ON THE MOVE
Webinar Series

FULLY AUTOMATE
MIXED-SKU DEPALLETIZING

STEPHEN DRYER, PRODUCT MANAGER, HONEYWELL ROBOTICS

ERIC HARTY, VICE PRESIDENT, ROBOTIC SOLUTIONS OFFERING, HONEYWELL ROBOTICS

Honeywell
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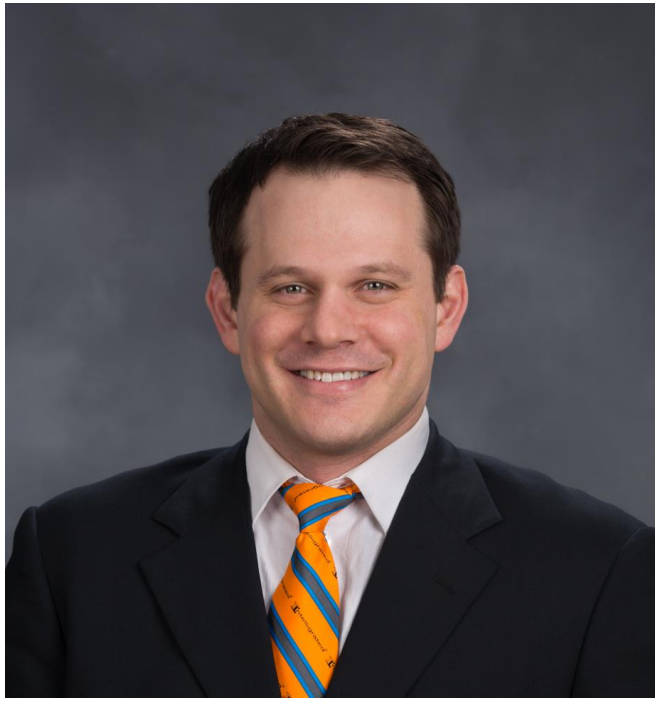
PRESENTERS



Stephen Dryer

Offering Manager, Honeywell Robotics

Since 2016, Stephen has worked as Honeywell Intelligrated's offering manager, where he strives to bring transformative robotics technologies to market and change outcomes through innovation, commercial excellence and attention to customers.

Previously, he worked for nine years as a product manager in the machine vision industry, primarily serving companies producing fast-moving consumer goods – ensuring quality control through vision inspection. There, he collaborated with various company departments to help prioritize product development, including new service products. Stephen also worked for five years as a mechanical engineer in the fluid power industry, where he engaged in all phases of product development, from initial concept through to production.

Stephen earned a bachelor's degree in bio-medical engineering from Washington University in St. Louis and is working towards his MBA at Williams College of Business at Xavier University.

PRESENTERS

Eric Harty

Vice President, Robotic Solutions Offering,
Honeywell Robotics

Eric brings more than 15 years of international experience to Honeywell Intelligrated, with a strategy and marketing background in developed and emerging markets. In his current role, he is responsible for developing and executing the robotics offering, ranging from fixed robotics to mobile robotics in e-commerce, retail, parcel and micro-fulfillment environments.

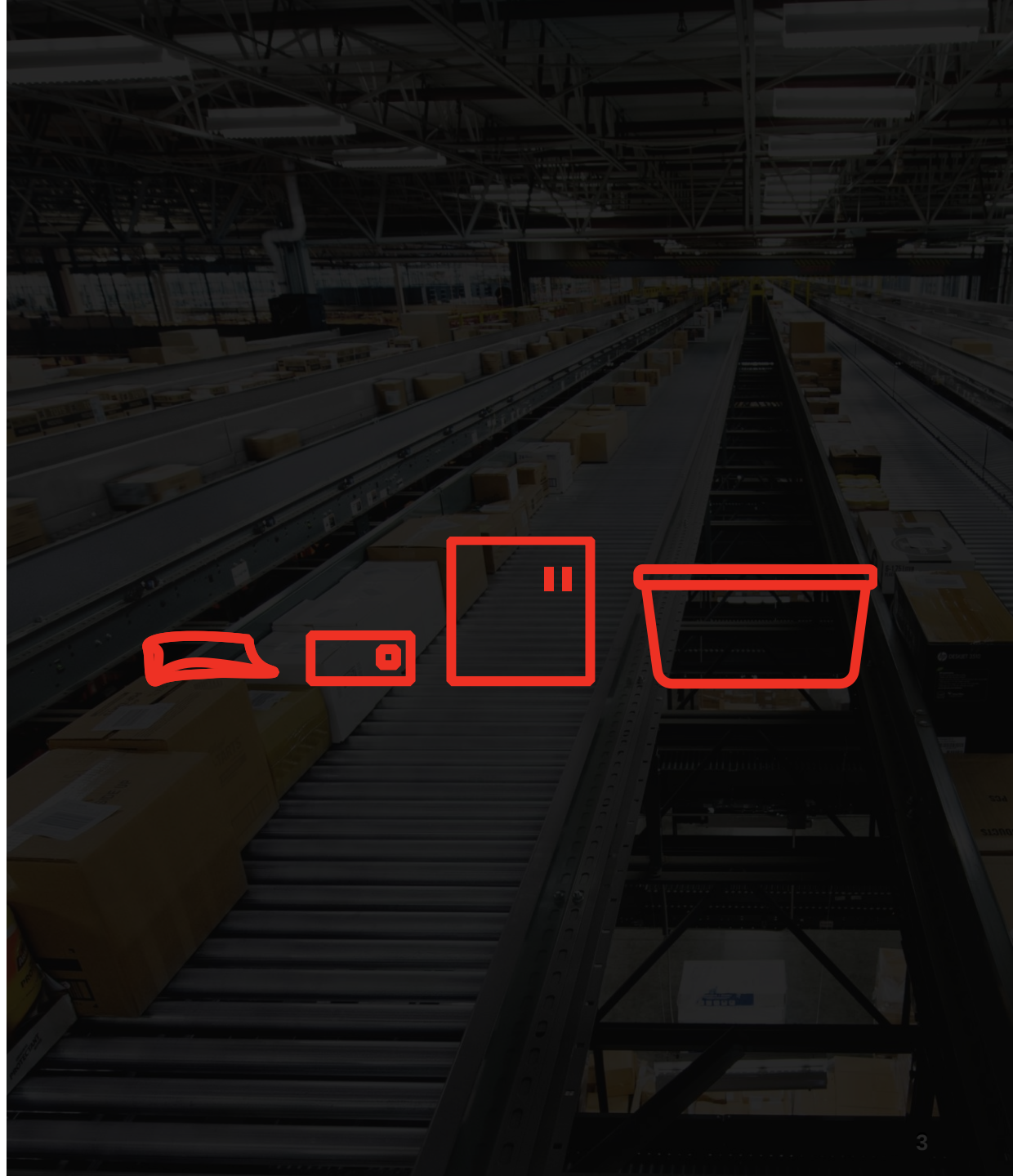
Prior to his current role, he led strategic marketing, developing the company's global growth strategy focused on organic growth through The Connected Distribution Center and robotics, as well as inorganic growth through M&A and venture capital investments. Before joining Honeywell Intelligrated, Eric led strategy and marketing for Honeywell in Turkey and Central Asia. He has previous experience as a strategy consultant at Booz & Company and as director of strategic planning at Siemens.

Eric earned a bachelor's degree in environmental engineering from Tulane University and an MBA from the Ross School of Business at the University of Michigan.

The Challenges:

MIXED-SKU PALLETS

- Common in retail, e-commerce and grocery
- More common as e-commerce grows and SKUs proliferate
- Depalletizing must coordinate with storage, induction or outbound sorting.
- Manual labor typically used for breakdown



The Challenges:

DEMANDING WORK

- Injury-prone
- Inconsistent and limited productivity

The Challenges:

SCARCE LABOR

There aren’t enough workers to meet increasing demands for speed and volume.

The Challenges:

TRADITIONALLY DIFFICULT TO AUTOMATE

- Easier for humans
- Requires dynamic robotic vision perception
- Many solutions require unreliable workarounds with poor support.

POLLING QUESTION

What do you see as the biggest challenge for mixed-SKU depalletizing in your operation?

A. SKU proliferation
B. Demanding work
C. Scarce labor
D. Difficult to automate

The Solution:

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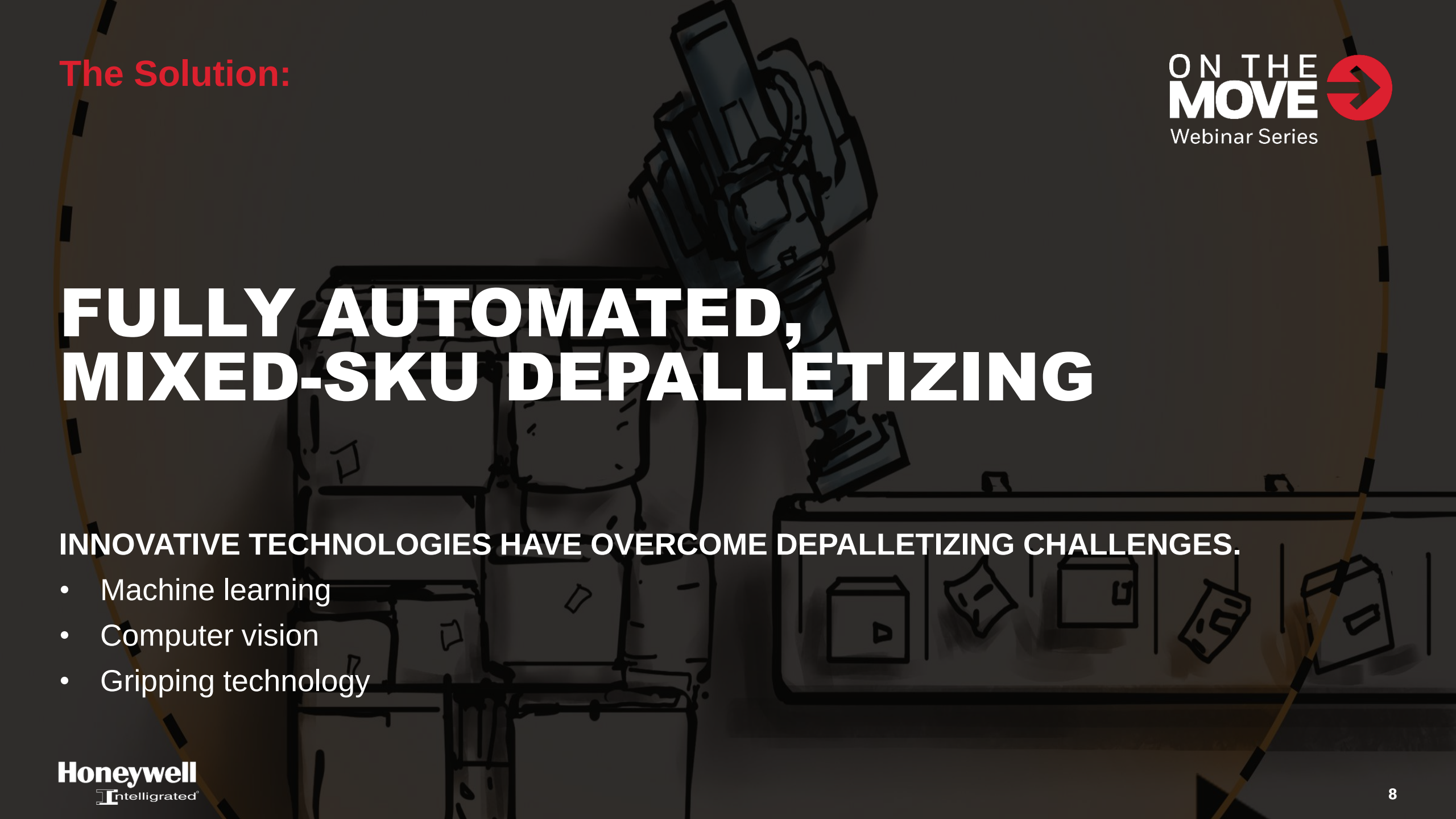
FULLY AUTOMATED, MIXED-SKU DEPALLETIZING



INNOVATIVE TECHNOLOGIES HAVE OVERCOME DEPALLETIZING CHALLENGES.

- Machine learning
- Computer vision
- Gripping technology

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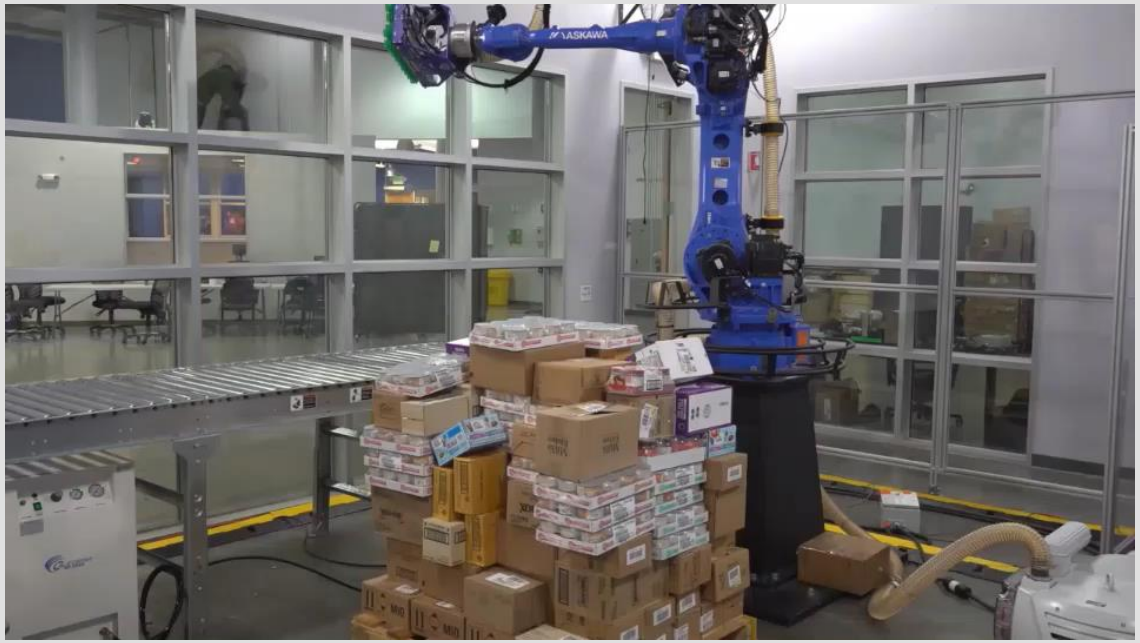


Video courtesy of Boston Dynamics Pick

Benefits:

THROUGHPUT AT LOWER OPERATIONAL COST

- Consistent depalletizing rates
- Reduce labor dependency
- Control labor costs without sacrificing productivity
- RaaS options to move CAPEX budgeting to OPEX

Benefits:

OVERCOME MANUAL HANDLING CHALLENGES

- Labor scarcity
- Reduces worker injuries
- Simplifies management
- Schedule teams more accurately.

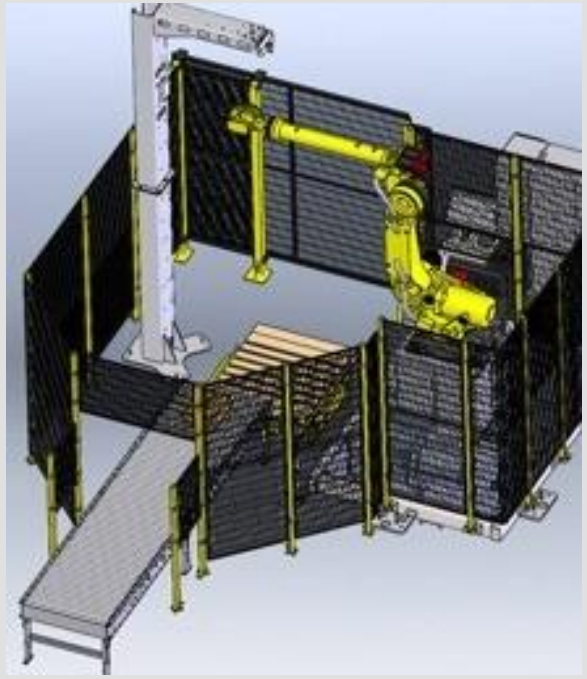
Benefits:

EASY TO DEPLOY AND USE

- Flexible configuration
- Integrates with existing infrastructure
- Turnkey system
- Intuitive user interface

SEEING IS BELIEVING

Computer vision and machine learning enable the robot to identify and pick items from the pallet.

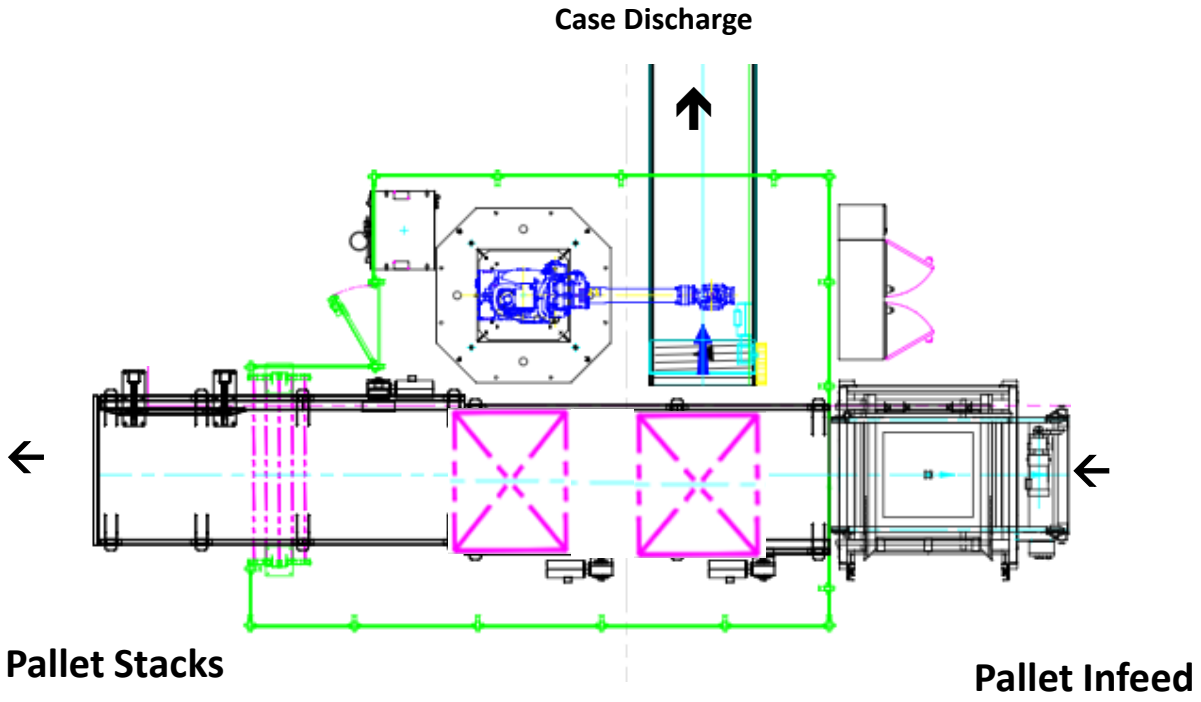


BASIC SYSTEM

- Manual load and unload
- Smallest footprint
- Requires human supervision

FULLY AUTOMATED SYSTEM

- Pallet conveyor keeps the system running.
- Empty pallets can be managed automatically.
- Little or no human interaction



ROBOTICS AS A SERVICE (RaaS) OPTION

An alternate payment model that enables you to capture value over time:

- Lowers CAPEX cost
- Faster ROI
- Enables quicker adoption
- Turns most automation cost from CAPEX to OPEX expense

Conclusion:

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MIXED-SKU DEPALLETIZING IS FINALLY A REALITY.

- Faster throughput
- Lower operational cost
- Overcome manual handling challenges.
- Ease labor burdens.
- Easy to deploy and use
- RaaS options for lower CAPEX cost and faster ROI
- Complete turnkey solution
- World-class service and support

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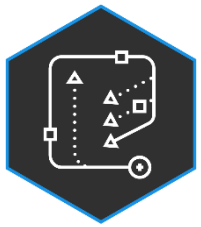
QUESTIONS?



Conveyor & Sortation Systems

Fulfillment Technologies

Lifecycle Support Services

Operations & Solutions Development

Palletizing & Depalletizing

Robotic Solutions

Software Solutions

The Connected Distribution Center