse areas.

The system grows with the business, shortens lead times and optimizes processes for time-critical pharma orders. Its compact, modular design boasts top performance on a minimal footprint and supports challenging article ranges. Being scalable, it is ready for anything the future has in store.



CENTRAL ITEM SUPPLY

100 %  
Degree of automation

4,200 order lines / h  
OSR Shuttle

## 1,600 picks per hour: a piece of cake for the Pick-it-Easy Robots

At Apotek 1, two Pick-it-Easy Robots are at work right behind the OSR Shuttle and the Central Belt System. Both robots are supplied with items by the shuttle system and the A-frame ejectors, shouldering single-item picking fully automatically. Picking 1,600 items per hour, they can process a wide range of items, such as cardboard packets, flexible packaging and semi-transparent polybags.

Combining AI-based object recognition, precise grip point determination and several types of gripper, the robots handle varying item ranges reliably. The intelligent placement logic decides on the spot whether to drop the item in a controlled way, or to place it down gently for space-efficient storage in the container. A sensor-based quality check completes the process.

For Apotek 1, this has multiple benefits: picking quality is consistent even with varying items, there are fewer errors, performance is stable around the clock, and process and delivery reliability is improved. On top of that, when robots shoulder monotonous, physically strenuous tasks, it takes the strain off employees.

1,600  
ITEMS / HOUR

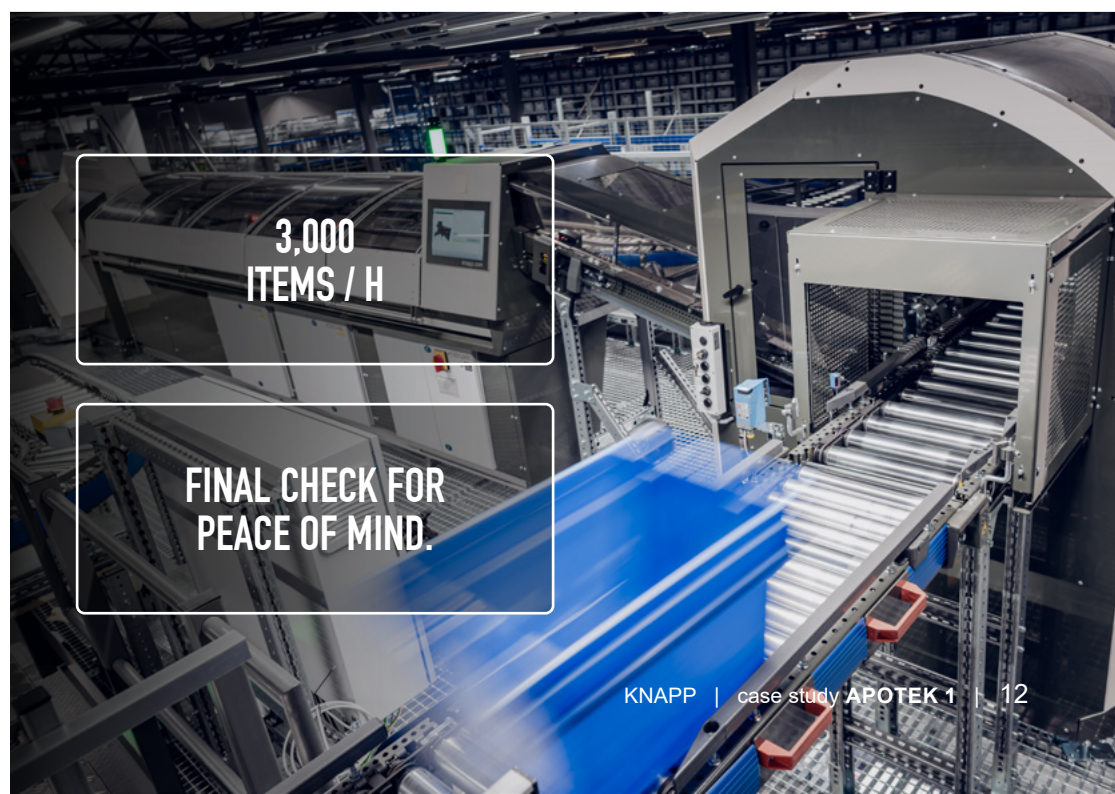
FIRST PICK-IT-EASY ROBOT  
for the PHOENIX Group

CAN GRIP VARIOUS SHAPES  
– up to 500 g (~1 lb)

## Itemizer Check: Seamless checks. No compromise.

The Itemizer Check is a system for separating items that checks barcodes, the weight and dimensions of each item in real time, preventing tracking errors and significantly improving process reliability. Thanks to seamless quality assurance, fewer manual checks are necessary and precision increases.

In the pharmaceutical sector, safety and seamless traceability are top priorities. Apotek 1 implements an end-to-end safety concept, monitoring and documenting all process steps from goods-in to shipping, with the Itemizer Check by KNAPP being responsible for verified checks: Pre-picked items are automatically emptied out, separated and read from six sides, clearly identifying them. Boasting a reading rate of 99.5 %, the system ensures top quality and transparency. Itemizer Check can process up to 3,000 items per hour and is compatible with existing systems. Thanks to its modular structure, it can easily be expanded. For Apotek 1, this means optimum process reliability, seamless traceability and no compromises in reliability for pharmacies and end customers.



3,000  
ITEMS / H

FINAL CHECK FOR  
PEACE OF MIND.

## Our services for stable warehouse operation

For almost 10 years, Apotek 1 has been relying on our many reactive and preventive services: KNAPP Service Desk, maintenance service, and a comprehensive package of IT services.

Our KNAPP Service Desk is on call to support Apotek 1 with any unexpected issues in day-to-day warehouse operation. Our Communication Center team gathers information and quickly finds a solution together with our technical experts. For routine maintenance management, the Field Service Technicians from our subsidiary in Sweden, KNAPP Nordics, are responsible. Their tasks include regular lift maintenance for the OSR Shuttle.

To keep the system running reliably and stably, Apotek 1 also employs a monitoring software that keeps an eye on the IT infrastructure around the clock, all year round. If it detects anything out of the ordinary, the Service Desk team is immediately notified. The server room, data security and system stability are also regularly vetted.





left to right: Børge Moholt, CFO and  
Morten Solberg, Director Logistics and Supply Chain – Apotek 1

## Cooperating towards safety and knowledge

With the KNAPP solution, Apotek 1 has managed to make their entire value chain – from goods-in to the end customer – measurably more efficient, transparent and precise. KNAPP and Apotek 1 together have expanded the OSR Shuttle, integrated two A-frame picking systems and two Pick-it-Easy Robots. This has reduced manual processing, improved precision and shortened lead times.

“For us, this means we can control the entire value chain. Everything revolves around delivering as efficiently as possible,” stresses Børge Moholt. In Norway, prices for medicinal products are state-regulated, making efficiency even more important than elsewhere. By working together as equals towards a common goal, Apotek 1 and KNAPP were able to address the changed order structure, use the available space better and optimize processes for the long run. Morten Solberg sums up: “The solution has made our processes more efficient, reduced manual tasks and improved precision. We also have a better overview of the entire supply chain and are more in control of it.” Together with KNAPP, Apotek 1 ensures that medicinal products arrive reliably in the hands of those who need them, whenever and wherever that may be.



# VALUE CHAIN TECH PARTNER

## 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, we don't deliver systems off the rack; we take the time that's needed to learn about your needs, business model and the challenges in the industry. 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.



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