

DC Automation Has Come Of Age

Sponsored by:

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Disruptive Change: The Rise of eCommerce

⚡ *Projecting Ahead*

Forrester Research also reports U.S. consumer e-retail spending is expected to increase **62 percent** by 2016.



2002: \$42B

Distribution is Essential to Success

amazon

The Amazon logo, featuring the word "amazon" in a bold, black, lowercase sans-serif font. Below the text is a yellow curved arrow that starts under the letter 'a' and points to the right, ending under the letter 'n'.

eCommerce Impacts and Trends

Omni-channel
Price Pressures
More Each Picking Showrooming
Smaller Order Size 24/7/365 Commerce
Increased Safety Stock
Ship from Store Changing Order Profiles
Cross-Channel Shopping More Reverse Logistics
Same day delivery More frequent orders
Overnight Delivery
More Markdowns Free Shipping
SKU Proliferation Smaller Stores
Bigger DCs International

eCommerce Driving Complexity

Right Product

Right Place

Right Time

Right Cost

Distribution is Becoming More Complex

The Case for Automation Has Changed

IT IS

- Accuracy
- Labor
- Speed

IT'S ALSO

- Incremental Revenue
- Customer Service
- Inventory Management
- Damages & Returns
- Safety Improvement
- Space Utilization
- Flexibility

Store Friendly Deliveries

Retailers in Europe are moving more towards shelf ready displays to improve restocking speeds and reduce store labor

Tray and Dolly displays



Nestable Carts



Robotic Palletizers
For Store Ready
Stocking



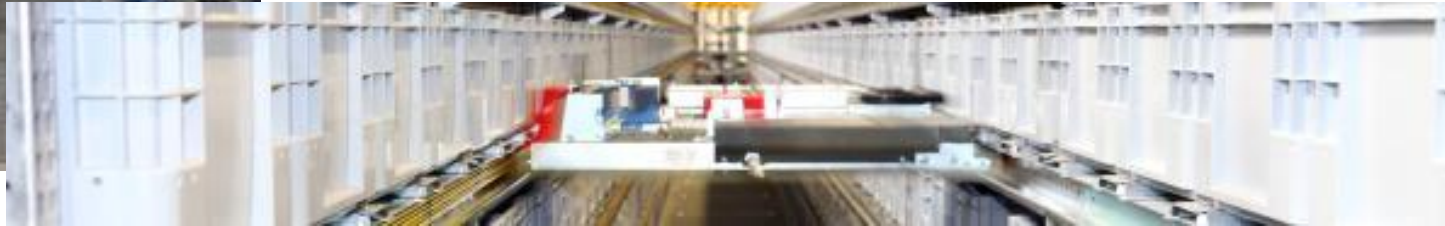
Partial/Full pallet
floor displays



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High-rate Shuttle ASRS

High-rate systems for totes or cartons that utilize multiple shuttles



Goods-to-Person Order Fulfillment

Goods-to-Person picking stations improve ergonomics and picker efficiencies by reducing walk time and moves



Combining Technologies
**Goods-to-Person picking station
combined with carts**

Unit Load ASRS



Multi Deep Pallet ASRS

- Able to reduce cost of cranes

Benefits

- Reduced number of cranes
- High pallet density
- Smaller foot print

Rail Based Aisle Changing SRM

- Crane is rail guided

Benefits

- Aisle configuration is typically same as a VNA system or slightly less
- Higher throughput rates than non rail system
- Less concerns with floor flatness
- Proven technology

Vertical Lift Modules

- High Density Vertical Storage
- Trays independently delivered operators
- Reduces walking time
- Units configurable in multiple unit pods
- Access to product in emergencies
- Floor space savings by using the vertical space (units up to 50 feet tall)
- Throughputs in the 400-500 lines per hour range
- Storage capacities in excess of 80,000 lbs
- Multiple operator access stations available (vertically)
- Safe operation



Self-Propelled Robotic & Automatic Pallet Wrappers

Self-Propelled Robotic Pallet Wrappers



Automatic Pallet Wrappers

Automated Packing & Labeling Solutions



Examples:

- Baggers
- Inline Scales
- Air Pillow Systems
- Sealing Machines



Other Technologies

Small Item Order Picking Robots



Pocket Sorter



Ring Sorter



**Hanging Garment
Sorter**

eCommerce Driving Complexity

Right Product

Right Place

Right Time

Right Cost

Distribution is Becoming More Complex

The Business Case for Automation



- Accuracy
- Service
- Speed (Cycle Time)
- Revenue
- Safety
- Flexibility



- Labor
- Waste
- Inventory
- Space
- Shipping costs
- Damages
- Returns

Summary

- eCommerce is driving distribution complexity
- Companies that master distribution as core competency will gain competitive advantage
- One way to solve for complexity is through automation
- Automation can now be justified on more dimensions than just labor, speed and accuracy

For More Information:

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