

Warehouse management system (WMS) development

Case study

Client:

A large retailer which owns a wide network of stores, warehouses and 'dark stores'

Technologies and tools:

WMS solutions

Easy UX

WMS topology

Ping One + Hylia/IS4

Zebra 3300

Zebra TC21

CipherLab RK95



Develop a solution that would automate processes



Luxoft is a trusted partner for the world's largest retailers

For one of Europe's largest do-it-yourself retailers

Challenge

Our client a large retailer which owns a wide network of stores, warehouses and 'dark stores.' In any business a well-organized, and understandable location of goods in stores, warehouses and dark stores contributes to an increase in turnover. The optimization of such services allows goods to be sold according to production and expiration dates, simplifies the search for goods in stores and increases storage efficiency.

In order to increase the transparency of our client's storage network operations, reduce the cost of delivering goods from the seller to the buyer and optimize the cost of customer service, it was necessary to develop a solution that would automate processes. We also needed to include a set of integrations with a number of in store electronic devices and, in particular, for dark store internal employees.

Knowing Luxoft as a trusted partner, the client turned to us for help.

Solution

Luxoft joined the client's internal development team to cover the following key areas of storage operations with the help of a new solution:

- Reception automation — receive goods in time, in a good location, in the correct quantity, and of good quality
- Stock management automation — optimize stock location and movement inside the warehouse (dark store)
- Picking automation — pick, pack and ship orders in time, with the correct quantity and of the right quality

A 'dark store' is a mini fulfillment center with an area of 5K-30K sq.m. which is responsible for the reception of goods from suppliers, a storage area (storage and picking), picking, packing and expediting for customer delivery, an optional pickup point area, optional services for customers (overlock hemming, coloring, saw cuts, etc.), that's why these particular parts of the retail chain were chosen as the perfect place to launch the new solution.

Reception automation:

- Decrease license costs for WMS solutions by replacing proprietary products
- Operational excellence for reception processes
- Easy UX to decrease onboarding costs for newcomers and make the reception team's life easier
- Carrier appointment integration
- Smart dashboard for reception admin

Stock management automation:

- WMS topology — the opportunity to change the organization of storage layout to increase warehouse productivity
- Placement, movement and refill tasks
- Logging product movements and search services
- Automatically replenishment the picking zone
- Optimization of storage places
- Smart stock put-away
- Managing product placement strategies

Picking automation:

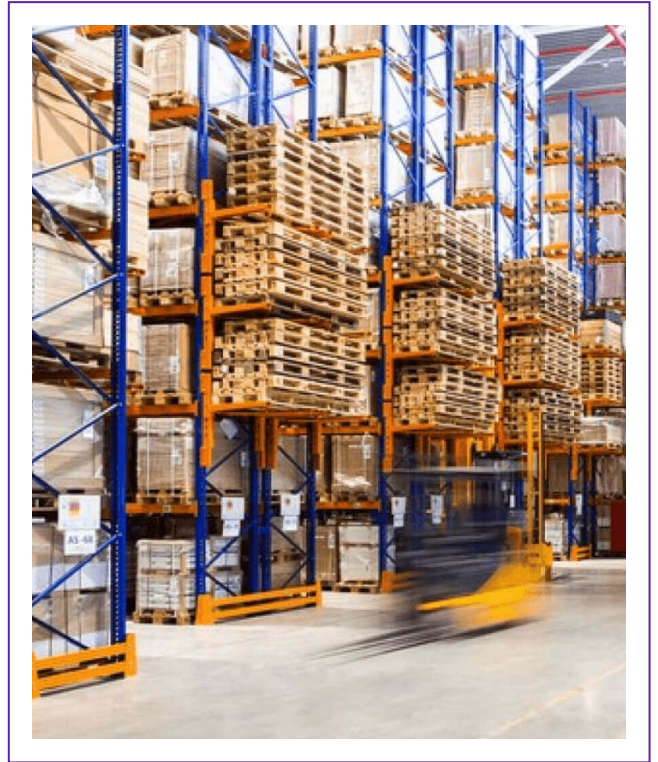
- Transition to picking from a mobile phone instead of a list
- Operational dashboard
- Adapting existing processes for the dark store area
- Ability to create and prioritize warehouse picking tasks and send them for work
- Administration of shipment and picking function

Other automation functions included:

Authorization (Ping One + Hylia/IS4), multi-language support, devices (Zebra 3300, Zebra TC21, CipherLab RK95) and cloud print API compatibility.

Results

- Optimization of the processes for receiving, collecting an order and preparing it for pickup/delivery
 - Picking mobility increased from 17% to 87% over one year
 - Redesign of picking helped increase the application speed by a factor of 3
- Warehouse loading and product distribution optimization:
 - Tripled the used capacity of warehouses in 3 years
 - Increased the number of orders collected and ready to ship to 2,000 daily
- Correct administration of warehouse processes, increasing the transparency of the warehouse



Technologies

Java, Kotlin, Spring Boot, Docker, PostgreSQL, Kafka

About Luxoft

Luxoft is the design, data and development arm of DXC Technology, providing bespoke, end-to-end technology solutions for mission critical systems, products and services. We help create data-fueled organizations, solving complex operational, technological and strategic challenges. Our passion is building resilient businesses, while generating new business channels and revenue streams, exceptional user experiences and modernized operations at scale.

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