

# QAD Automation Solutions Warehousing and Integrations

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explore2019

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# Introduction



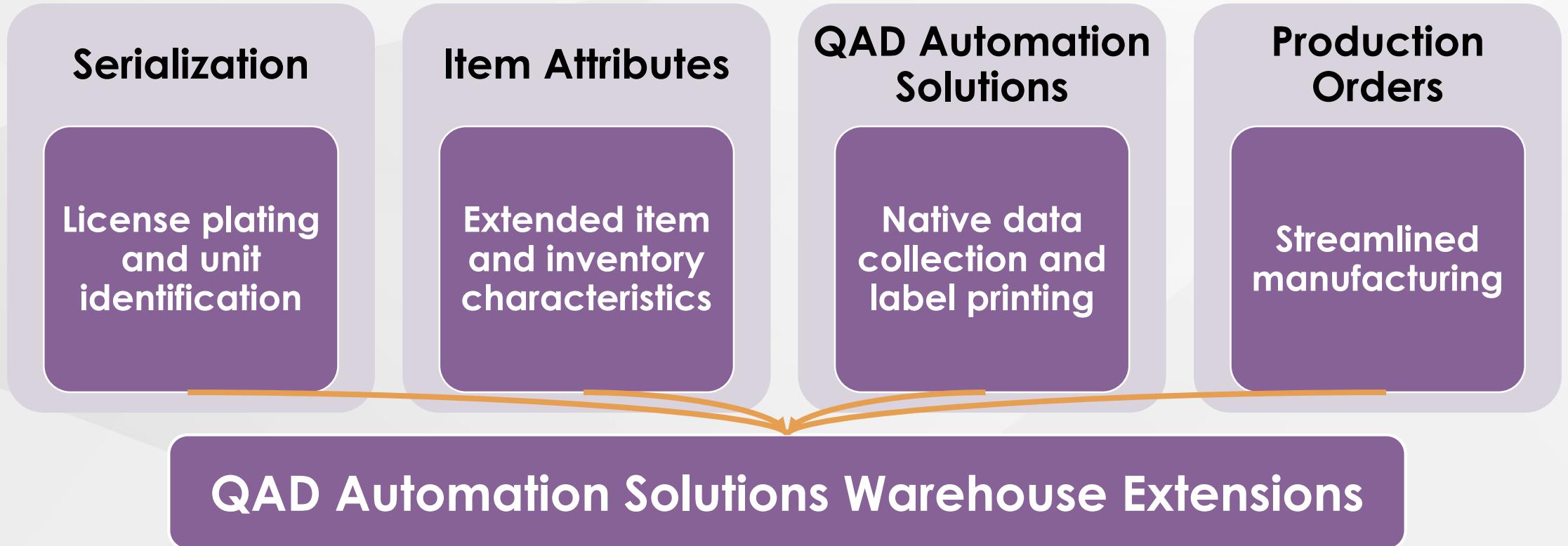
**Michael Ochi**  
**Operational Manager, QAD Labs**  
**QAD**

# Agenda

- Background
- Business drivers
- Overview
- Use cases
  - System upgrades
  - Risk reduction
  - Production-driven
  - Advanced controls

## Advanced Warehousing – Background

- QAD Warehousing is the legacy system (a.k.a. AIM / WMS)
- Major core ERP developments in last 5 years



# Product Evolution

Features	Legacy QAD Warehousing	Warehouse Extensions
Warehouse Layout	✓	✓
Algorithms, Events/Tasks	✓	✓
Material routings/Engine	✓	✓
Automation Solutions	X	✓
Serialization	X	✓
Production Orders	X	✓
Integration/Interface Layer*	X	✓

# QAS Warehouse Extensions – QAD Labs Offering

Research /  
Monitor

Educate /  
Evaluate

Innovate



Labs

Productize /  
Integrate

Research /  
Monitor

Educate /  
Evaluate

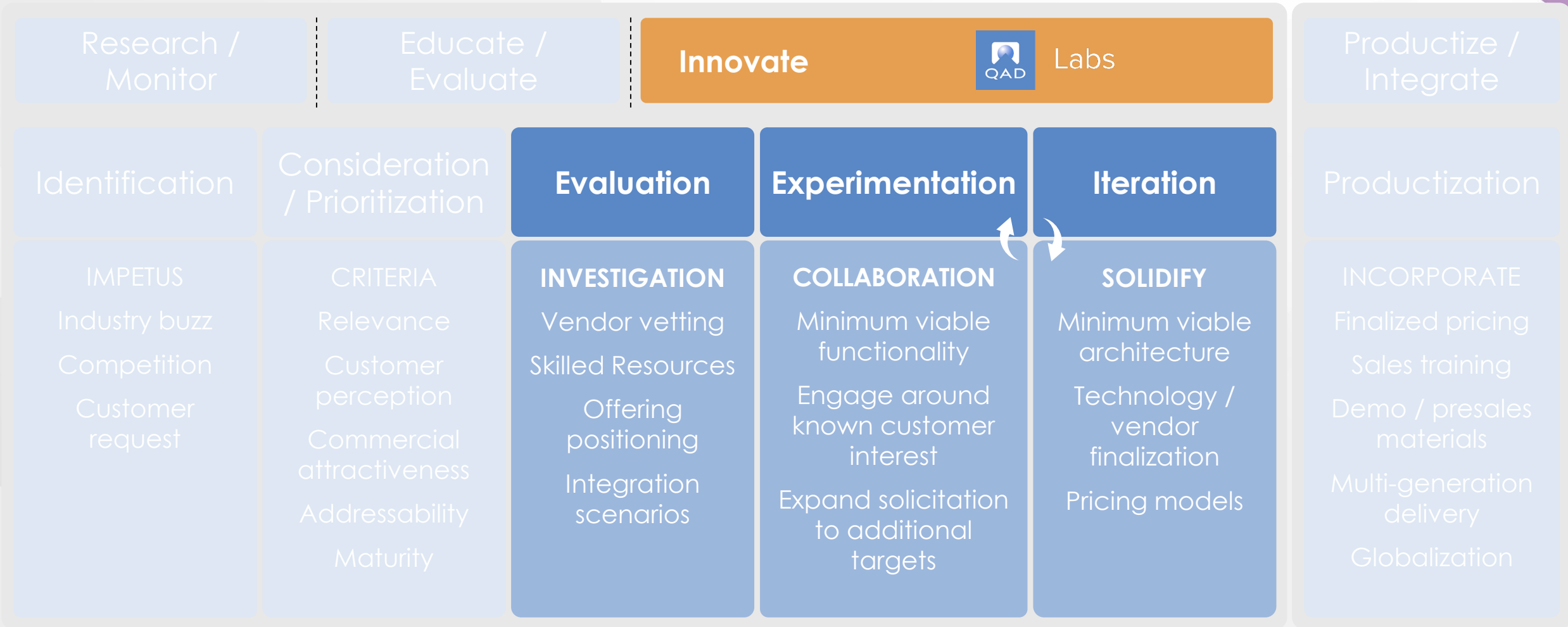
Innovate



Labs

Productize /  
Integrate

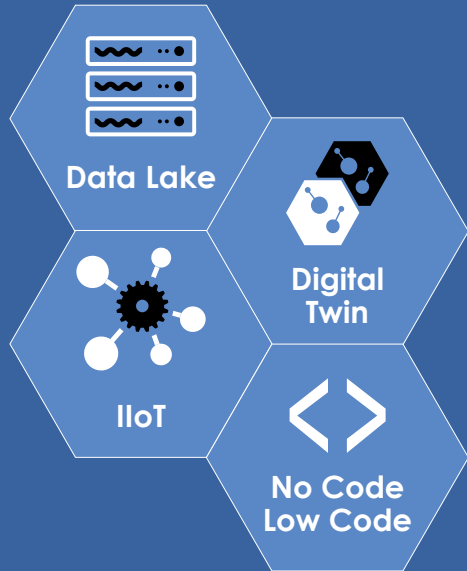
# QAD Labs



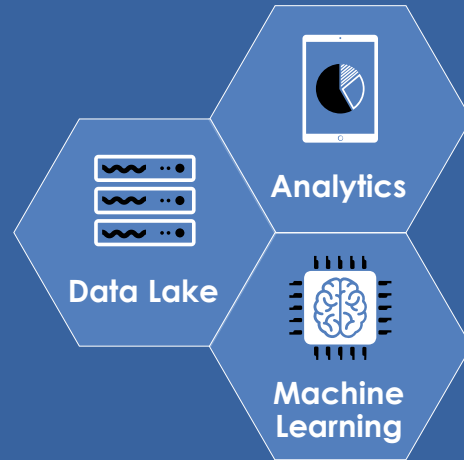


# QAD Labs

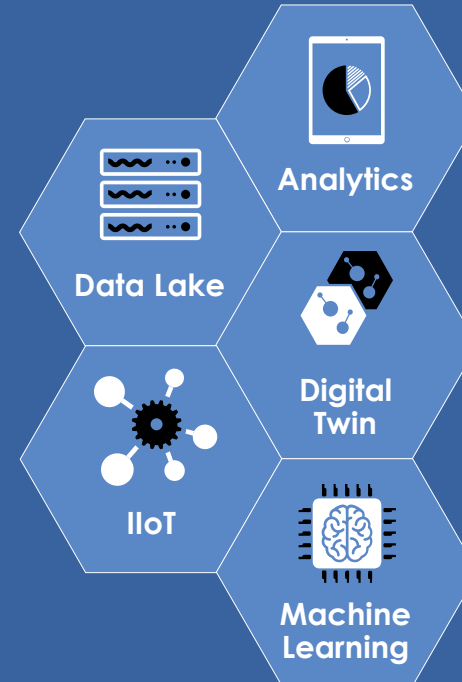
## Production Execution



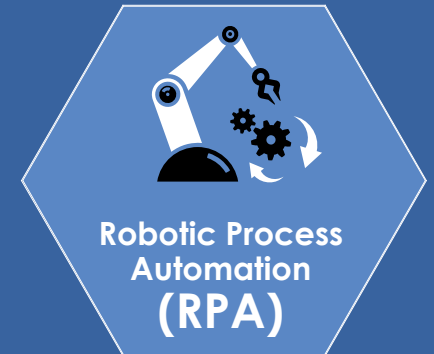
## ML Assistants Planning, Operational Efficiency



## Traceability



## Process Automation



Research / Monitor

Educate / Evaluate

Innovate



Labs

Productize / Integrate

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# **Business Drivers**

## Warehouse Management – Business Drivers

- Inventory is a necessary evil
- Warehouses are a necessary evil
- Warehouse management should mitigate costs



**Space and  
Labor  
Utilization**



**Shrinkage  
and Touch  
Time**

## Business Drivers → Focus

Intelligent  
Putaway

Efficient  
Picking

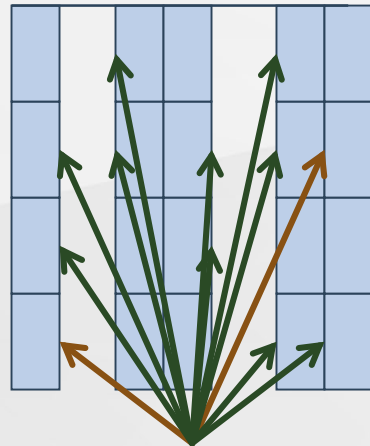
Effective  
Warehouse  
Management

## Focus Example → Intelligent Putaway

- What does it mean?
- Minimize total travel
- Consolidate storage
- Prepare best access
  - Physical location
  - System awareness and accuracy
- How is it achieved?
- Real-time
  - Delay task generation
  - Instantly update ERP
- Rule-based
  - Consider capacity
  - Consider weight
  - Consider assignments

## Effective Warehouse Management in Numbers

- Scenario: two types of inventory – high use and low use



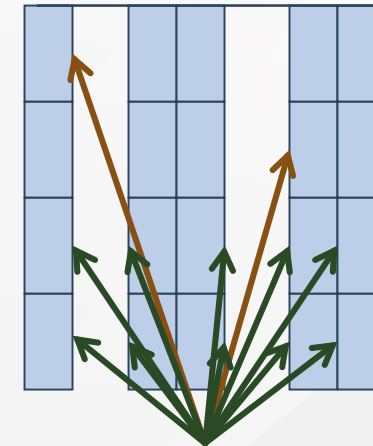
PROD

RECV

Low use average distance = 30m

High use average distance = 30m

Total distance = 360m



PROD

RECV

Low use average distance = 45m

High use average distance = 15m

Total distance = 240m

33% Reduction!

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# Overview

# Inventory and Warehouse Management Levels





## Standard Automation Solutions

- Covers all inventory activity
- Provides suggestions via 'lookup'
  - Locations
  - License plates
  - Lot numbers
- Full inventory management
  - Transferring
  - Cycle counting and physical inventory
  - Packaging
  - Label printing

Inbound

Inventory

Production

Outbound

## Warehouse Extension – Base

- New system organization
  - Adds layout levels to organize inventory movement
  - Relates items to organizational levels
  - Provides basic capacity and utilization measurement
- New QAD Automation Solutions transactions
  - Directed putaway based on item-layout connections, present capacity
  - Picking with travel sequence intelligence

## Warehouse Extension – Advanced

- New system organization
  - Base layout (scalable!!) with more complex capacity
  - Material routing and business rules
  - Event and task management
  - Space, inventory and labor metrics
- New task-driven QAD Automation Solutions transactions
  - Putaway → runs dynamically or on pre-existing tasks
  - Replenishment → min/max (for pick face) and production
  - Picking → management-defined priorities (FIFO, FEFO, full, partial, etc.)

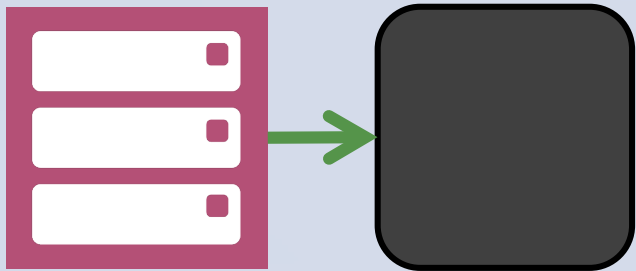
# Warehouse Extension – Integrations and Interfaces

## Production Execution

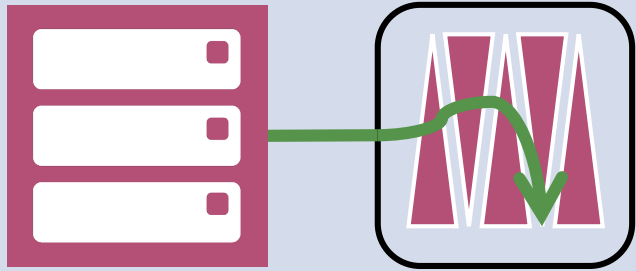


Component	Order	Decrement	Pick Qty Requested	Increment	Pending Requests	Work Center QCN	Gross Required	Location Availability	Component Status
50100 Milled Pin	2502574	-	3	+	0	4	110	General	Available
50200 Large Bushing	2502574	-	1	+	0	454	110	Backflsh	Available
50201 Small Bushing	2502574	-	0	+	0	854	110	Backflsh	Available
503014 Gear End Cap	2502574	-	1	+	0	344	110	Backflsh	Available

## ASRS (black box)



## ASRS (full control)



# Warehouse Extension Comparison

Base	Advanced
Layout and simple capacity	Layout and robust capacity
Item-layout associations	Item-layout associations
	Material routing and algorithms
	Request programs
	Event/task status, history, metrics
	<b><i>Integrations and Interfaces</i></b>

# Advanced Example: Dynamic Putaway

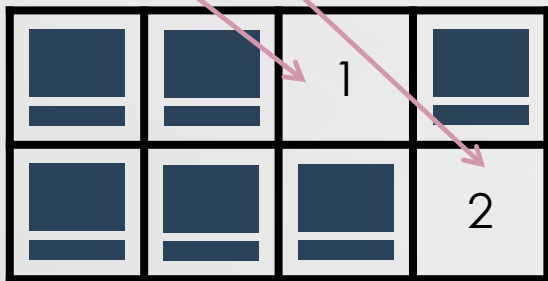
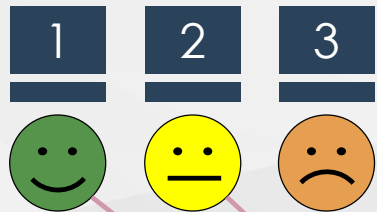
**We need a volunteer!**  
(selection process demonstrates algorithms)

## Preferences:

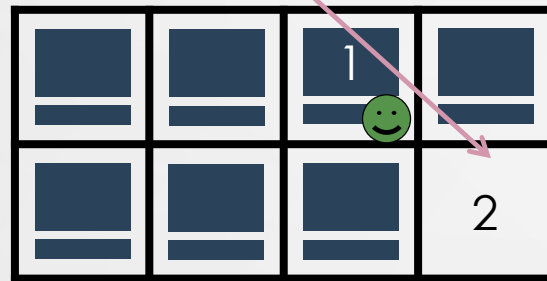
1. Warehouse Manager
2. Plant Manager
3. Any brave IT folks?
4. OK... anybody with a pulse?

# Advanced Example: Dynamic Putaway

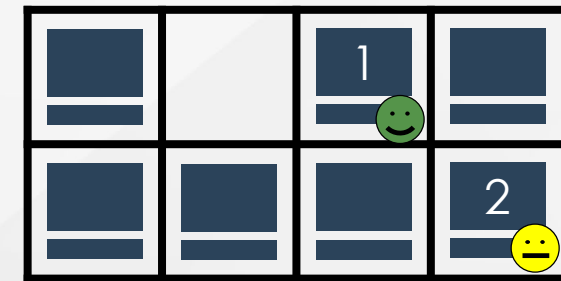
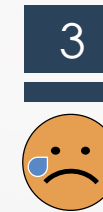
- Scenario 1: traditional task generation



10:00am



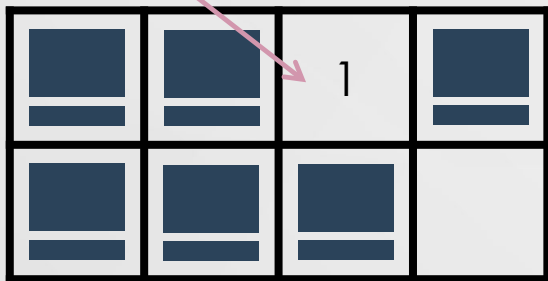
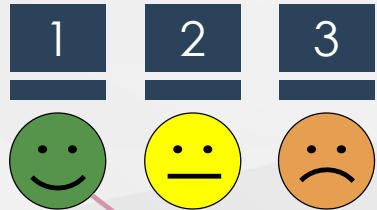
10:02am



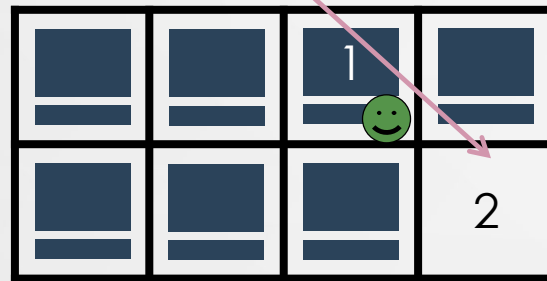
10:05am

# Advanced Example: Dynamic Putaway

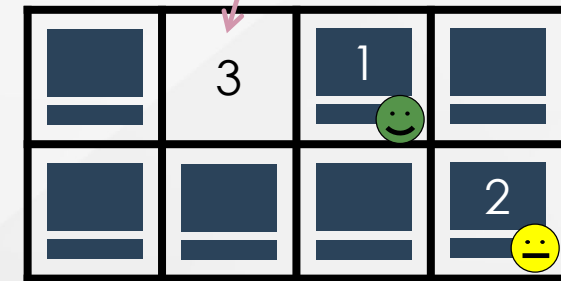
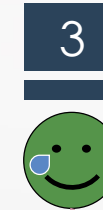
- Scenario 2: dynamic task generation



10:00am



10:02am



10:05am



## Advanced Example: Dynamic Putaway

- Thank you, volunteer!
- What did we learn?
  - Dynamic putaway empowers you to optimize space
  - Intelligent putaway → efficient picking → effective management

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# Use Cases

## Use Cases

- What have we done so far?
  - 30+ sites live
  - NA, EMEA, APAC represented
  - Several in-process
- Use cases cover examples of advanced version value
  - Enabling upgrade
  - Reducing risk
  - Driven from production
  - Controlling machines

## Use Case: System Upgrades

### Business Case

- Upgrading 3-shift site to modern QAD version with goal of using standard functionality

### Warehouse Scope

- Advanced version, ASRS integrations

### Value Statement

- Getting up-to-date and staying up-to-date

### Additional Benefits

- Serialization, Production Orders, Item Attributes

## Use Case: Risk Reduction

### Business Case

- In-house system grew over 20 years; only support resource approaching retirement

### Warehouse Scope

- Advanced version

### Value Statement

- Solving business problems while ensuring long-term support

### Additional Benefits

- Serialization, Production Orders

## Use Case: Production-Driven

### Business Case

- Changing ERP systems and managing limited space in production

### Warehouse Scope

- As-needed replenishment driven from live order progress in Production Execution

### Value Statement

- Single system using advanced technologies to improve operations

### Additional Benefits

- Serialization, Production Orders

## Use Case: Advanced Controls

### Business Case

- Outdated crane and conveyor control system posed risk to business

### Warehouse Scope

- Advanced version, ASRS control

### Value Statement

- Maintaining expensive warehousing equipment with 21<sup>st</sup> century technology

### Additional Benefits

- Serialization, Production Orders

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# Summary



## Summary

Covers simple, moderate, and complex



Enables new benefits of QAD



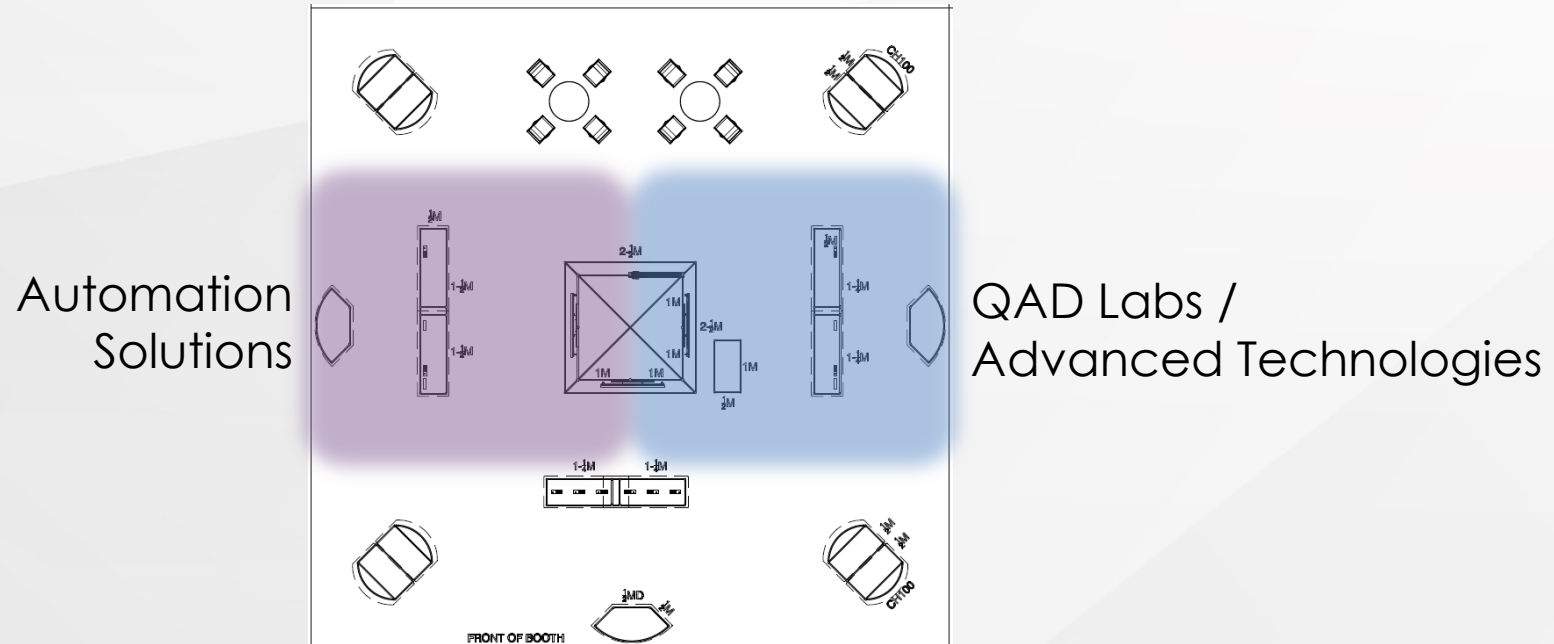
Connects with Advanced Technologies



Improves warehouse operations

## Next Steps

- Find us at the demo booth



- Improve your warehouse and inventory management!

## Highlighted Sessions

**Yanfeng Implementation of  
QAD Automation Solutions  
and Integration**

**Lucian Manolache, YFAI  
Waseemuddin Safiri, QAD  
Wednesday 3:00 PM - 4:00 PM  
Rhythms 2/3**

**QAD Automation Solutions  
Expansion and  
Enhancements**

**Michael Ochi, QAD  
Thursday 11:00 AM - 12:00 PM  
Rhythms 2/3**

# Questions and Answers



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**Thank You!**

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