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Variations on "Put to Order" using a "Put Wall"

Presented by:

Ken Ruehrdanz

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Variations on "Put to Order" using a "Put Wall"

See how "Put to Order" configurations are providing high productivity along with high accuracy for piece picking applications.

Today, "Put to Order" can be designed as a one-to-one workstation or a one-to-many put wall. Also, see how the order packing function can be incorporated into the workstation.

Using case study examples, you will understand how "Put to Order" may be the most appropriate way to "Pick" your orders.

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Top Issues for Piece Picking

Space Utilization

Labor, Ergonomics

Inventory, SKU Growth

Accuracy

Throughput
& Processing Time

Energy, Green,
Transportation Costs

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Activity Profiling

The systematic analysis of the items & orders handled in the DC determines the optimum design & operation

1. Orders per day
2. Daily unit volume
3. Units per order
4. Lines per order
5. Packing sequence
6. Unit cube & cube movement
7. Unit structure
8. Cartons per order
9. Total SKU's
10. % daily SKU's active
11. Order download
12. % volume cross-docked

- Review historical data
- Forecast future activity

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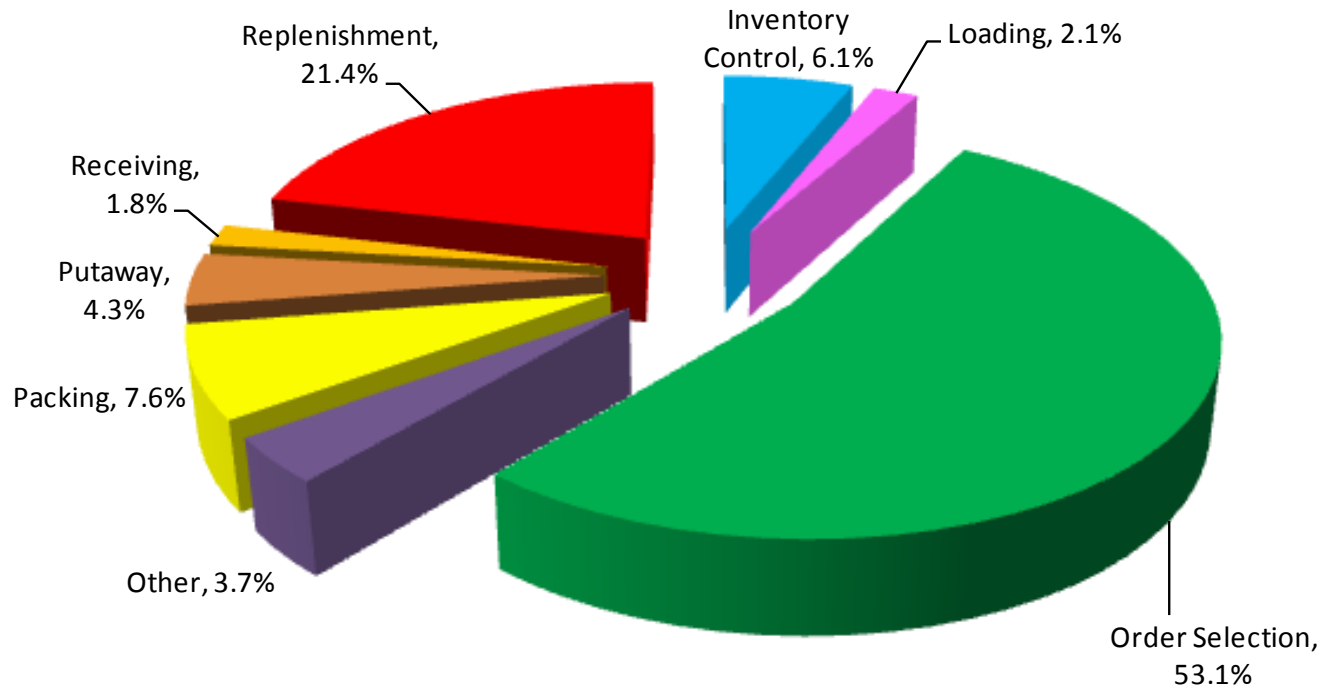promatshow.com
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Business Drivers

- Accommodate spikes in throughput (special promotions, seasonal, etc.)
- Accommodate more SKUs than competitors
- Perform order fulfillment on 1 shift of operation
- Expandability for future growth
- Maximize ergonomic design
- Extend order cut off time
- Initial investment cost
- Manageability
- Total labor
- Accuracy
- Security
- Space
- Speed
- Other

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Labor Hours

Warehouse Split Case Labor Hours by Job Function

Replenishment, 21.4%
Receiving, 1.8%
Putaway, 4.3%
Packing, 7.6%
Other, 3.7%
Inventory Control, 6.1%
Loading, 2.1%
Order Selection, 53.1%

- Order Picking: 50-55% of warehouse labor expense.

- Put-away & Replenishment: 25% of labor expense.

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Piece Picking Solutions

SKUs to Picker

Order Container to Pick Zones

Picker to SKUs

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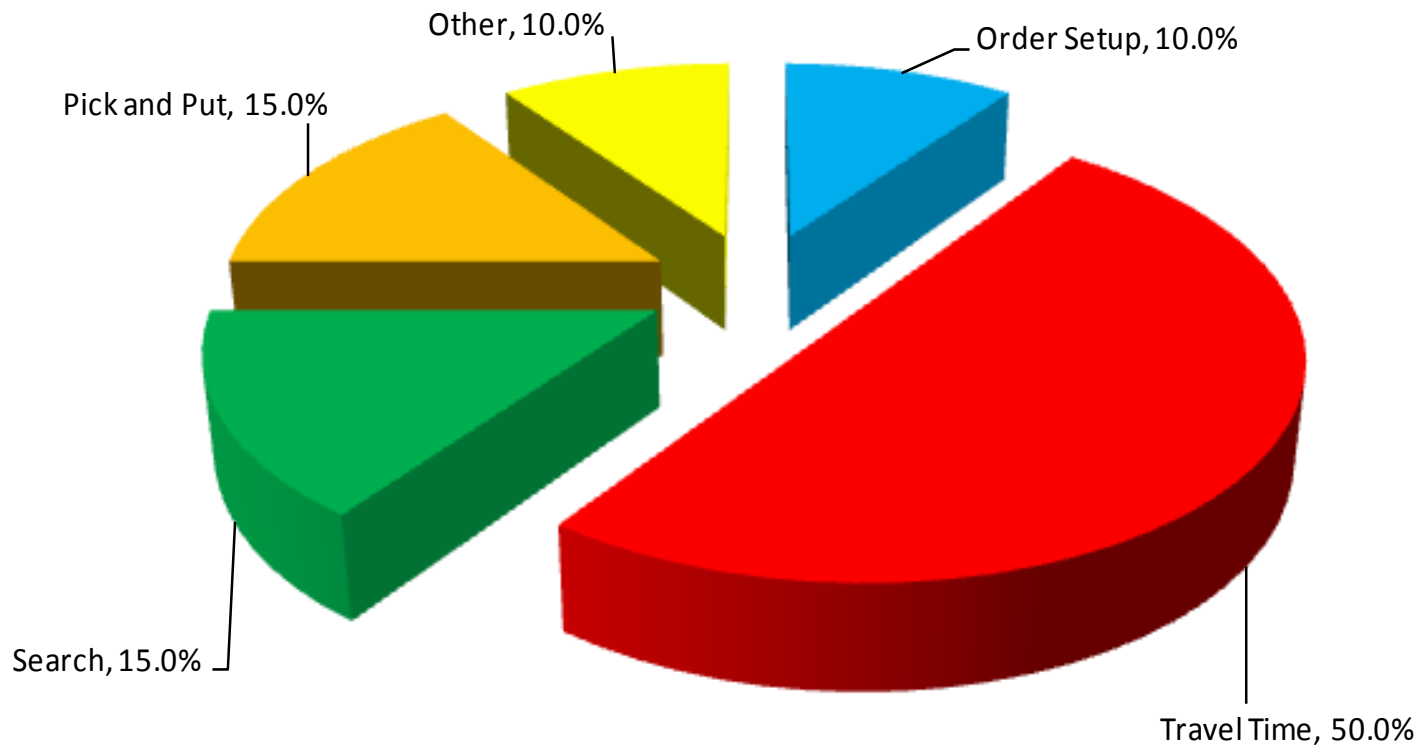promatshow.com
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SKUs to Picker

1. Travel time
2. Omit pick face
3. Omit re-slot
4. Not affected by order profile
5. Accurate
6. Less space
7. Security
8. Optimized replenishment
9. Ergonomic
10. Engineered work stations
11. Speed
12. Productivity
13. Less labor
14. Staff accordingly
15. De-coupled workstations
16. Sequencing

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Order Selection Time Breakdown

Order Selection Time by Activity

Other, 10.0%

Order Setup, 10.0%

Pick and Put, 15.0%

Search, 15.0%

Travel Time, 50.0%

Travel time: 50% of the order selection job function

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Put Wall Applications

- Piece picking
- Direct-to-consumer orders
- Retail store replenishment
- Order consolidation

When to Use

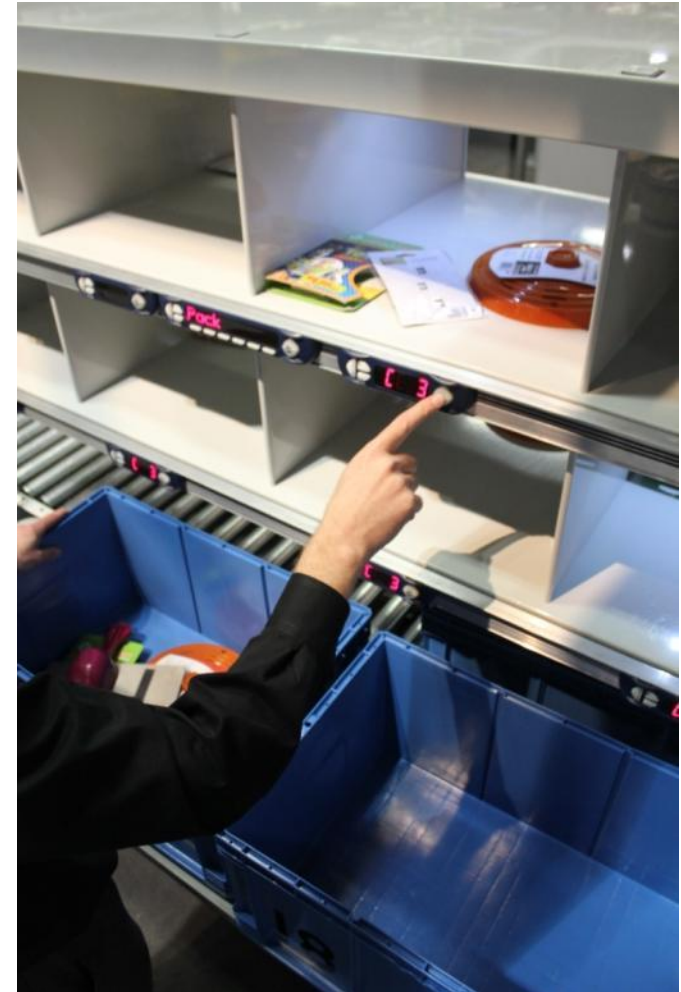- 1000 to 60,000 multi-item orders/day
- Up to 100,000 SKUs
- Single & multi-line orders
- Scalability for peak volume

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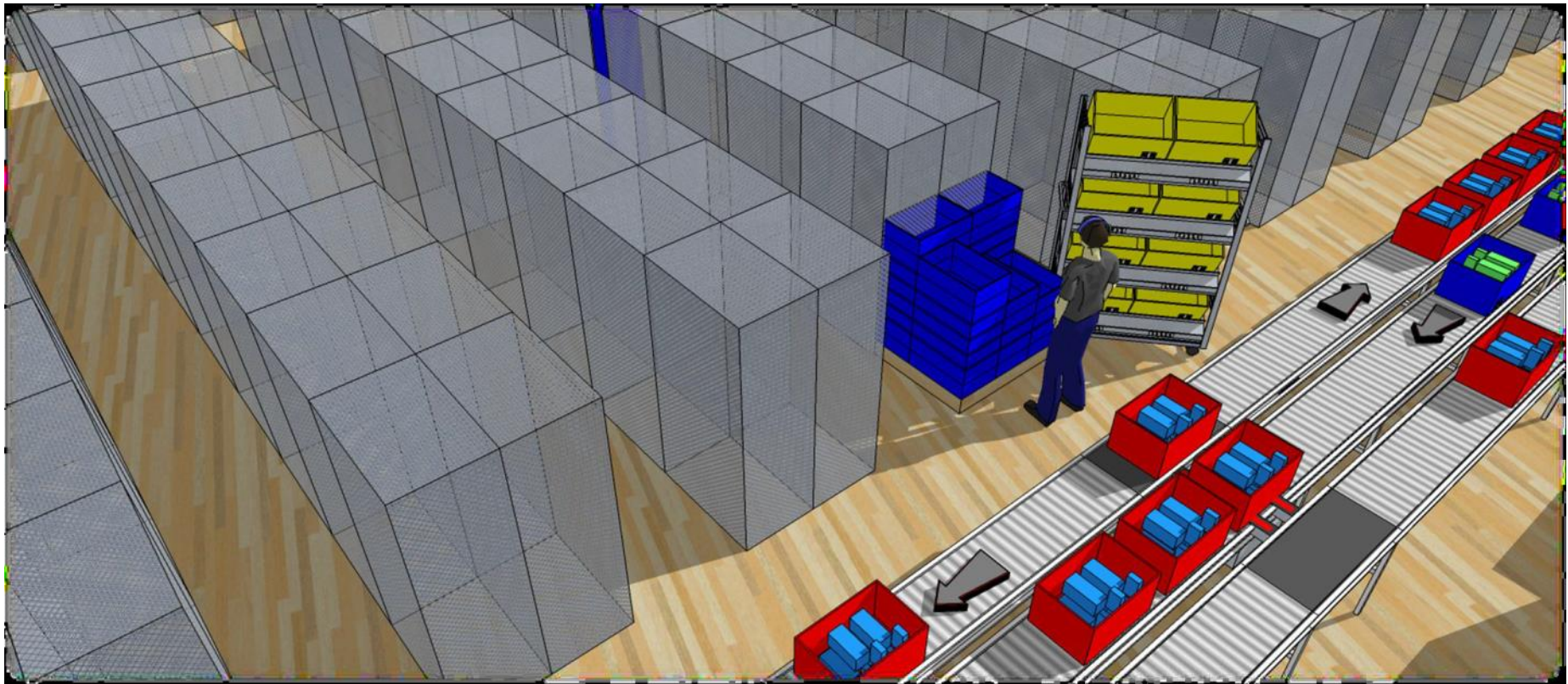promatshow.com
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Additional Capabilities

- Variable vs. fixed compartment sizes
- Rules based batch pick & sequencing engine
- Pull vs. push, put wall planning & tote delivery
- Conveyor delivery of donor totes vs. carts
- Route donor totes to multiple put walls
- Multiple compartments/order
- Light or voice directed

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Batch Pick to Cart

- Voice directed
- Off load to conveyor typical

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Picking Process RF / Paper

Read Next Location	Travel to Location	Scan Location	Read Qty on Screen	Free Hands	Perform Task	Locate Device	Press Buttons to Confirm

Picking Process Voice

Hear Next Location, Travel	Speak Check Digits, Hear Instructions, Perform Task	"Ready"

Elapsed Time

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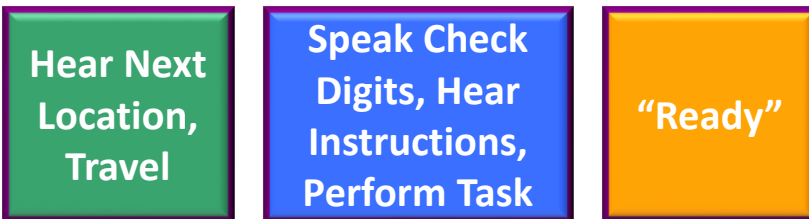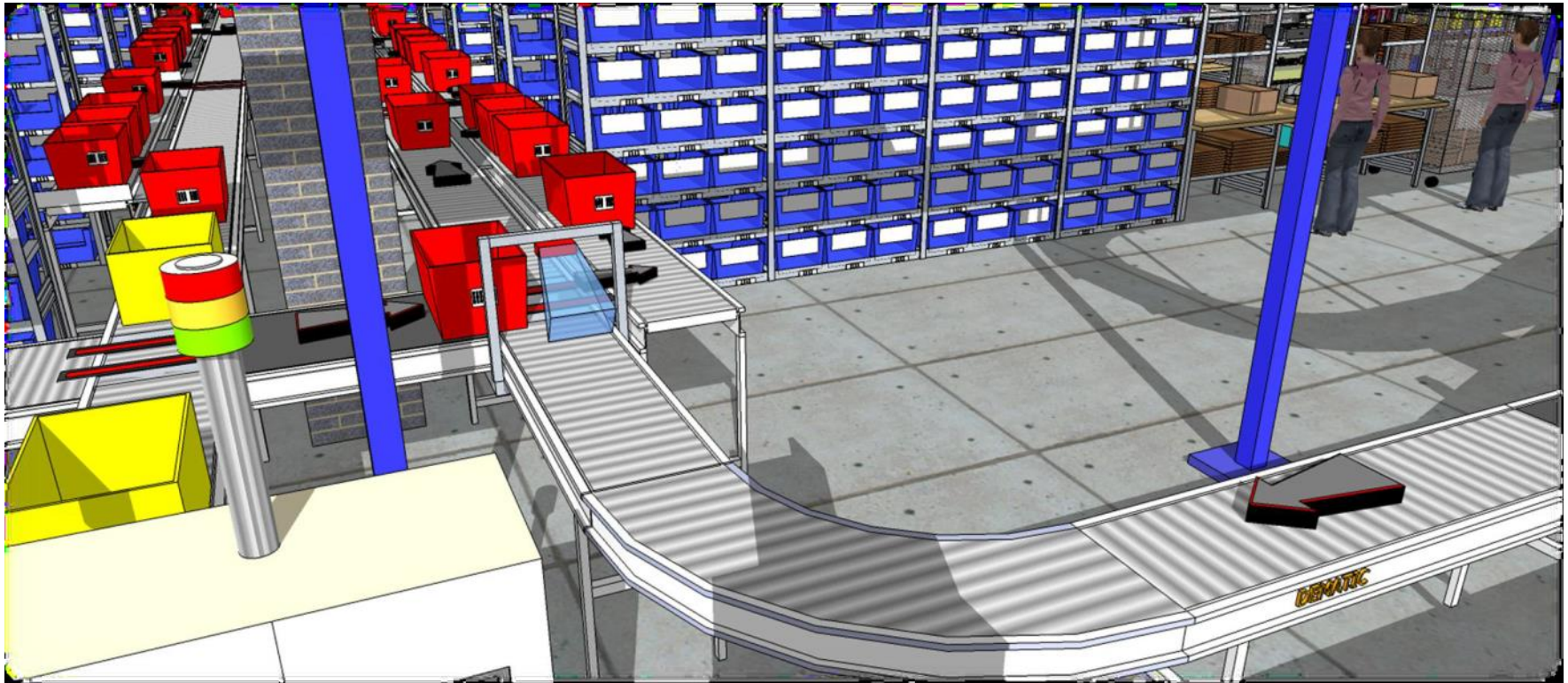
Conveyor Transport to Each Put Wall

- Multi-item totes to one put wall
- SKU pure totes to multiple put walls

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Configurable

- Shelves with totes
- Variable size

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Variable Compartments

6
Non-Con

24

24 Small

18

18 Medium

90 Total Locations

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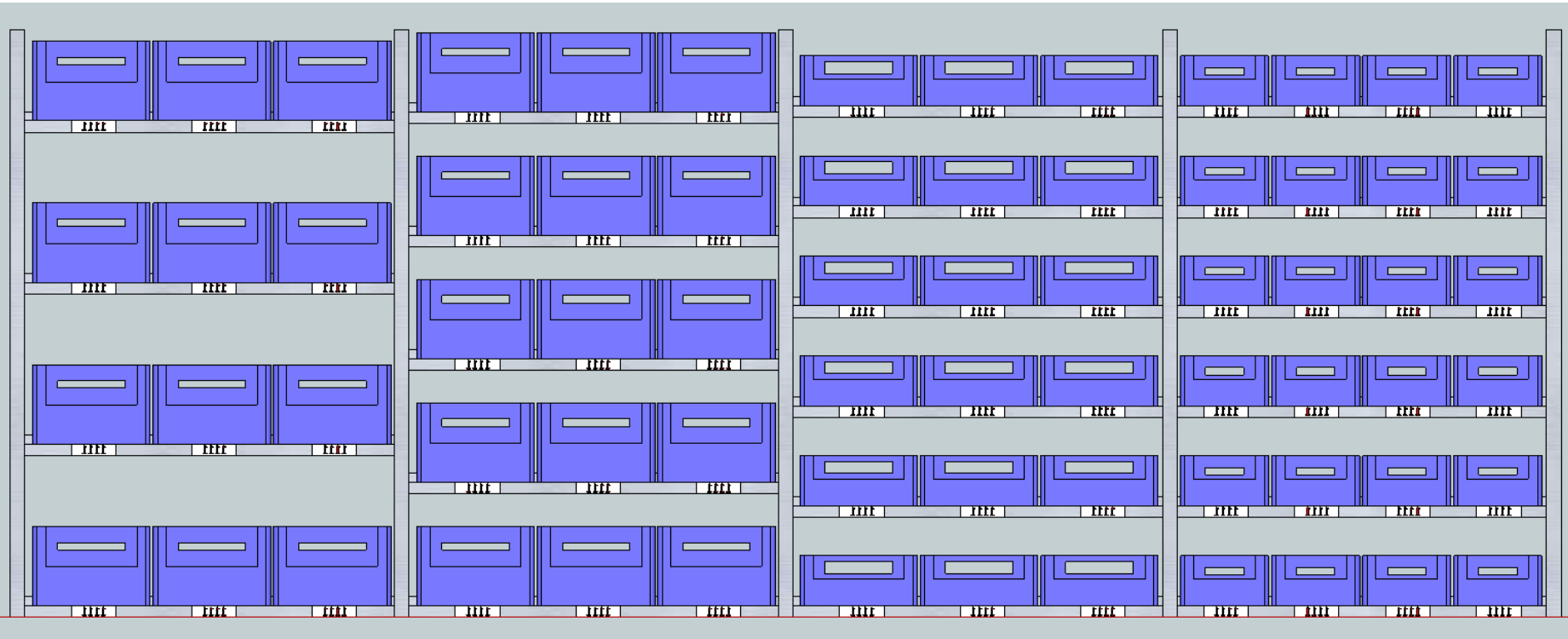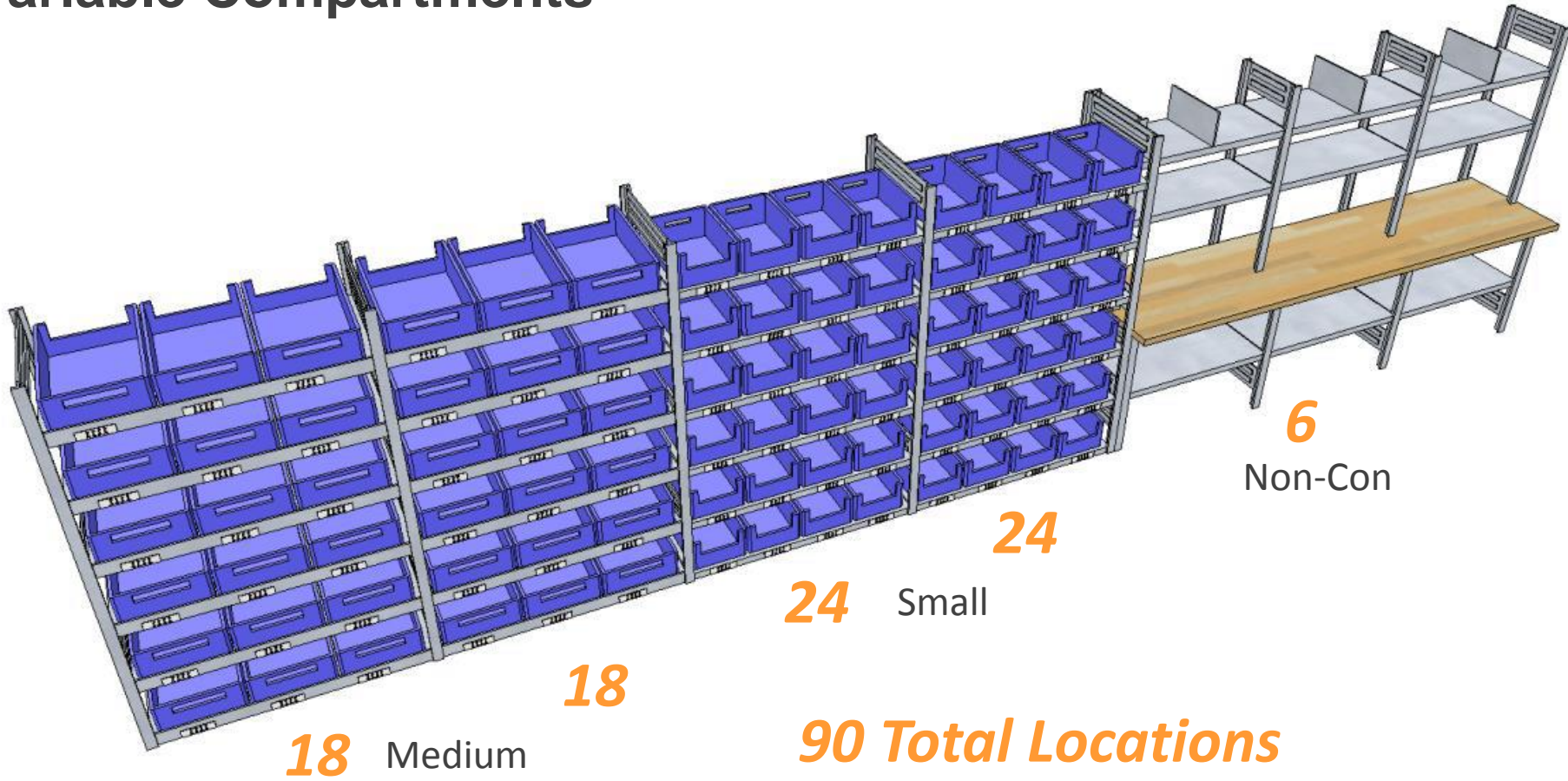
Pack on Back Side

- 1:2 put to pack ratio

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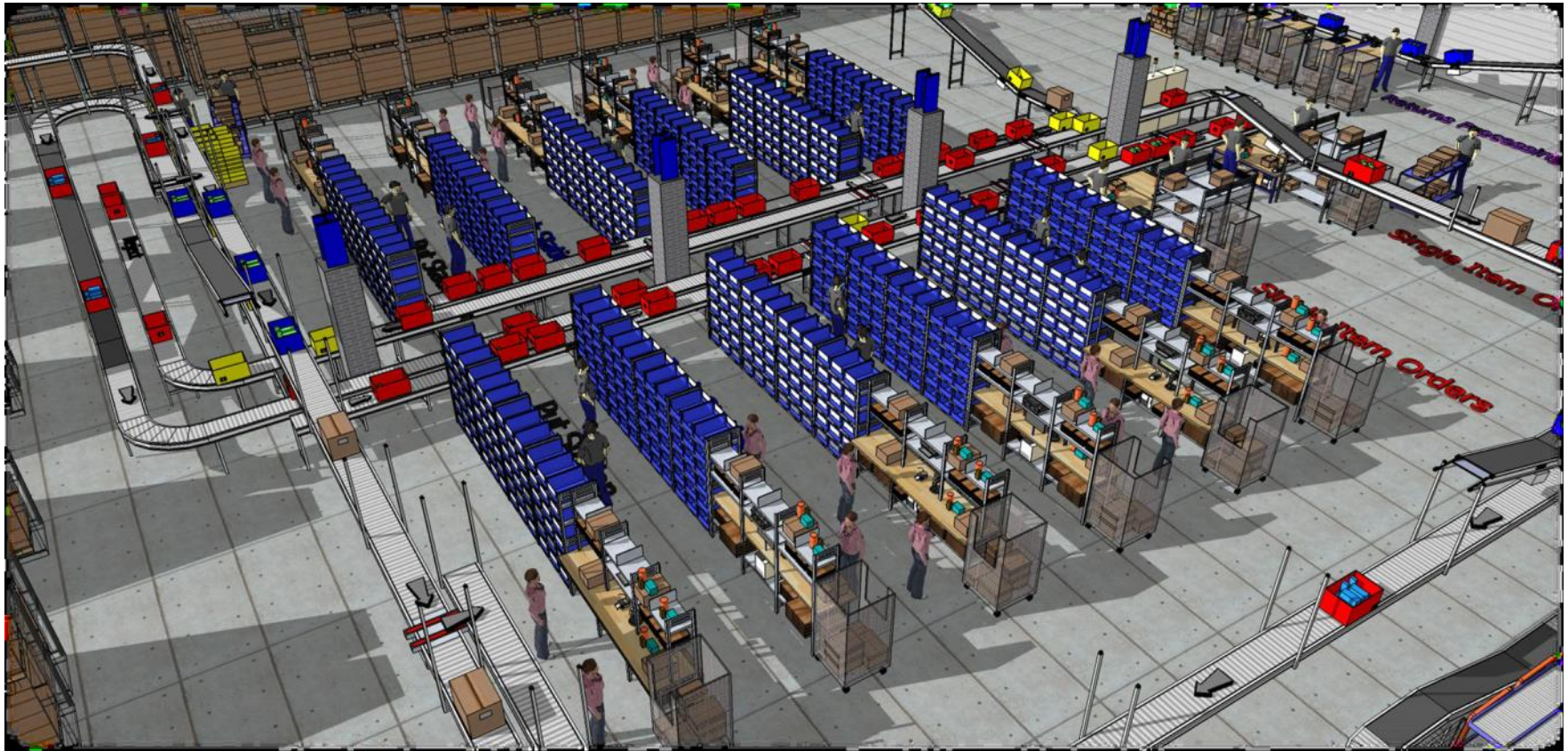
Voice or Light Directed Putting

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Packing

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Variations

- Single SKU container

- Put to compartment

- Put to tote box

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Solution 1
Batch Pick to Put Wall

Solution:
- Voice directed put-away
- Batch pick, voice directed
- Put wall, pack wall for multi-line orders
- Single-line order pack station
- Case sealer, in-line scale, sorter

Results:
- Scalable design for growth
- 5,000 – 50,000 orders/shift capacity
- 200 - 600 reaches per operator/hr
- Pack rate range: 100 – 300 orders/operator/hr
- Flexible for peak volume staffing
- Improved picker efficiency
- Fast turn from order download to shipping

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Batch Pick

- RF or Voice directed picks
- Pick to totes on conveyor
- Or PickCart

Batch Pick to Tote

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Put Wall

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Packing Side of Put Wall

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Put Wall & Packing Side

Put to Order Side   Packing Side

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Solution 2
Batch Pick to Put Wall

- Orders released & grouped into put wall sized batches

- Batches deconstructed into area specific totes

- Totes picked to multi tote pick cart

- Completed totes dropped-off at consolidation area

- Buffered totes for one put wall moved from consolidation to mobile put wall

- Mobile put wall moved to packing

- Packed orders to shipping

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Batch Pick Carts

Pick Aisle

Replen Aisle

Pick Aisle

Replen Aisle

Pick Aisle

Pick Aisle

Replen Aisle

Pick Aisle

Replen Aisle

Pick Aisle

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Batch Picking
Voice Directed

- Optimize picking productivity
- Scan location
- Voice instructions
- Optimized pick paths

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Batch Picking

- 30 order batches
- 9 containers per cart

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Consolidation

- Roughly 10 totes for 90 Items
- One lane = one put wall

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Mobile Put Wall

- 30 compartments/wall
- 3 items/order, typical

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Pack Orders

- Put wall moved to packing

- Pack orders

- Empty put wall returned

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Shipping

- Sort
- By carrier

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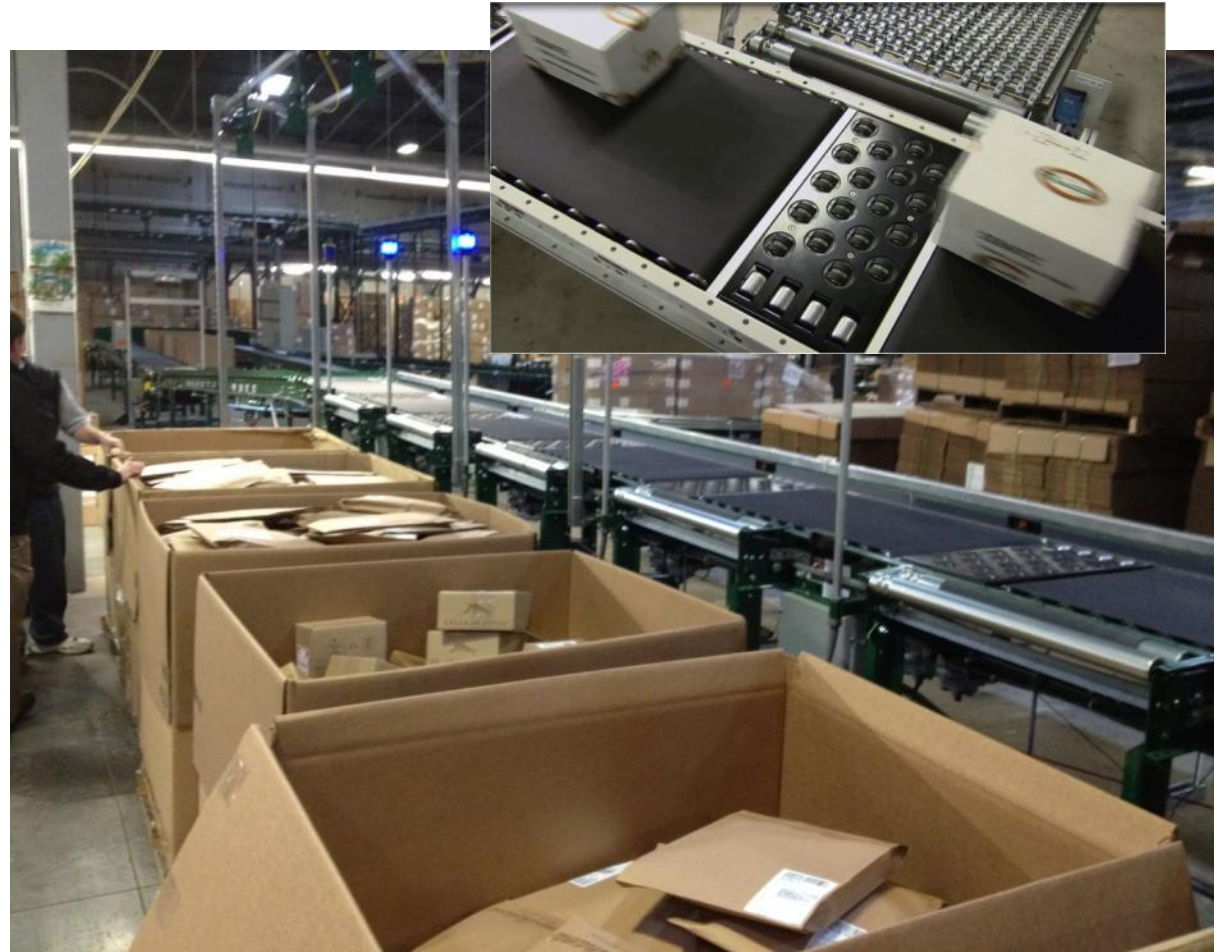
Solution 3
Batch Pick to Put Wall

Solution:
- Multi-channel: e-tail & stores
- Zone route pick system
- Discrete order pick
- Voice directed picking
- Pack stations (tote to shipper)
- Batch pick to put wall

Results:
- e-Com orders: 35,000/day
- Stores: 1500/day
- Real time order tracking
- Replenish during picking

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Batch Pick

- Voice directed
- Pick to blue tote
- Carts and conveyor

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Pack Wall

- Light directed
- Pack materials
- Take away conveyor

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Solution 4
Batch Pick & Put to Store

Solution:

- Conventional storage
- Convey & sort one SKU containers
- Put to store modules
- Label, print, & apply

Results:

- 2500 puts per operator per shift
- Ship every store every day
- Ave. capacity 180,000 items per day
- Capacity 400,000 items per day

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Solution 5
Storage Tote to Put Station

- Put-away, de-cant
- Inventory buffer
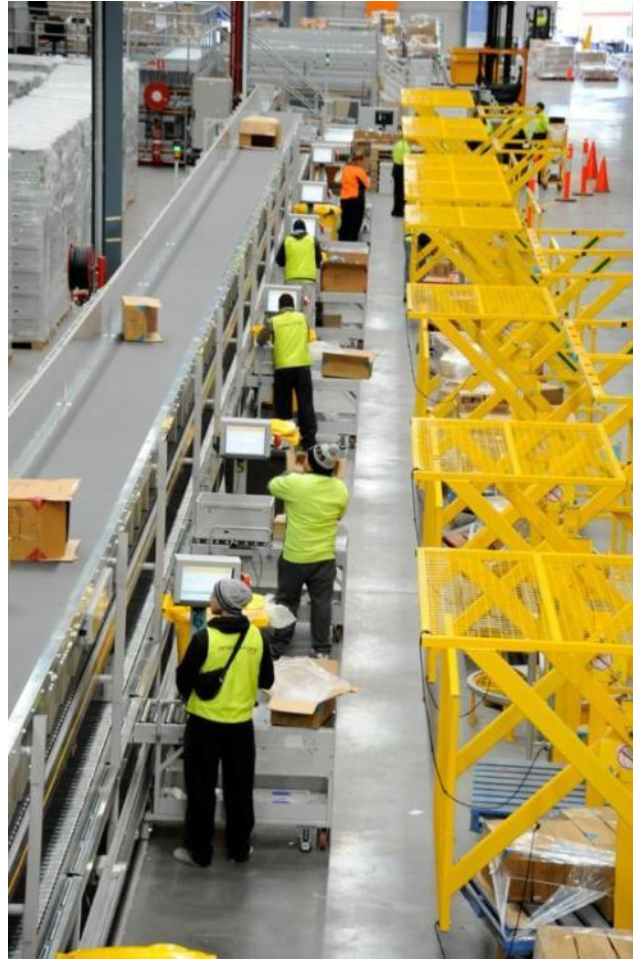- Put to order workstations
- Pack & ship

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Decanting

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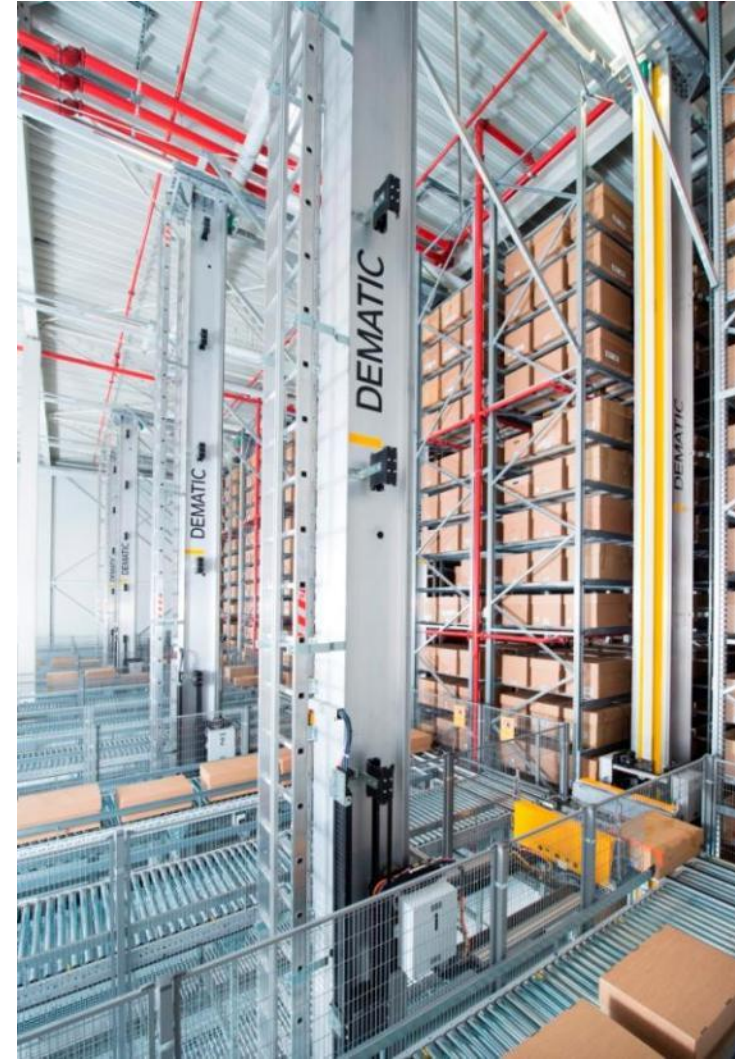March 23-26, 2015
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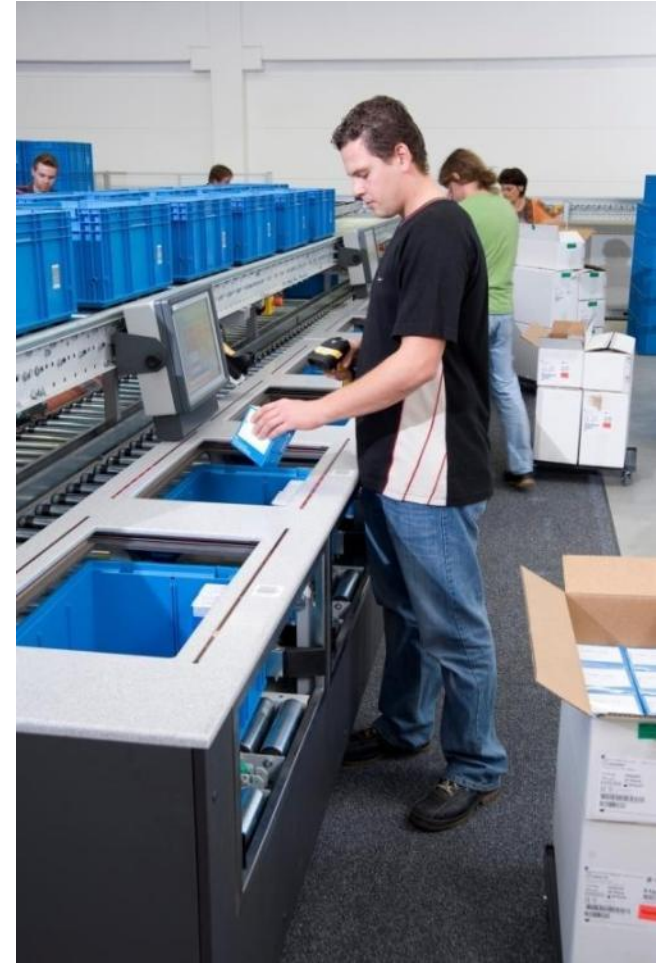
Inventory Buffer

- Automated
- Compact
- Supports SKU to the picker

Shuttle

Miniload

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Put to Order Workstation

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Solution 6

Storage to Put Station

Solution:

- SKU to picker configuration
- High rate "Put to store" stations
- 24 order totes per module
- Light directed, ASRS feed

Results:

- Three fold increase in picking rates
- Capacity to meet peak volumes
- 300 – 350 lines per hour/operator
- Reduction in picking errors
- Real time monitoring of staff
- 35% reduction is cost per case handled

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Solution 7

Storage to Put Station

Solution:

- Decanting
- High density ASRS
- SKUs to picker 2:24

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Solution 8
Storage to Put Station

Solution:
- Consolidate slow moving inventory
- Inventory buffer, miniload ASRS
- Light directed "put" to order stations
- Build store pallets

Results:
- Smaller footprint
- Increased capacity
- Increased labor productivity
- SKU to picker fulfillment
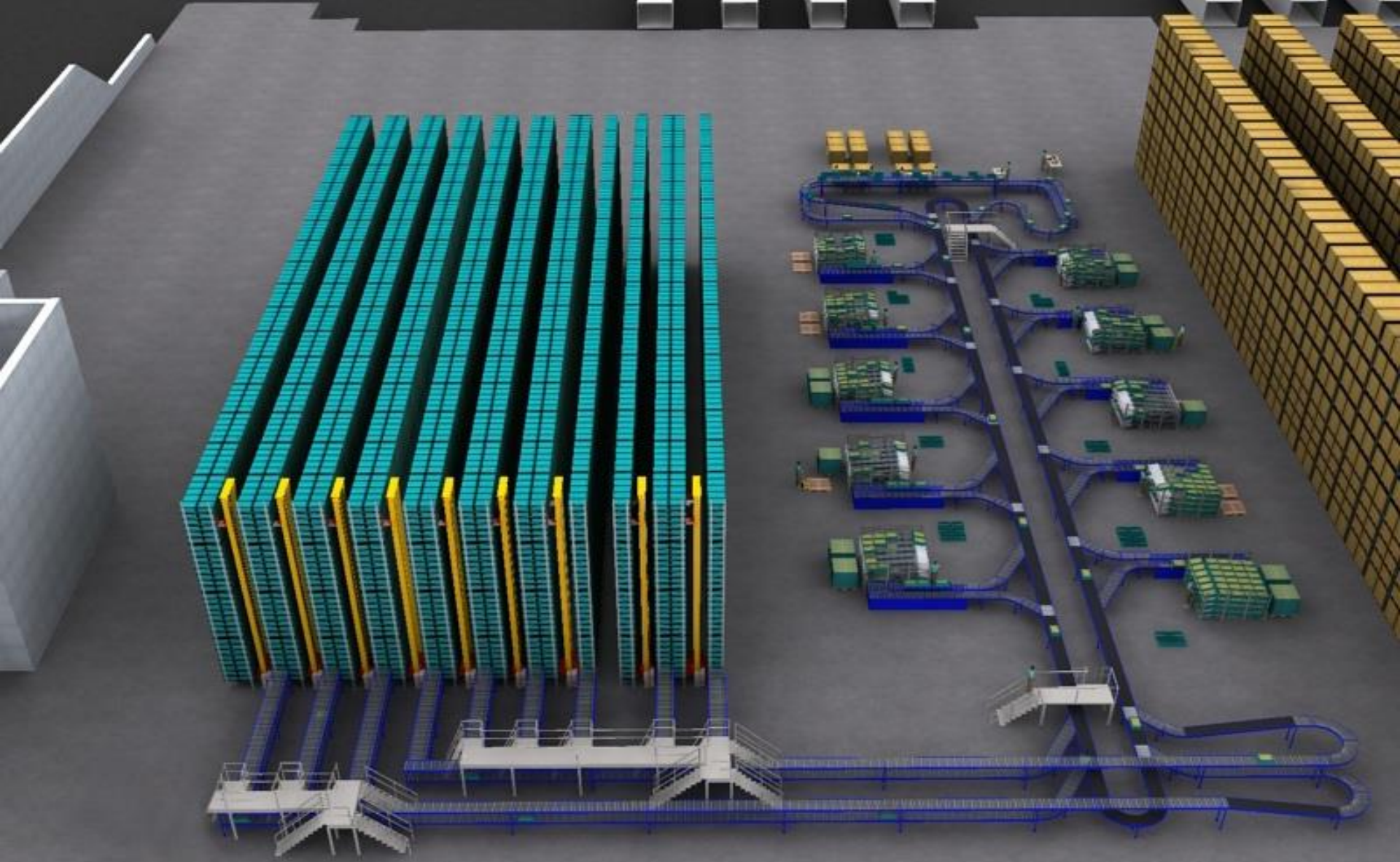- Decant put away
- Store friendly pallets

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Decanting Station

- Operator directed via flat screen
- All inventory into totes
- Automatic flow to ASRS

Decant In Inners/Eaches Only

Case of 12

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Inventory Staging ASRS

- Accommodates 33,000 totes
- 9 aisles
- Connects to "put" stations

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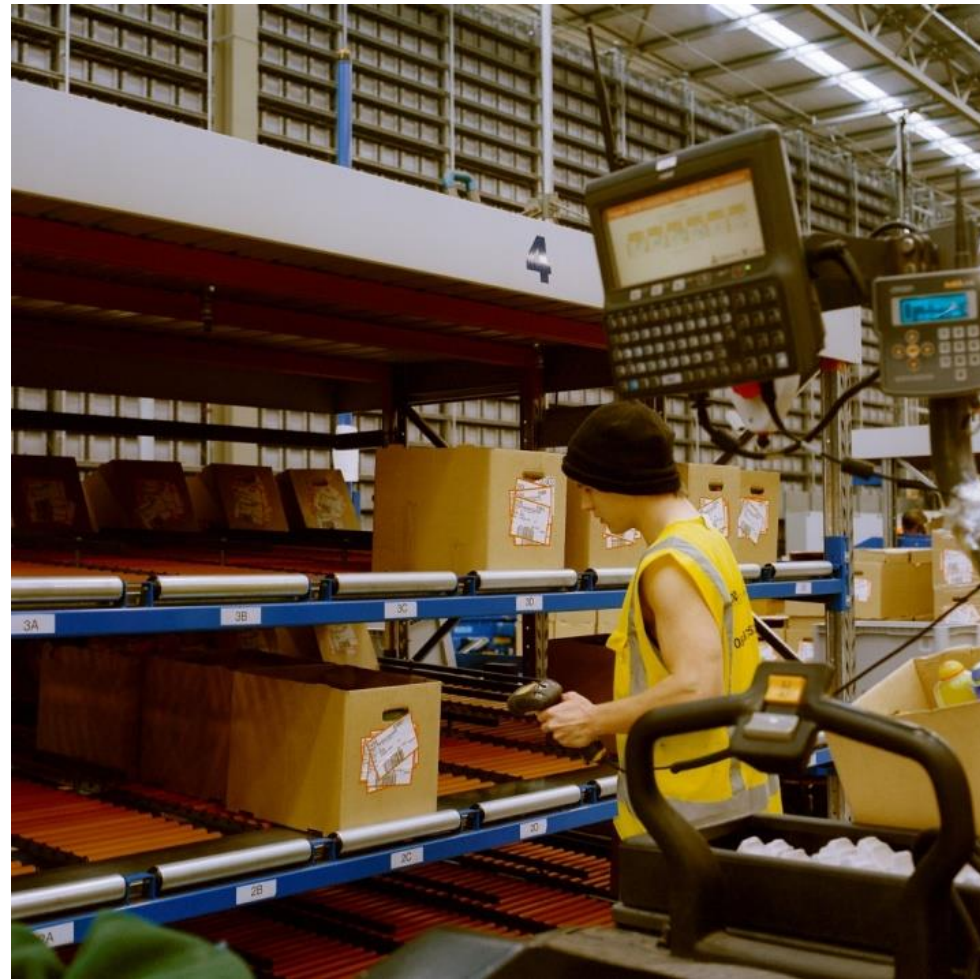March 23-26, 2015
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SKUs to Picker put wall

- Operator directed via flat screen
- Light directed "put"
- Allocate to store container
- Push back when compete
- Flows to rear of workstation
- 21 discrete put locations per station

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Pallet Building
Back Side of Put Station

- RF devices
- Operator removes container
- Places on pallet
- Move pallets to shipping dock

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Final Thoughts

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Speaker email:
kenneth.ruehrdanz@dematic.com

Website: www.dematic.com

Or visit ProMat 2015 Booth 1203