

Körber Supply Chain

Master Class Series

Today's Class:

Automating your Warehouse with SAP
EWM and SAP MFS



Speakers



Thomas Goldsby
Professor

James A. Haslam, II Chair of Logistics
The University of Tennessee Knoxville



Mark Vogt

Head of International Sales and
Marketing Körber Supply Chain



Thomas Schmid

Sales and Marketing Manager
Körber Supply Chain

Supply Chain Master Class: SAP Supply Chain Excellence

Why are we here? What are we trying to accomplish?

Class Schedule:

- September 29: SAP Supply Chain Logistics: Best Practices for Implementation
- October 1: Migrating from SAP WM to SAP EWM – key considerations for your project
- October 6: SAP EWM in the Cloud – how to pick the best deployment option for your business
- October 8: Automating your Warehouse with SAP EWM and SAP MFS
- October 13: Enhancing SAP supply chain logistics with voice solutions

Master Class Series – On-Demand

- *Addressing Labor Challenges*
- *Cold Storage Trends*
- *Warehouse Technology Excellence*
- *Workplace Efficiencies and Safety*

Housekeeping

- All phone lines are muted
- Recording of today's class and slides will be emailed to you within 48 hours

Questions:

- Ask questions during today's class in the GoToWebinar Questions window
- Questions will be addressed at the end of today's class or we will follow up with questions via email after class

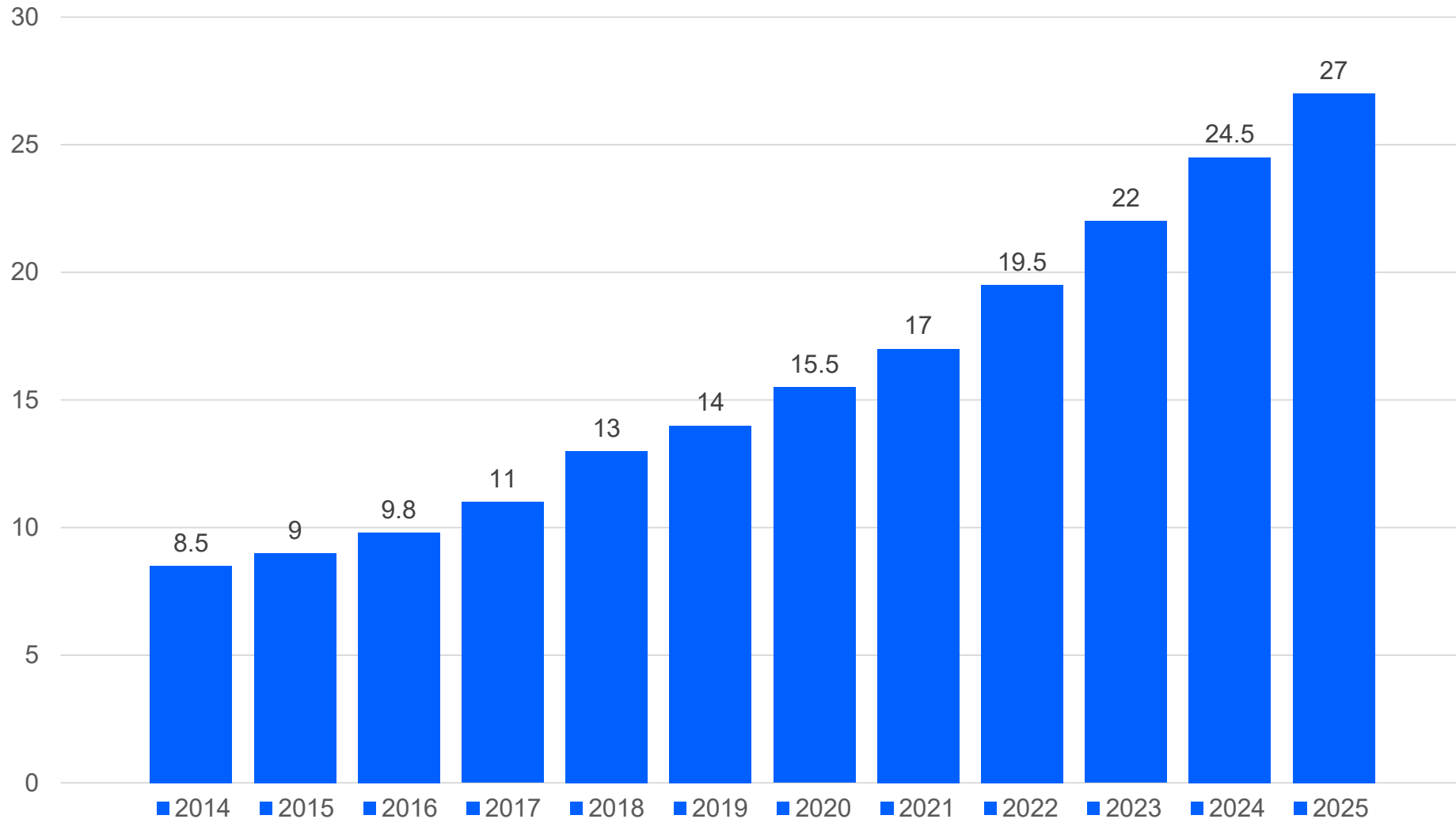
Handout:

- HAZET case study: Warehouse automation with SAP EWM and SAP MFS

Onward and Upward – Warehouse Automation



Global Market Size, US\$ Billions



Reasons for the Surge in Warehouse Automation



E-commerce fulfillment is the biggest factor driving the adoption of warehouse automation technologies

High warehouse rents, shortage of skilled warehouse staff, and increasing staff costs are driving even higher adoption

AGV/AMR, ASRS, and Picking Systems have the highest share of the warehouse automation market in 2025.

Source: LogisticsIQ (June 2020)

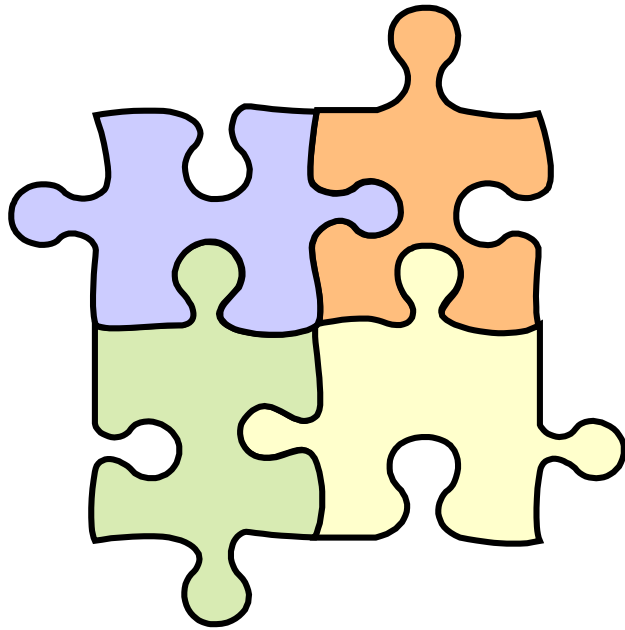
What does it take to direct this automation, and how do you get there?

Automating your Warehouse with SAP EWM and SAP MFS



Key success factors for your warehouse automation project:

- **Find the right implementation partner**
- **Design the best solution to address your requirements**
- **Choose the most efficient technology**
- **Select the SAP architecture that fits your needs**

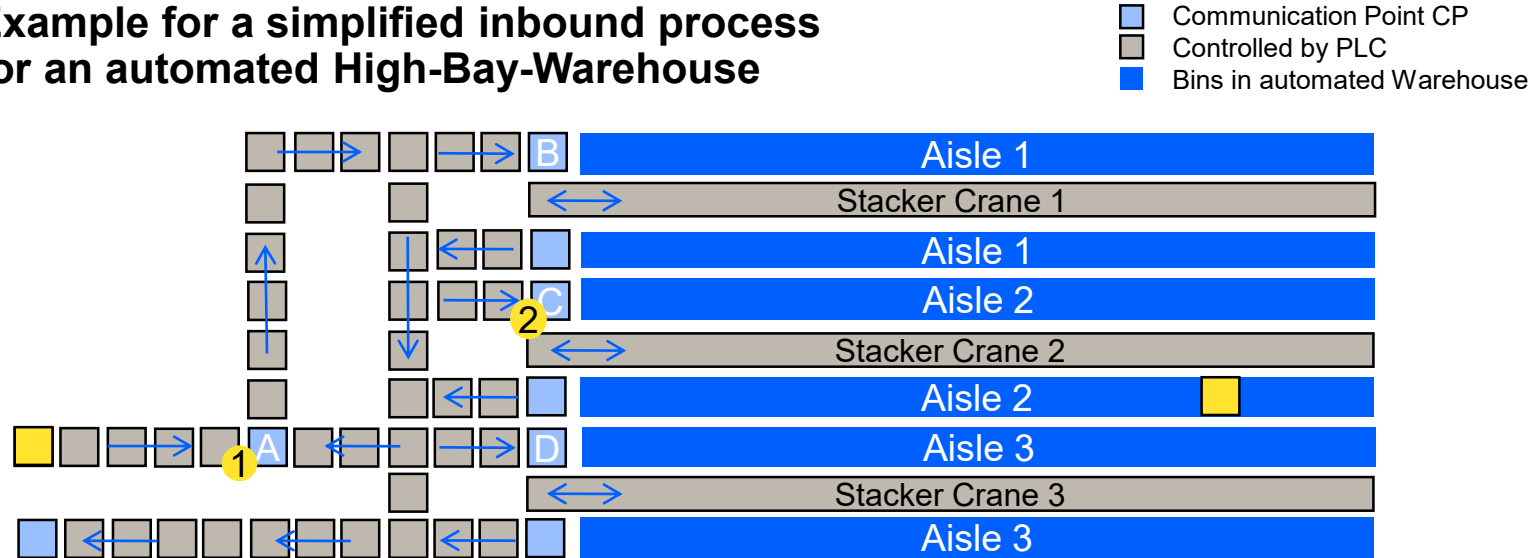


SAP EWM/MFS - Material Flow Control for automated warehouses



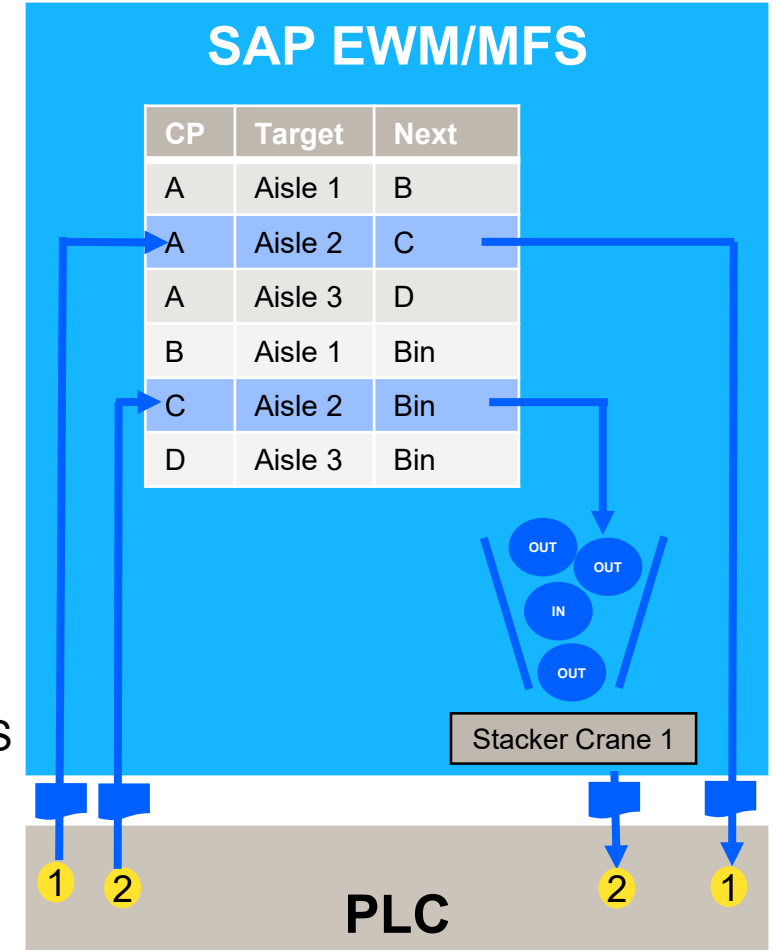
How SAP EWM/MFS works – a very short introduction

Example for a simplified inbound process for an automated High-Bay-Warehouse

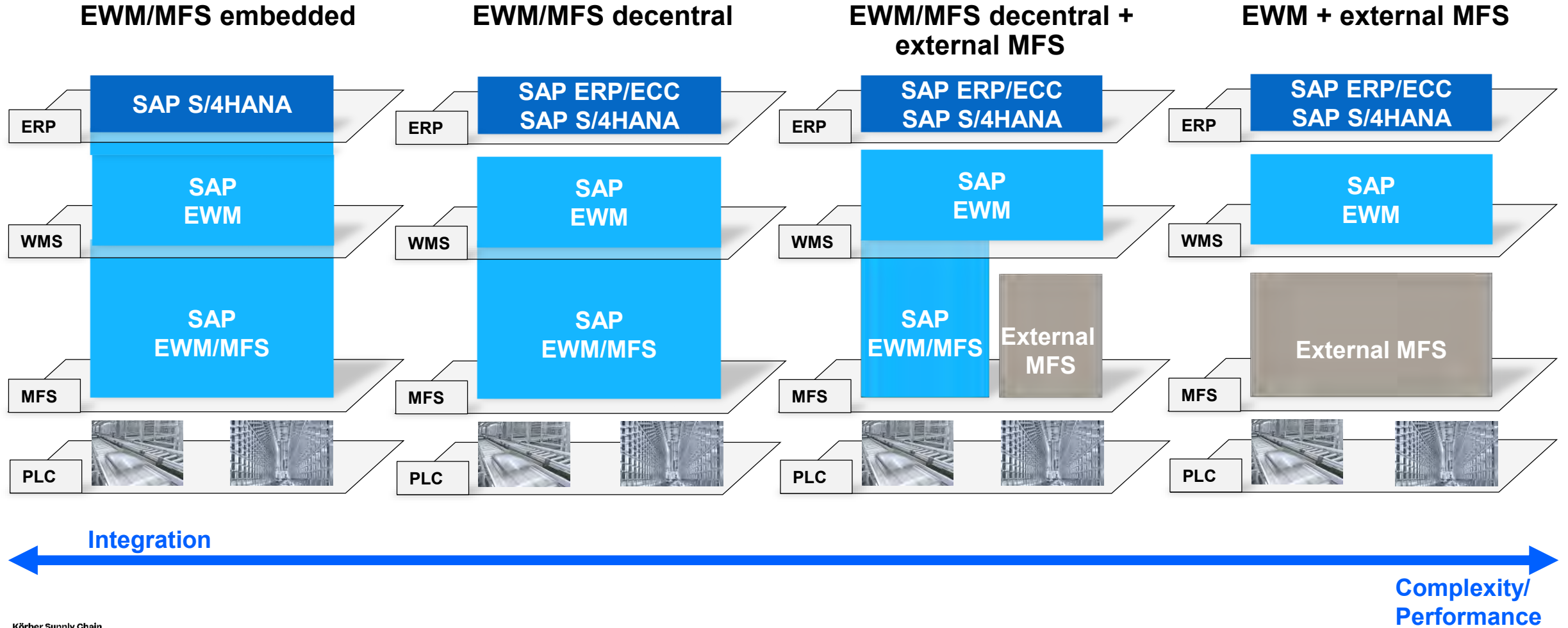


Basic Functionality:

- PLC moves the HU to the next communication point
- When entering a communication point the PLC sends a telegram to SAP EWM/MFS
- SAP EWM/MFS determines the route to the next communication point and sends a telegram to initiate the next movement



SAP EWM/MFS – Deployment options



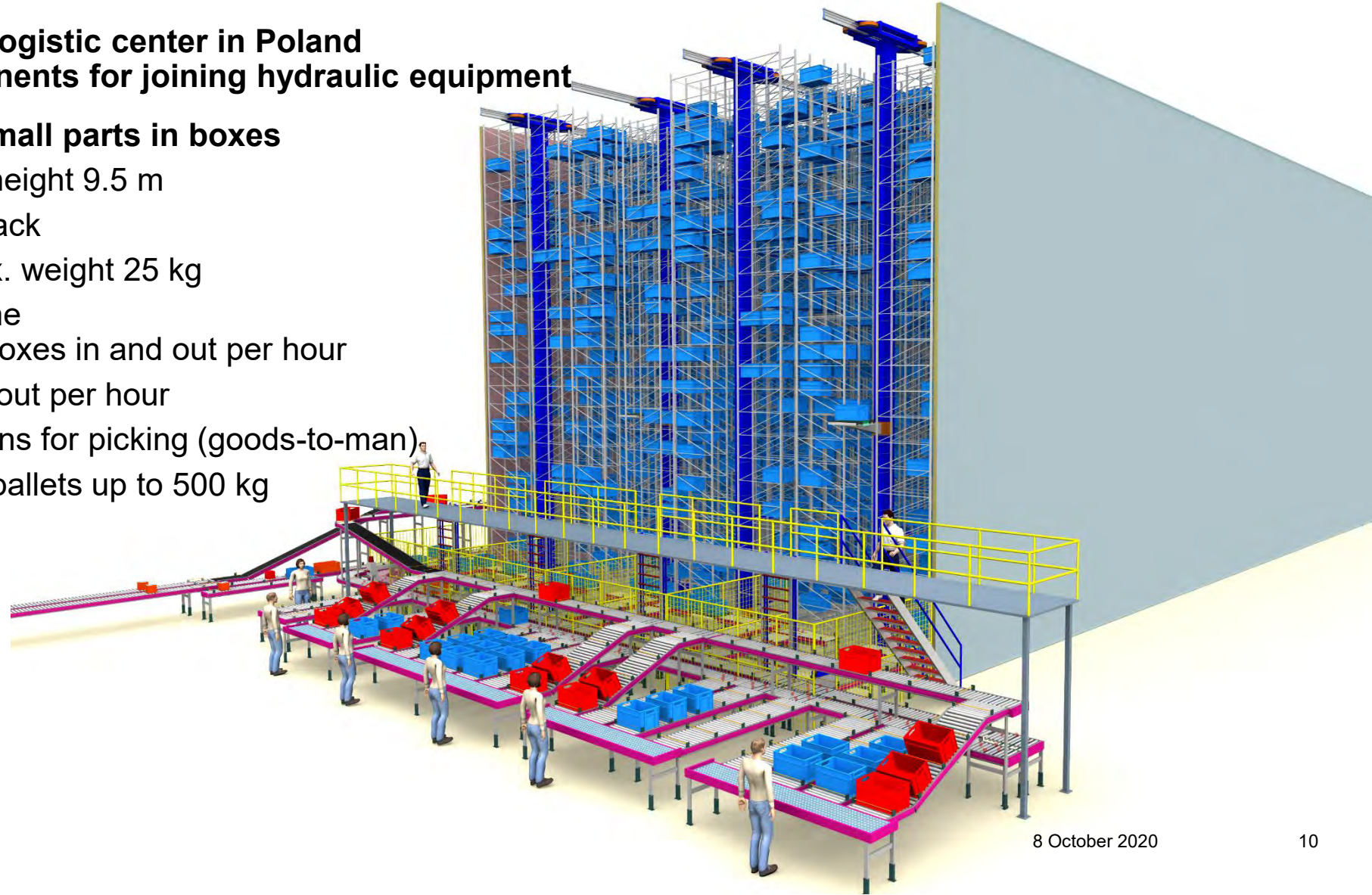
Case study: Fully integrated SAP EWM/MFS solution



New automated distribution and logistic center in Poland for semi finished/finished components for joining hydraulic equipment

Automated warehouse to store small parts in boxes

- Length 40.5 m x width 14.8 m x height 9.5 m
- Ca. 50,000 box locations in the rack
- Different types of boxes with max. weight 25 kg
- 4 aisles, each with a stacker crane
Each stacker crane moves 158 boxes in and out per hour
- Performance >400 boxes in and out per hour
- Conveyor system with workstations for picking (goods-to-man)
- Manual warehouse to store half-pallets up to 500 kg
- Conveyor system for half-pallets



Case study: Fully integrated SAP EWM/MFS solution



Customer requirements:

- Integrated processes (ERP – EWM – EWM/MFS)
- Solution to substitute existing external MFS Systems on other sites

Implemented Solution:

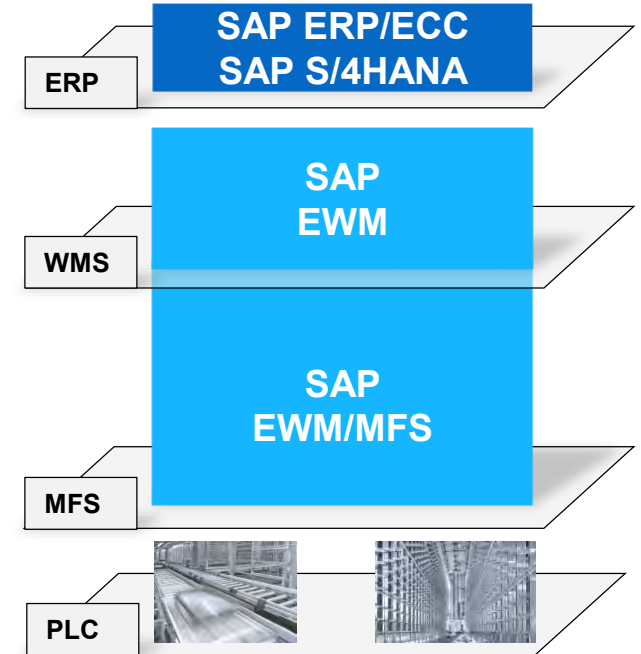
- Decentral SAP EWM/MFS in Poland

Why SAP EWM/MFS?

- SAP EWM/MFS is able to control a miniload warehouse and conveyor systems for totes
- Level of complexity is medium to high

Why SAP EWM/MFS decentral?

- Performance requirements are medium to high
- SAP EWM is hosted in Germany, with direct communications link between SAP EWM/MFS and the PLC in Poland (2 Countries, different providers)
- Sufficiently low latency was verified with tests using a SAP EWM System hosted in Germany and a simulation of the PLCs running at the site in Poland



Case study: Partially integrated SAP EWM/MFS solution



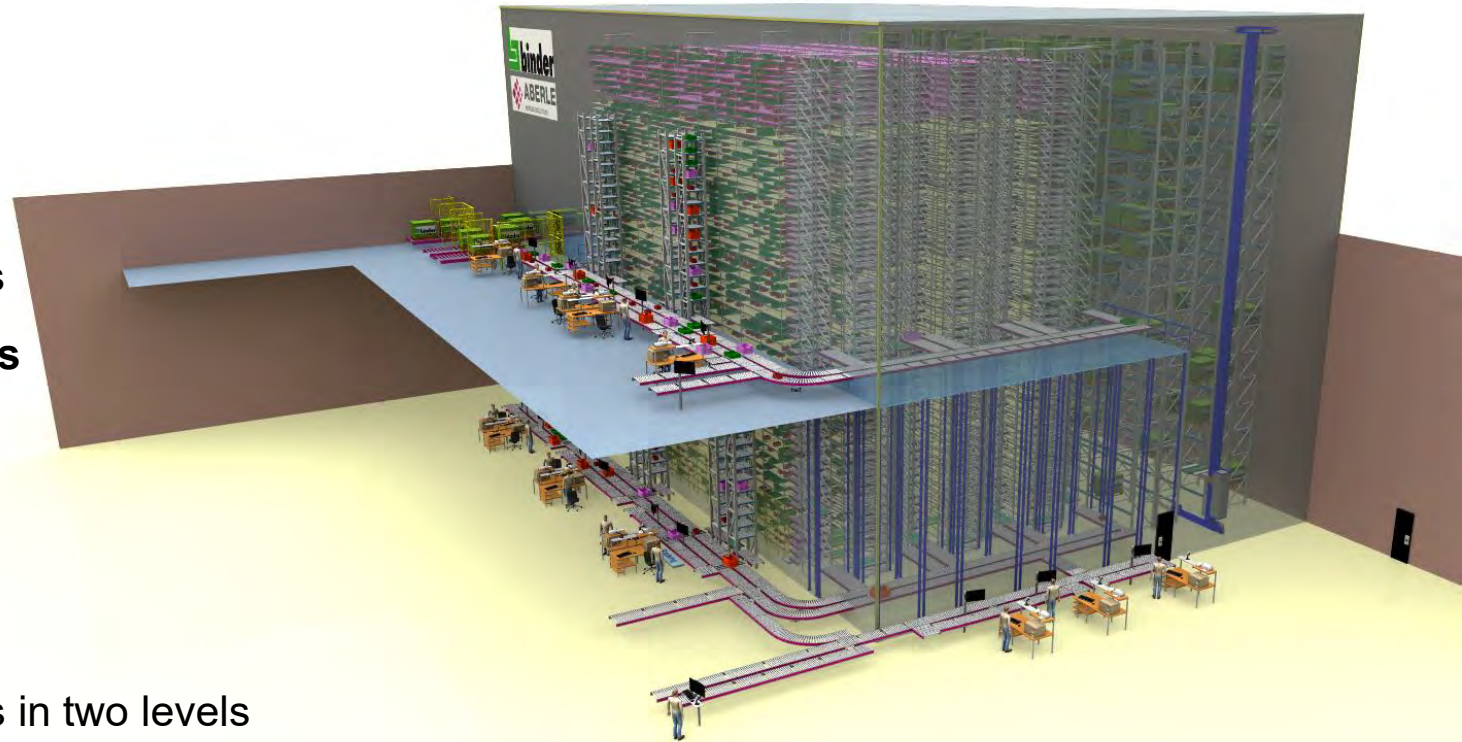
New fully automated logistics center for semi-finished and finished electronic devices

Automated warehouse to store pallets

- Length 34.5 m x width 7.4 m x height 23.0 m
- About 1,500 pallet locations in the rack
- Different types of pallets with max. weight 1,100 kg
- One aisle with one stacker crane
- Performance 35 pallets in and out per hour
- Conveyor system with in- and outfeeds in two levels

Automated warehouse to store small parts in boxes

- Length 29.6 m x width 13.2 m x height 23.0 m
- Ca. 30,000 box locations in the rack
- Different types of boxes with max. weight 25 kg
- Three aisles each with four shuttles
- Performance: 450/1,200 boxes in and out per hour
- Conveyor system with several different workstations in two levels



Case study: Partially integrated SAP EWM/MFS solution



Requirements from customer:

- Integrated processes (ERP – EWM – EWM/MFS)
- SAP EWM on SAP S/4HANA

Implemented Solution

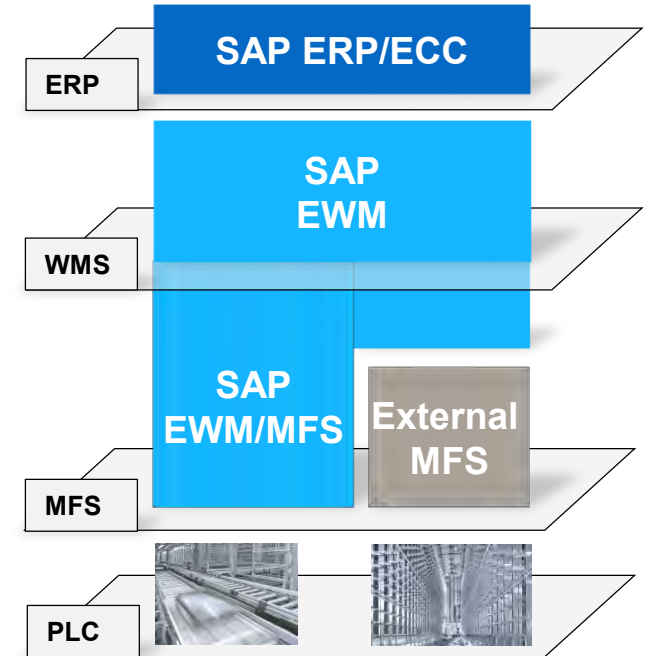
- Decentral SAP EWM/MFS + external MFS for Shuttle coordination

Why SAP EWM/MFS + external MFS for Shuttle coordination?

- SAP EWM/MFS is able to control the double-deep High-Bay-Warehouse for palettes and to control conveyor systems for palettes and totes
- External MFS to coordinates the movements of the shuttle from one level to another, because there exists no standard module for this (warehouse strategies, movements) in SAP EWM/MFS
- Level of complexity is high

Why SAP EWM/MFS decentral?

- Performance requirements are medium to high



Selecting right automation architecture with SAP EWM

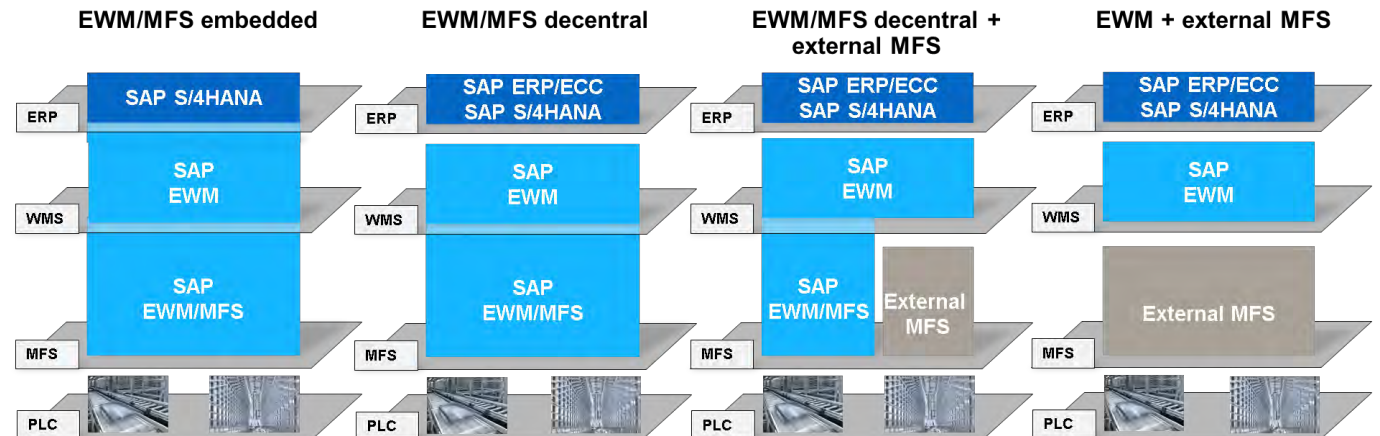
One size does NOT fit all!

Key decision points:

SAP EWM/MFS decentral or embedded? Or an external/3rd party MFS?

Decision is unique to each project and depends on the following criteria:

- SAP-strategy of the customer
- Location of SAP EWM/MFS (on-site, hosted)
- Required performance to control the automated warehouse
- Complexity of the warehouse processes
- Dependencies on the implementation partner
- Support
- Estimated future adaptations
- Project budget



Körber Supply Chain

Master Class Series

Any questions?

Today's Class:

SAP Supply Chain Logistics –
Best Practices for Implementation



Next Supply Chain Master Class



Körber Supply Chain

**Master
Class
Series**

Enhancing SAP supply chain logistics with voice solutions



The significant operational improvements enabled by voice directed work have been realized by numerous supply chains running SAP. The continued growth of Extended Warehouse Management (EWM) and the introduction of S4/HANA open up even more possibilities. Join us to explore how the latest advances in voice can improve productivity, accuracy and safety in your SAP warehouse.

Contributor:

Anton du Preez | Group Sales Director
Körber Supply Chain