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WES Bridging the Future...Simplifying new technology integrations under the WMS

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Presenters

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Challenges Facing Our Industry

• “I have three problems….Labor, Labor, Labor”

• Engineers have designed systems that are too complicated to operate

• Automation is a necessity for survival, not a nice to have

• Immaturity of the WES market has created many myths and differences of opinion
Objectives

- What is a WES
- Where Does a WES Fit with Emerging Technology
- How Can a WES Extend the Life of a WMS and/or Ease the Upgrade of a WMS
WES vs WMS vs WCS

WMS
(Cerebrum)
Controls voluntary muscles, deductive reasoning and memory

WES
(Cerebellum)
Underneath cerebrum. Coordinate muscle movements, maintain posture and balance

Machine Control
(Brain Stem)
Relay center connecting the cerebrum and cerebellum to the spinal cord. Controls automatic functions like breathing, heart rate, body temperature, wake & sleep cycles, digestion, sneezing, coughing
WES vs WMS vs WCS

WMS
- Receiving
- Putaway
- Slotting & Location Management
- Inventory Management
- Wave Management
- Management Reporting
- Supply Chain Integration

WES
- Workflow Management
- Picking
- Replenishment Management
- Mobile Scanning
- Shipping Management
- Resource Management
- Synchronizing & Sequencing work events

WCS
- Scanners
- Pick-To-Light
- Sorter Management
- Conveyor Routing
- Fixed Scanner Integration
- Pick Management Technologies
Difference between WMS & WES

**Time**

- **WMS** - Time to create a work plan is not critical to the operation. Work can be planned hours ahead. Computing architecture not based on making real time decisions.

- **WES** – Time is very critical to provide direction to MHE. Knowing the status of all resources in real time enables an operation to react to increasing order cycle time expectations.
Technology stack with and without WES

**WMS & WES**

ERI & Order Management

LMS → WMS → TMS

**Warehouse Execution System**
- Order Attributes
- Reporting
- Optimization
- Supervision & Labor

**WMS**

ERI & Order Management

LMS → WMS → TMS

**Put to Light**
- Order Attributes
- Reporting
- Optimization
- Machine Control

**Unit Sorter**
- Order Attributes
- Reporting
- Optimization
- Machine Control

**Conveyor**
- Order Attributes
- Reporting
- Optimization
- Machine Control

**RF Picking**
- Order Attributes
- Reporting
- Optimization
- Machine Control
Emerging Technologies & WES
Challenges of Emerging Technology

• E-commerce Peak Ratios
• Implementation Life Cycle
  • Pilot
  • Implementation
  • On-going
• What’s Next??
Simplified Operational Control

• Too Complicated to Operate?
• Balance Across Competing Priorities
• Real Time Visibility Across Multiple Work Streams

WMS & WES

WMS

LMS → WMS → TMS

ERP & Order Management

Warehouse Execution System
Order Attributes Reporting Optimization
Supervision & Labor

Put to Light
Order Attributes Reporting Optimization
Machine Control

Area Supervision
Area Labor

Unit Sorter
Order Attributes Reporting Optimization
Machine Control

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Simplified WMS Upgrade Path

• Reduced WMS Mods
• Reduced Integration Points
• Reduced Impact on Operations
Case Study
Key Takeaways

• WES Is a workflow execution system, not the single record of inventory, business rules or orders

• WES Enables “Test Drive” of New Technologies

• WES Simplifies Operations

• WES Simplifies WMS Upgrade
For more information

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