

CASE STUDY

Reference Stockmann, Finland:
Flat goods and goods on hangers for
store delivery and eCommerce handled
by one single logistics system



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SSI SCHÄFER

OMNI-CHANNEL DISTRIBUTION CENTER IN TUUSULA

Only half an hour by car from the Finnish capital Helsinki, the small town of Tuusula is located in a picturesque setting on lake Tuusulanjärvi. The area around the lake is a popular holiday region. But there is yet another reason to come to Tuusula. In the last few years, the town has become a strong



The Finnish warehouse chain Stockmann founded in 1862 is one of the leading trading companies in Scandinavia and the Baltics. With its 16 branches and 700 stores, Stockmann has a market presence stretching from Russia to Dubai.

The stores offer an extensive high-quality product range and an excellent customer service combined with a modern shopping environment. Already at the turn of the millennium the company ventured into the eCommerce sector and quickly became one of the leading online shops in Finland.

Twice a year Stockmann traditionally launches the so-called „Crazy Days“ with many special offers to attract bargain hunters especially to the Stockmann flagship store in Helsinki, which – with its 50,000 m² of selling space on eight floors – is the largest department store in Finland. Over one million customers also visited the online shop during this period, with shoppers unpacking their Internet orders the very next day.

location for the logistics sector. In 2016, the Stockmann group put into operation a large-scale logistics center there, in order to handle all supplies to Stockmann stores in Finland and the Baltics as well as eCommerce orders in one single distribution center.



The distribution center houses more than 100,000 different articles - about 1.8 million individual items in total.

In order to be able to face seasonal peaks of this kind efficiently, Stockmann completely overhauled its corporate logistics in the course of the past years focusing on omni-channel distribution. The centerpiece of this strategy is the distribution center in Tuusula completed at the beginning of 2016, where the capacities of four former warehouse locations were consolidated. An innovative system concept allows supplying the Stockmann department stores and handling online orders from one single logistics facility.

The order for the new construction project was assigned to SSI SCHAEFER as general contractor for intralogistics. „SSI SCHAEFER offered us a thoroughly coherent overall package for long-term efficiency and investment security“, summarizes Stockmann’s Logistics Manager, Elina Laine to explain the choice. „An intelligent material flow concept, innovative system technology and attractive after-sales services for reliably supplying all distribution channels from a single installation.“

CHALLENGES

Supplying department stores and eCommerce customers with flat goods as well as goods on hangers from one logistics system represents one of the great challenges in terms of efficient material flow. SSI SCHAEFER developed a solution that organizes the complex order handling processes into clear structures.

„The material flows for store and eCommerce orders had been consistently separated due to the different shipment packaging and transport service providers,” says Rami Syrjä, Sales Manager for SSI SCHAEFER in Finland. „Coordinating this, structuring it according to staging times and different priorities and maintaining this all in perfect balance across a single installation presents a considerable challenge for the design of the warehouse management system.”

The logistics software WAMAS® of SSI SCHAEFER is responsible for stock management and process control to ensure a coordinated order processing and offers permanent transparency thanks to its modern visualization components.



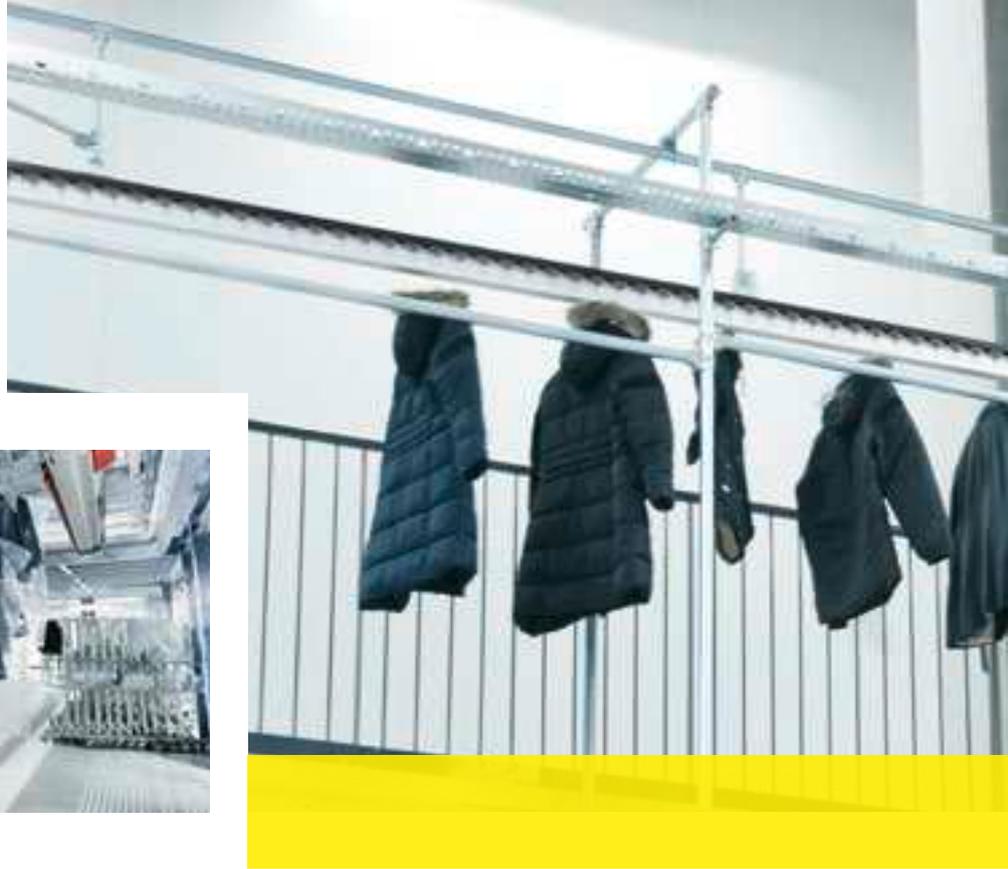
PROJECT OBJECTIVES

- Merging the previous four warehouse locations into only one central location
- Reducing costs through automation of many formerly manual processes
- Creating the ability and flexibility to handle different order types in one single warehouse
- Adapting the processes efficiently to the continuously changing requirements of the different order types
- Developing a system which is able to handle different product ranges, from large items to cosmetics and decoration items, to hanging garments
- Creating a potential for extensions based on the expected growth rate, and scalability to be able to respond to future changes
- Ensuring a high service performance at an attractive cost





Batch picking using RF terminals



In-feed of goods on hangers for storage

GOODS ON HANGERS, FLAT GOODS AND MORE FROM ONE SINGLE WAREHOUSE

The overall system is designed for a performance of 55,000 order lines with 180,000 individual items per day.

- In the GOH goods-in area, the goods on hangers are fetched from the container trucks using extendible unloading telescopes and then passed over to the overhead conveying system by the operators.
- In the flat-to-hang area the operators unpack the goods from the cartons, scan them, put them on hangers and then transfer them to the overhead conveying system. If necessary, the goods are sent through a tunnel finisher where the garments are steamed to remove any wrinkles. In total, the buffer zone for incoming goods is designed for approx. 5,000 items.
- A pin conveyor automatically transports the individual items to one of the three levels of the GOH area with a capacity of more than 350,000 garments. Picking is carried out in batches using RF terminals.
- The goods on hangers destined for shipping online orders are brought to the repacking stations of the eCommerce area via a connecting conveyor. There they are repacked in cartons together with the items from the flat goods area. The remaining goods on hangers are transported to the goods-out area for store delivery.

- The goods on hangers are sorted according to the different stores and placed on z-racks via a manual sorter system. The z-racks are then loaded into the trucks together with the flat goods and delivered to the stores.



Packing stations for eCommerce



Repacking and picking stations

Automatic storage by means of multi-level shuttles

The goods arriving in the goods-in area for flat goods are transported by means of forklift trucks to the pallet rack area to serve as replenishment supply or directly to the repacking stations. Pallet lifting tables allow ergonomically optimized repacking of the items into storage bins. The storage bins

are divided into compartments so that different items can be placed in one bin. From the repacking stations, the storage bins reach the transfer locations of the shuttle storage area, from where one of the *Navette* multi-level shuttles takes them to their assigned storage location on the correct level.

Sorting for store-friendly delivery

One of the great advantages of the system is the possibility of sequencing retrieval.

- The bins arriving at one of the nine Pick to Tote work stations are already in the correct order for picking according to the goods to person principle. The bins destined for store delivery are consolidated until the order is retrieved.
- Once the order is ready for shipping, the bins are retrieved from the sequencing buffer and the shipping papers are automatically inserted at a document insertion station.
- After sorting, 10 bins at a time are automatically loaded onto dollies. A palettizing robot places 20 bins at a time on pallets. By means of forklift trucks, the loaded dollies and pallets are then taken to the goods-out area where they are consolidated with the manually picked goods on hangers and provided for delivery to the stores.
- The bins destined for shipping online orders are transported directly to the repacking stations of the eCommerce area



Storage and retrieval by Navette shuttles



Pick to Tote picking

where they are consolidated with the goods on hangers and repacked into shipping cartons. A shipping sorter then sorts the closed and labeled shipping cartons according to the shipping carriers and sends them to the respective shipping lanes.

FLEXIBLE AND SCALABLE: THE SOLUTION COMPONENTS



3D-MATRIX Solution® for flat goods

The centerpiece of the Stockmann system concept is the shuttle system with 130,500 bin storage locations for double-deep storage. The concept based on the 3D-MATRIX Solution® guarantees Stockmann maximum availability and efficiency of the processes of storage, buffering and sequencing in one single system. The bins arriving from the repacking stations are handed over to one of the 45 lifts within the shuttle storage area. These transport the bins to one of the eight Navette shuttle levels and deposit them at the

transfer locations. There, the multi-level shuttles with their load handling devices can collect up to four bins at a time and take them to the assigned storage locations. Storage and retrieval operations can be carried out at the same time. This minimizes travel times and doubles process efficiency.

Among the great advantages of the system are its scalability and sequencing during retrieval.



GOH area



Pin conveyor for automated transport between different



SSI Single, the overhead conveying system for goods on hangers

The modern concept for flat goods is complemented by system components for goods on hangers. The SSI Single system is used for transporting and sorting single garments on hangers on horizontal and vertical conveyors. Manual push conveyors are used for manual process steps such as quality check, labeling and bridging of short distances.

Pin conveyors are used for covering long distances and connecting several floors or work areas. The pin conveyor

is particularly suitable as a take-away conveyor from storage areas, since nearly all types of standard hangers can be hung sideways onto it. The SSI Single system used within the Stockmann installation is energy-saving and nearly maintenance-free. It ensures maximum picking accuracy with low investment costs and blends optimally into the warehousing system installed on three levels.



levels 45 lifts connect levels in the shuttle storage area



Shuttle area with 130,500 bin storage locations

“In the new distribution center we are now able to complete orders for department stores and online orders much more quickly and transparently than before. The completely scalable system concept also offers us a high degree of flexibility for our variable range of items and leeway for further growth.

SSI SCHAEFER’s solution has thoroughly impressed us.”

Elina Laine,
Logistics Manager
at Stockmann



FACTS AND FIGURES

System key figures

Warehouse size	29.000 m ²
SKUs	more than 100,000
Lines/day	55,000
Pieces/day	180,000
Picking peaks	marketing campaigns like „Crazy Days“ every spring and fall, Christmas
Working hours/day	16
Number of shifts/day	2

Scope of supply and services of SSI SCHAEFER

Conveying system

Carton and bin conveying system	1,500 m
Overhead conveying system	3,500 m
Shipping sorter	12 outlets

Storage & retrieval systems

Shuttle storage area for flat goods	130,500 bin storage locations, double-deep storage, 72 shuttles of type Navette, 45 lifts
Storage area for goods on hangers	350,000 storage locations on three levels
Pallet rack storage area	7,800 pallet locations

Picking systems

Flat goods	9 Pick to Tote work stations
Goods on hangers	batch picking with RF terminals

Handling systems

2 foldable bin erectors
1 palletizing robots
1 dolly stacker
5 dynamic scales
2 label adding device
27 lifting tables

Software solution

WAMAS®





SIX REASONS WHY YOU SHOULD CHOOSE SSI SCHAEFER:

- **Security:**

As a financially independent family business we are committed to long-term solutions - you can trust that we will be there for you tomorrow and in the years to come.

- **Efficiency:**

Our solutions are scalable and grow with your needs. Investing in a solution by SSI Schaefer, you are therefore investing in the future.

- **Quality:**

As a specialist for automation systems, we provide single source solutions of our own production. This guarantees that you will receive perfectly matched high-quality solutions.

- **Reliability:**

Thanks to our world-wide Customer Service & Support network, we are able to ensure flawless operation of your system over the years.

- **Know-how:**

Our solutions are always up to date with the latest technological standard and can be smoothly integrated into the existing (IT) landscape.

- **Internationality:**

As a globally acting company we are locally available to our customers all over the world and speak their language.

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