Körber Supply Chain

The rise of smart warehouses

How to boost your operational efficiency through digitization

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Introduction

Supply chain complexity is increasing. For most businesses, that means a swift increase in logistical challenges too. Complex inventories, SKU proliferation, labor shortages, and fast, accurate fulfillment are just some of them.

To overcome these challenges, while providing a superior customer experience, businesses across industries must reimagine and transform their supply chains.

The need for “smarter” warehouses

To meet the demands of complexity, supply chains have to become more efficient, more responsive, and more resilient. To do this, they must become smarter, and therefore digitized.

Digitized supply chains are characterized by a high degree of system integration and data exchange, the automation of processes, and smarter decision-making. For many businesses, the warehouse is central to this process.

The necessity of digitization is being recognized by industry experts, too. According to MHI and Deloitte[1] 80% of industry experts in 2019 believe the digital supply chain will be the dominant model within the next five years.

Fortunately, there are a whole host of innovative technologies available to complement warehouse operations. These can enable digitization, and thereby improve efficiencies, in all areas.

Digitizing your warehouse

The warehouse management system (WMS) is at the center of digitization. It introduces system driven processes and decision-making, optimizes the flow of goods and use of resources. It can also be used as a hub for integrating other technologies, including:

- **IoT sensors:** used across the warehouse for example in tracking assets, detecting temperature changes, and alerting personnel to displaced products
- **Automation equipment:** helps minimize human intervention for physical and repetitive tasks. It can include material handling equipment (MHE) such as belts and sorters, and warehouse automation systems like robotics or layer pickers
- **Autonomous mobile robots (AMR):** designed to work with human operatives, helping them to perform repetitive and time-consuming transportation tasks.
- **Voice- and vision-directed work solutions (VVDW):** increase task speed, accuracy, and safety by keeping operatives' hands and eyes free

Integrating these solutions with your WMS provides greater visibility, and allows you to synchronize them with warehouse processes to improve efficiency. It also turns the WMS into a technology platform that can capture data from across your entire operation. This data is a valuable resource that can be used as input for advanced analytics and machine learning.

Running your WMS and other supply chain solutions in the cloud makes them, and the data they contain, more accessible to other systems. It also facilitates access for employees and partners across locations.

Analytics and machine learning (ML)

Advanced analytics and machine learning (ML) can create a new level of insight, and therefore smarter processes for improving operational performance.

In your day-to-day operations, this can look like:

- **Improved decision-making**
  Predictive analytics provides real-time key performance indicators (KPIs) and forward-looking key performance predictors (KPPs) which enable a shift from reactive to proactive decision-making.
- **Real-time adjustments**
  Pattern recognition and ML can lead to real-time adjustments. Wave planning, for example, can be adjusted when cut-off times for next-day shipments approach. This means completing these orders is automatically prioritized.
- **Smarter task management**
  Analytics and pattern recognition can process broader sets of variables and optimize task management. This can include:
  - Improved slotting algorithms: storage locations are assigned based on how frequently goods are accessed, improving picking speeds
  - Improved wave planning: optimizes waves and picking to expedite order completion
- **Traffic management**
  Travel time inside the warehouse has a large impact on order processing times. Real-time location systems (RTLS) provide precise directions and dynamically update routes for workers, driverless vehicles and AMRs, to provide the fastest possible routes.

Benefits of digitized warehouses

Digitization, including advanced analytics and ML, can significantly improve warehouse efficiencies. Key benefits include:

- **End-to-end visibility:** integrating the WMS with other solutions provides full transparency across your entire operation, enabling process improvements and enhancing decision making
- **Holistic optimization:** system integration helps to synchronize processes, and allows you to holistically optimize overall operational performance
- **Accurate and efficient processes:** process automation and enhanced decision-making reduce human error, helping workers carry out routine operations smoothly and efficiently
- **Improved decisions:** with end-to-end transparency and new operational insights, managers and workers are equipped to make smarter decisions, improving results, and enhancing performance

Conclusion

Supply chain complexity will only continue to increase. We can help you meet the resulting requirements and boost your operational efficiency through digitization.

With over 20 years of supply chain experience, Körber is one of the few vendors who provides an end-to-end range of supply chain solutions. We will partner – and innovate – with you to design your digitized warehouse solution, and support you through its implementation.

From smart supply chain software to automation equipment to robotics and voice, we can help make your digitized warehouse a reality.

Find out more
Visit our website to discover how we can help you to digitize your supply chain:

Read more →

Reference
1. 2019 MHI Annual Industry Report: “Elevating Supply Chain Digital Consciousness"

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