Pick Face Replenishment Strategies

DEMATIC

Presented by:

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Pick Face Replenishment Strategies

Abstract: Learn how to optimize pick face replenishment activities using system solutions built around process improvements, software and automation.

Session Description:

Distribution center designers often focus on solutions for order picking since this function is complex and labor intensive. Meanwhile, the pick face replenishment process may be underperforming in your operation. Replenishment is directly connected to order fulfillment success; there could be many opportunities for improvement. This presentation takes a look at ways to optimize the replenishment process and increase inventory accuracy. It will include a review of replenishment methods/designs, as well as solutions for effectively staging and sequencing inventory prior to order picking.

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Track: transportation, distribution & warehousing

Activity Profiling

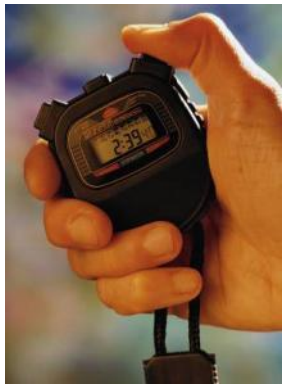
The systematic analysis of the items & orders handled in the DC determines the optimum design & operation

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

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



Top Issues

Space

Labor, Ergonomics

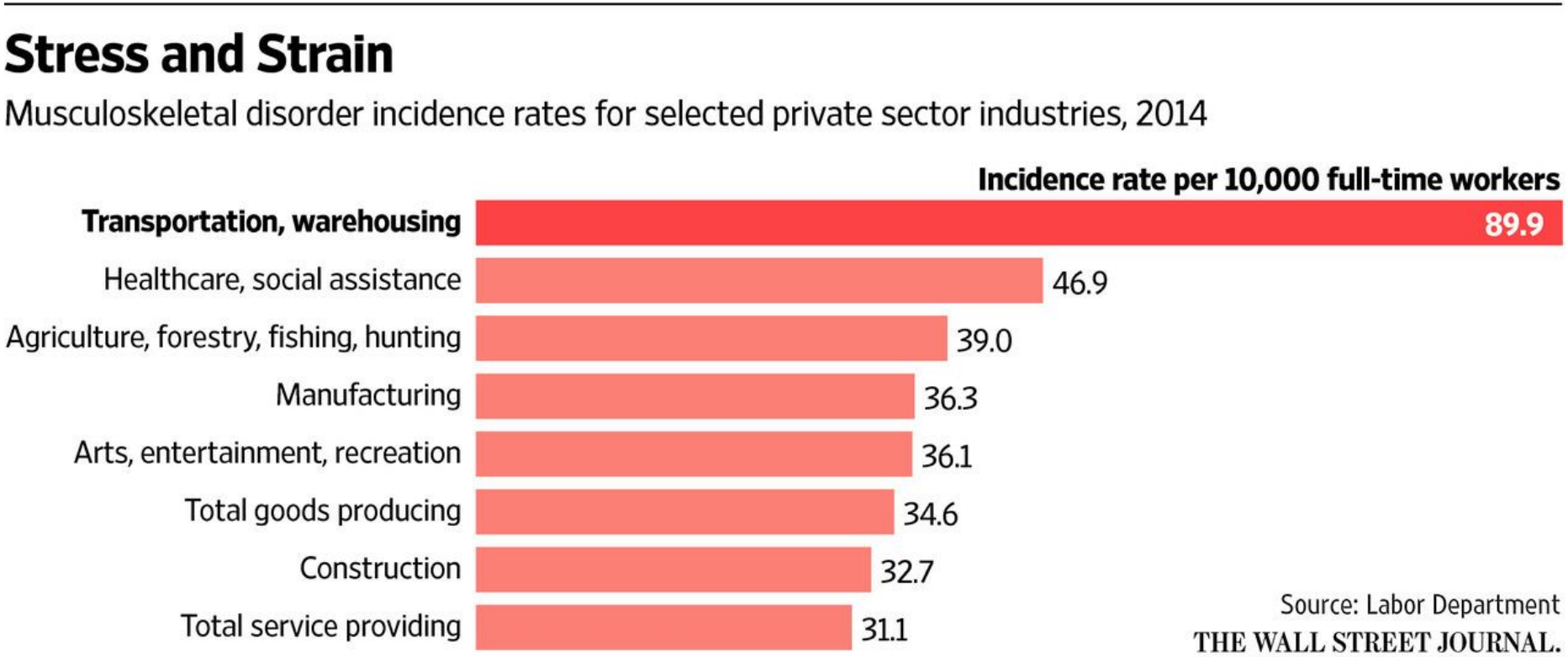
Inventory, SKU Growth

Accuracy

Throughput
& Processing Time

Controlled Access

Labor Department

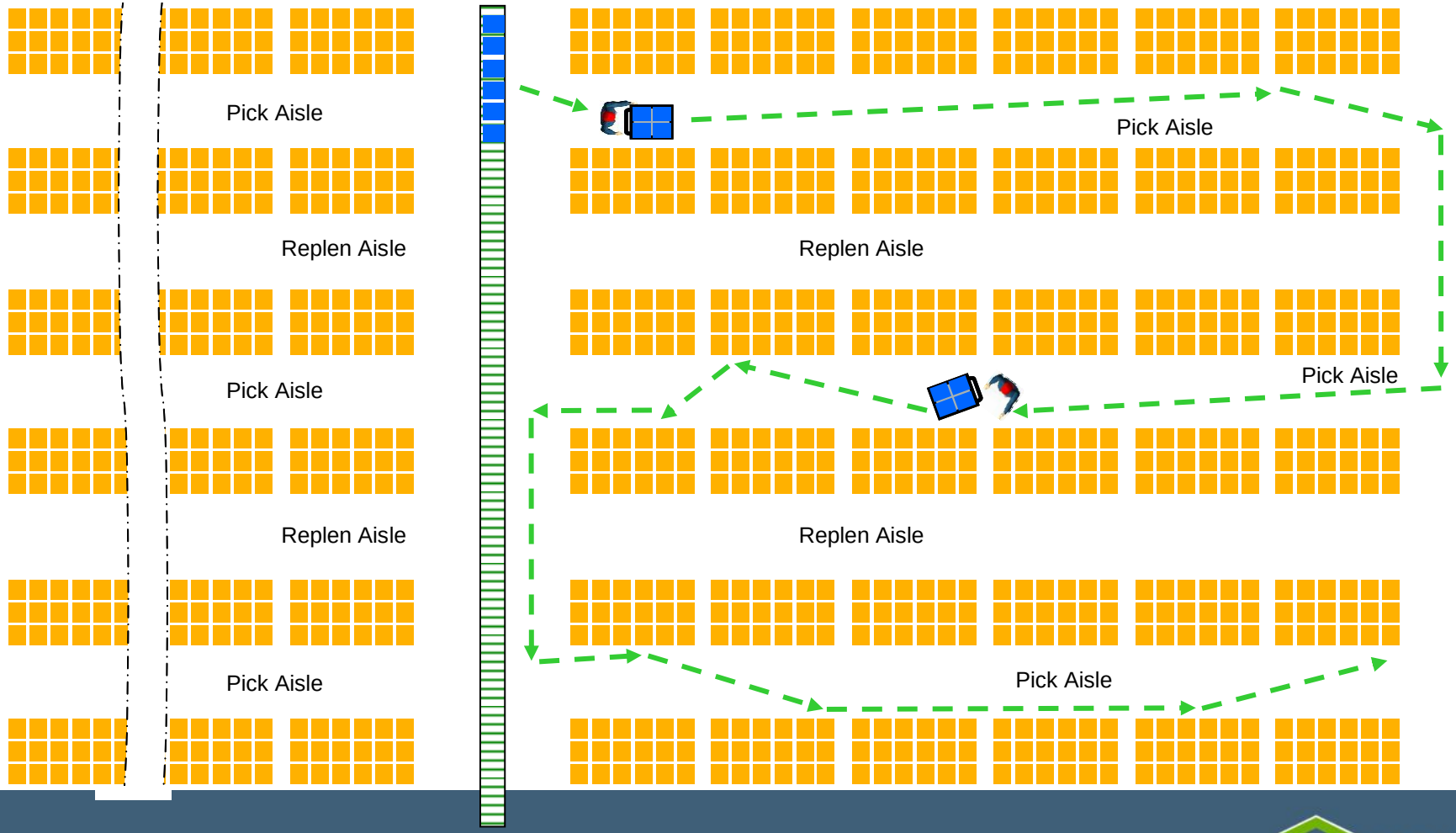


Issues

with Replenishment

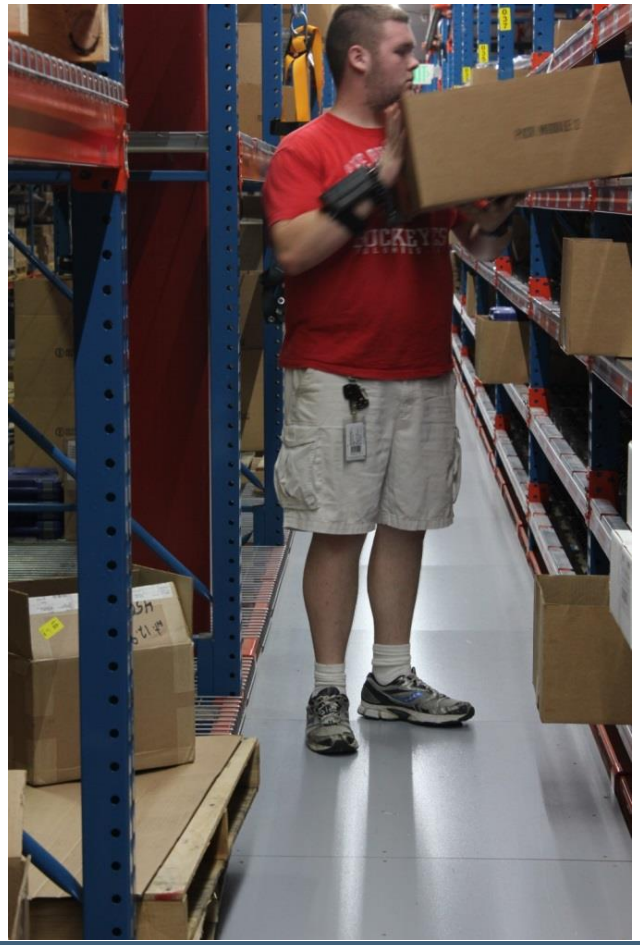
- Space
- Safety
- Accuracy
- Response time
- Labor
- Slotting
- Access

Space: Replenishment Aisles



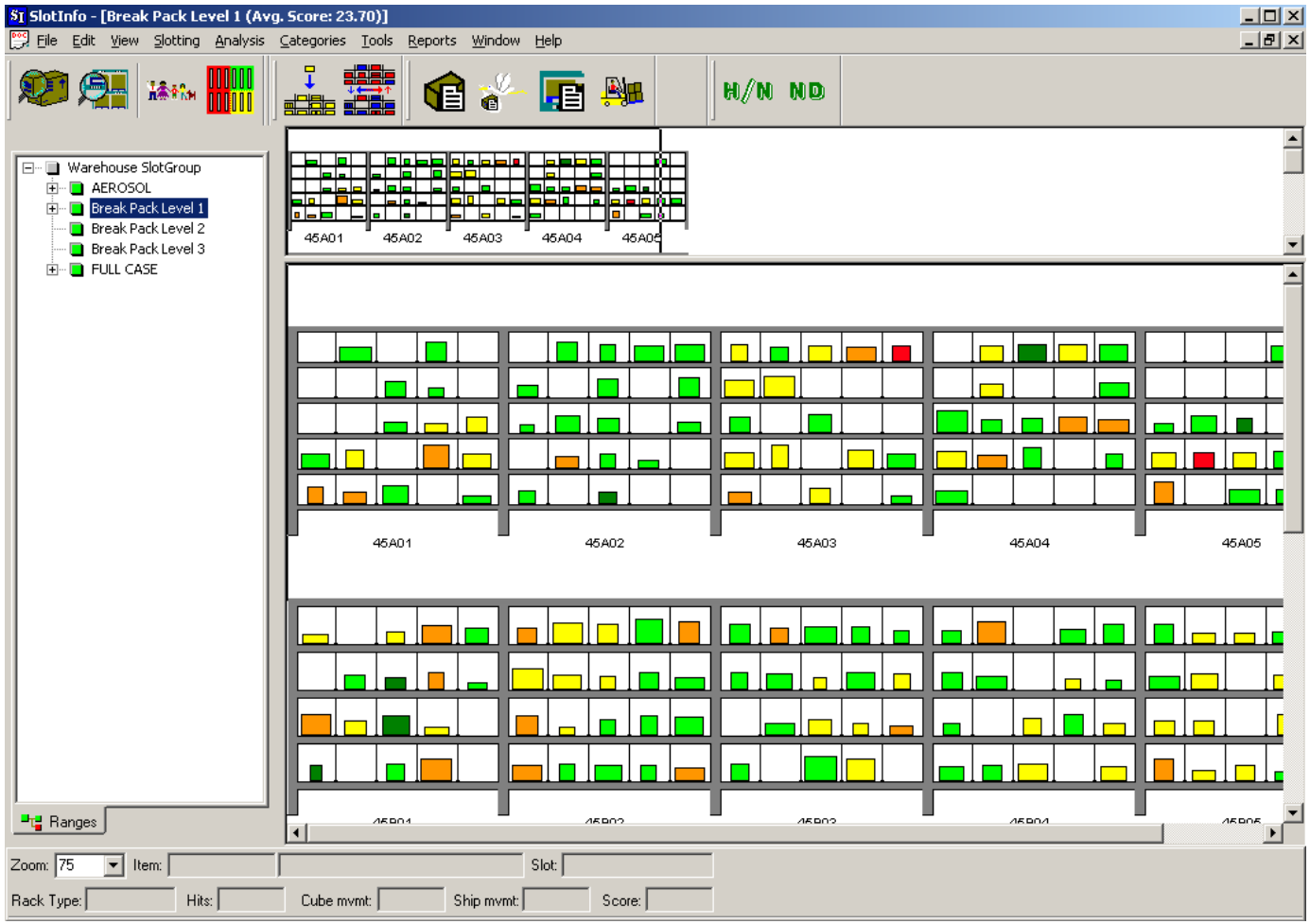
Safety

Accuracy, Response Time



Labor

Slotting

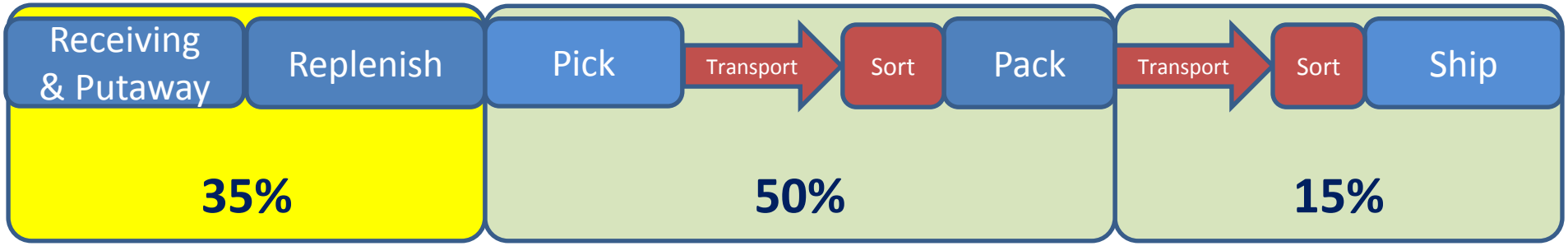

SlotInfo - [Break Pack Level 1 (Avg. Score: 23.70)]
File Edit View Slotting Analysis Categories Tools Reports Window Help
H/N ND
Warehouse SlotGroup
AEROSOL
Break Pack Level 1
Break Pack Level 2
Break Pack Level 3
FULL CASE
45A01 45A02 45A03 45A04 45A05
Ranges
Zoom: 75 Item: Slot:
Rack Type: Hits: Cube mvmt: Ship mvmt: Score:

Access

- Pick face
- For replenishment
- During picking

Warehouse Labor by Process

Piece Picking



Picking Solutions

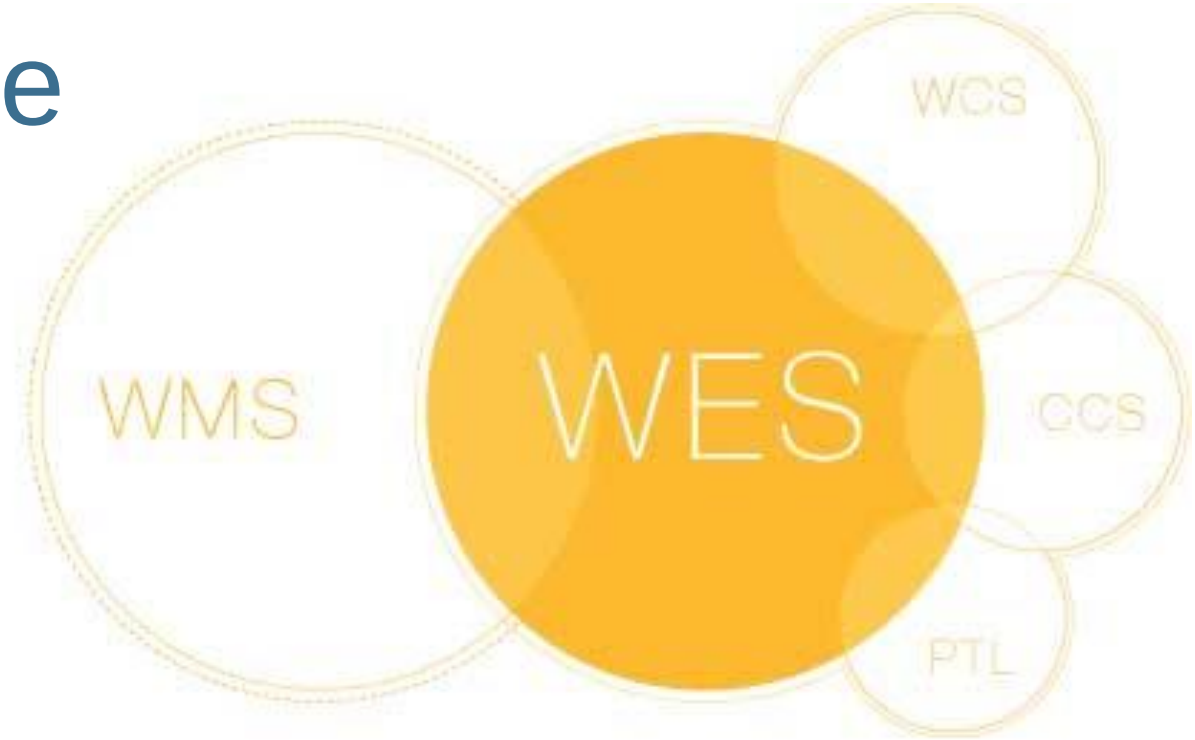
Picker to SKUs

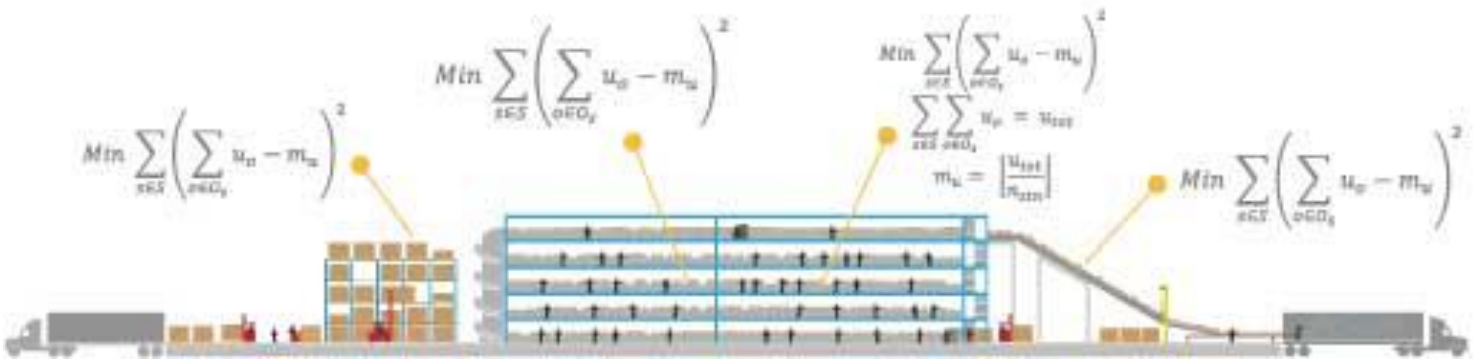
Order Container to Pick Zones

SKUs to Picker

Optimize

- Intelligence
- Agility

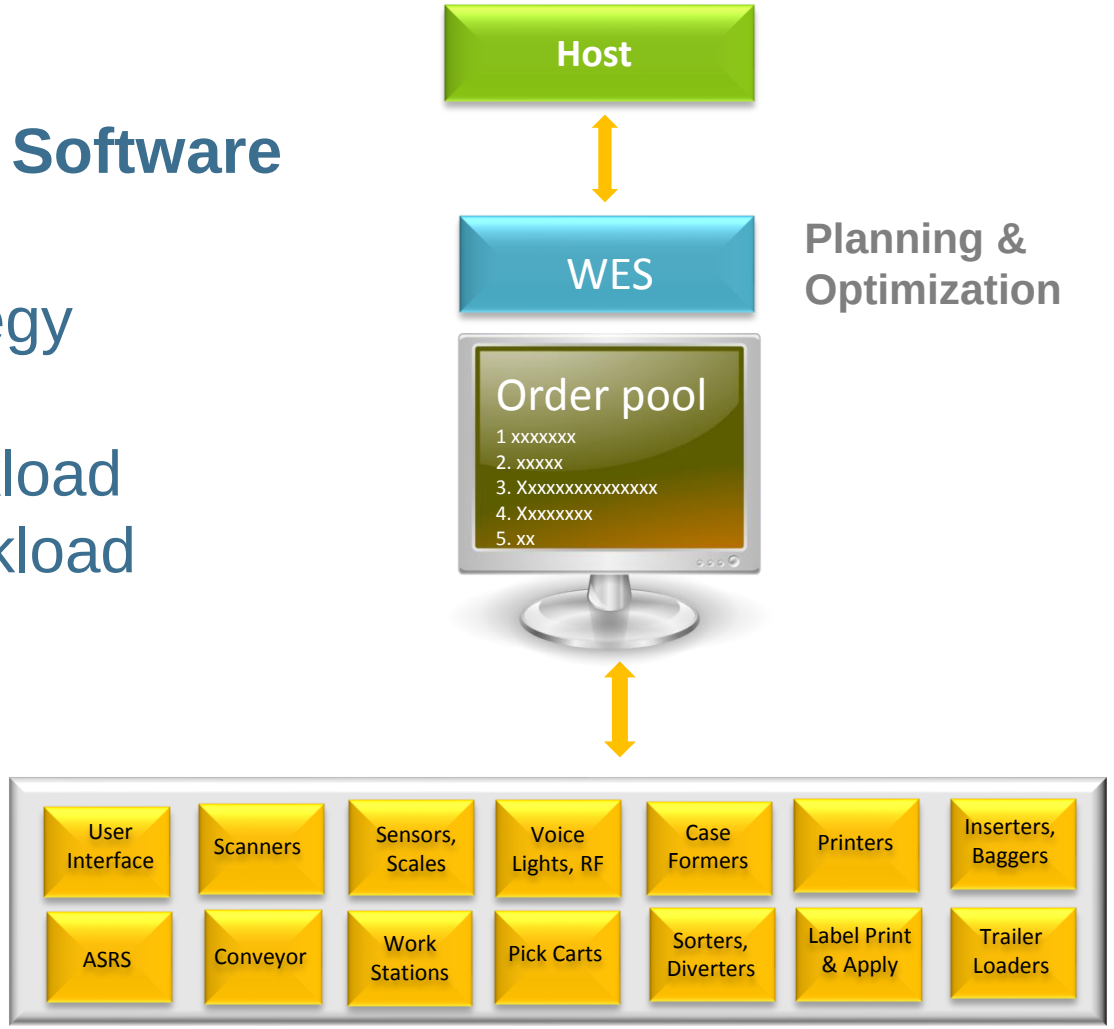




Optimize

Warehouse Execution Software (WES):

- Replenishment strategy
- Product groups
- Balance picking workload
- Balance storage workload
- Interface to host



Solution #1

Dynamic Slotting

Dynamic Slotting

Issues:

- Inefficiencies with labor & space

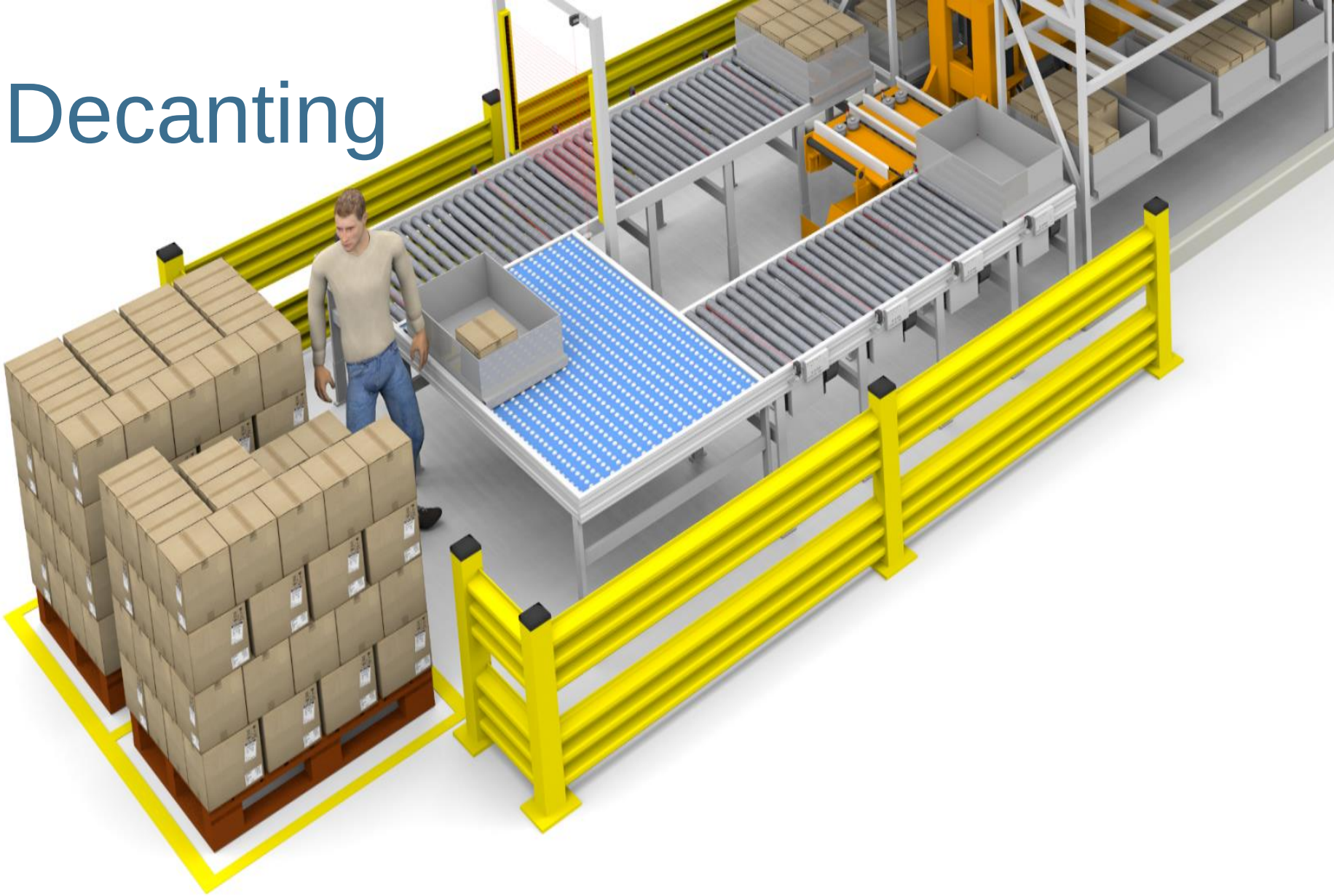
Solution:

- Dynamic pick face order fulfillment
- Miniload automated storage
- WES software

Results:

- Reduced footprint (ratio: 8 to 1)
- Reduced staff (from 5 to 1)
- From 50 cph to 220 cph per selector
- Reduced pick path
- Automatic pick face replenishment

Decanting

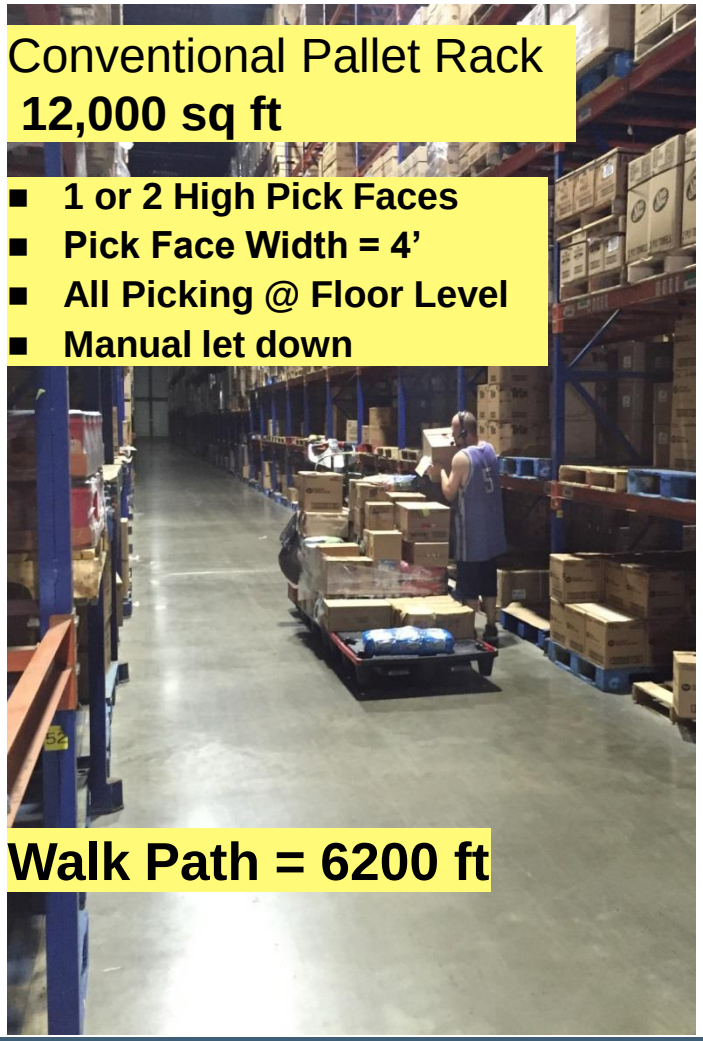


Picking

Value Analysis

Conventional Pallet Rack
12,000 sq ft

- **1 or 2 High Pick Faces**
- **Pick Face Width = 4’**
- **All Picking @ Floor Level**
- **Manual let down**



Walk Path = 6200 ft

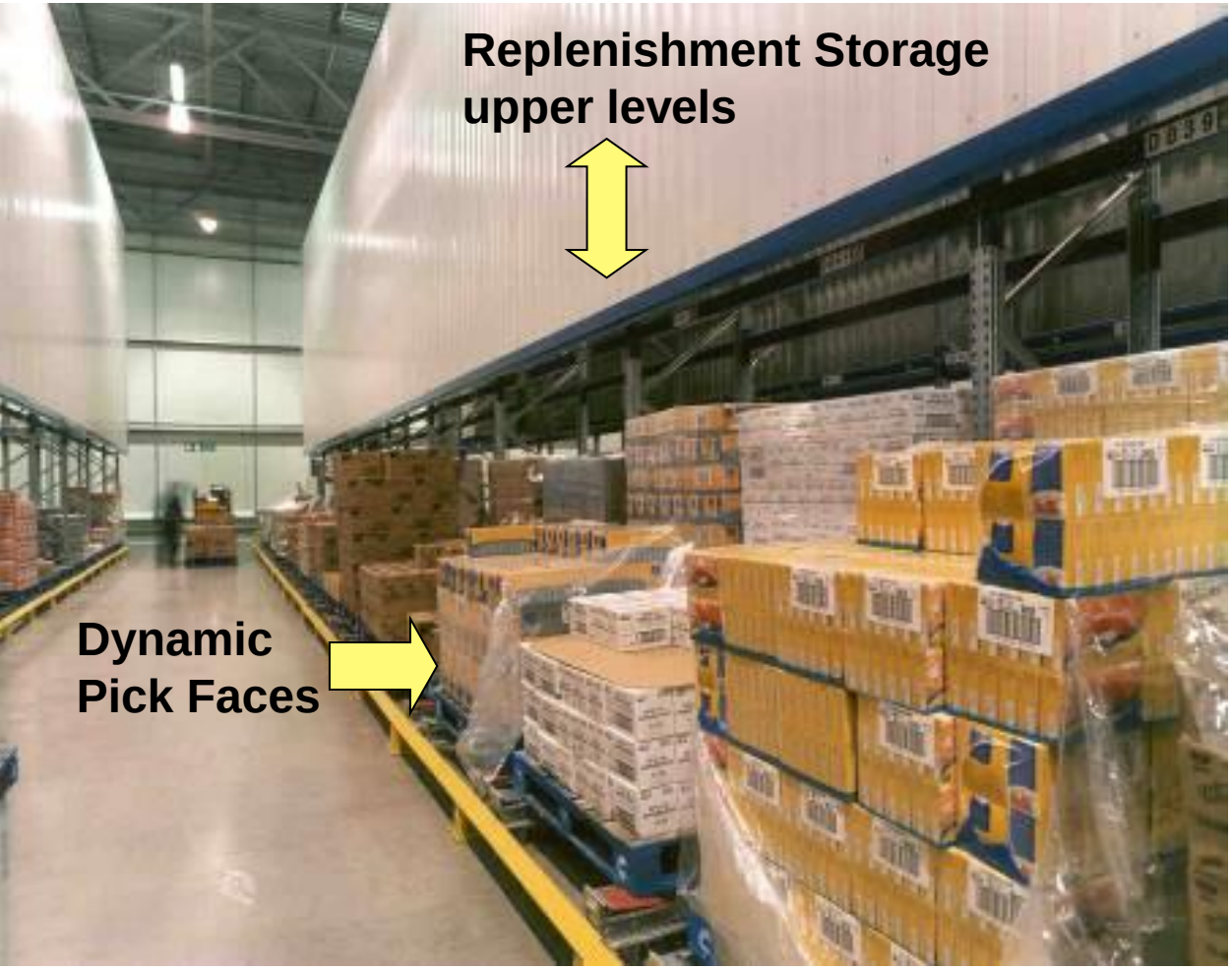
Dynamic Slotted
3500 sq ft

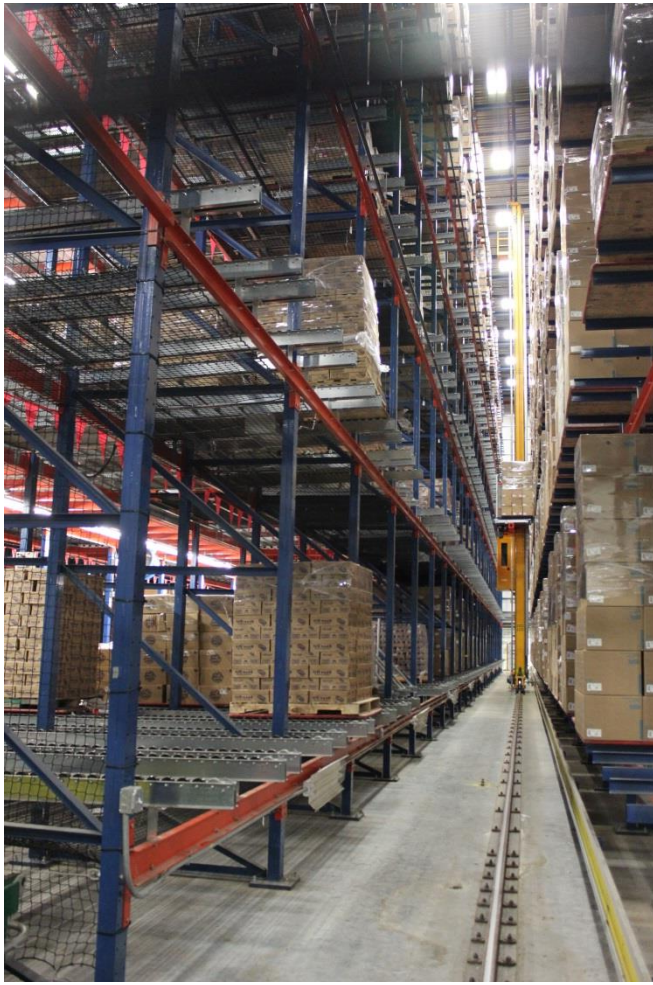
- **4 high pick faces**
- **1600 Pick Faces**
- **Automatic let down**
- **Pick face width = product case**

Walk Path = 650 ft

Dynamic Slotting

Pallet version



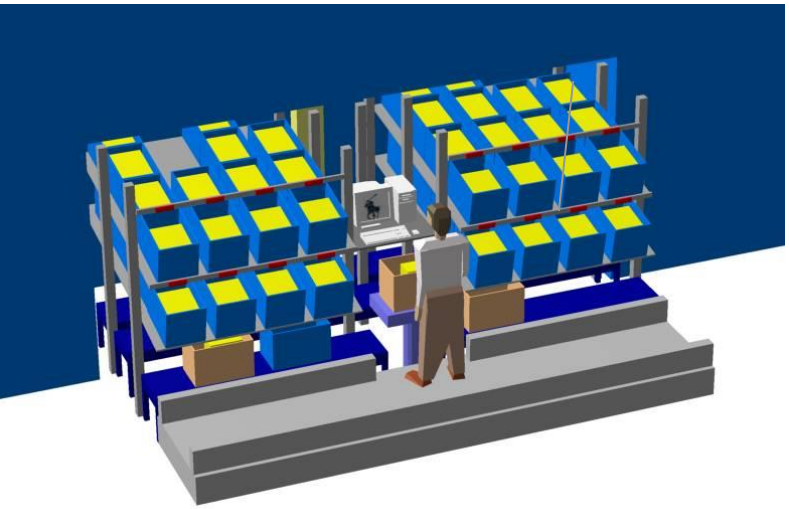


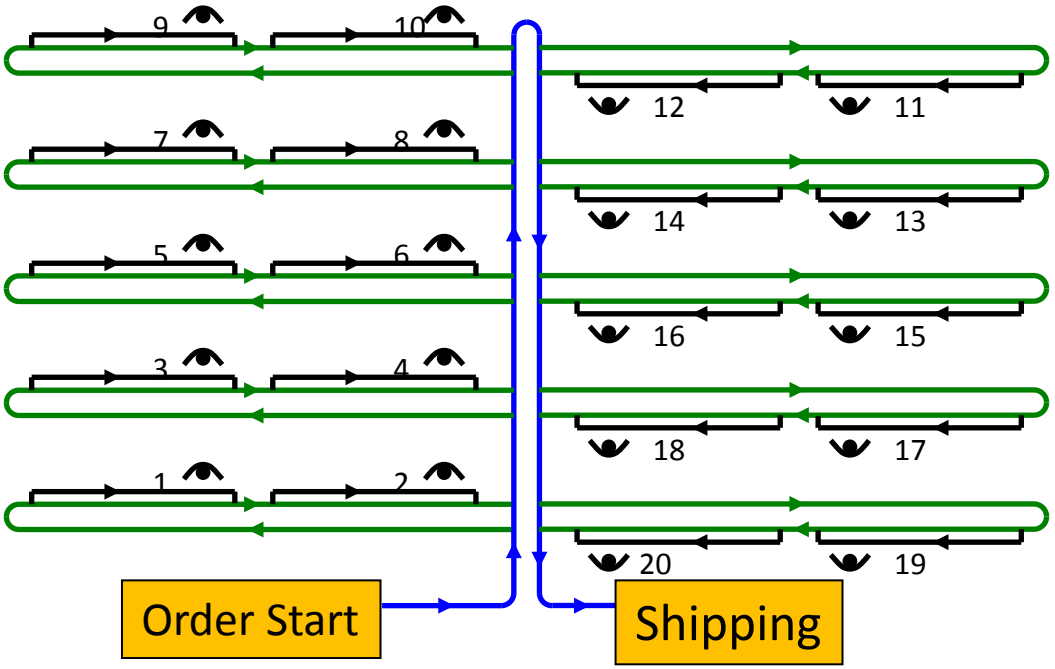
Case Pick to Pallet

Solution #2

Zone Route

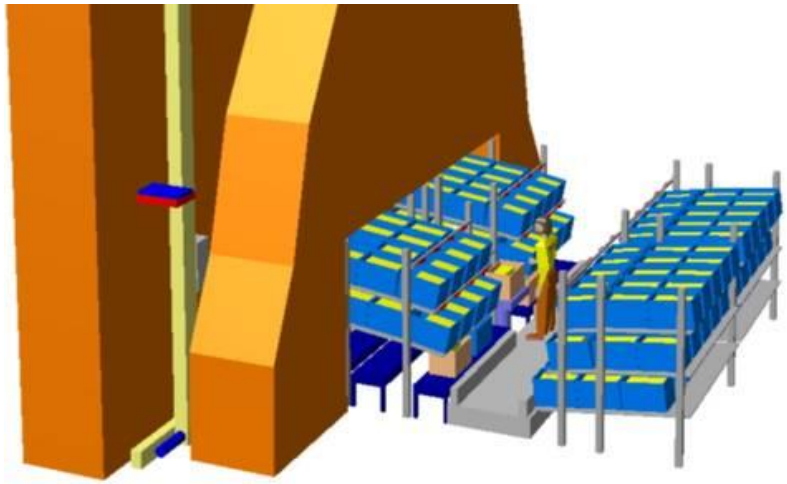
- Order container to zones
- Pick from SKU totes
- Auto replenishment





Decanting

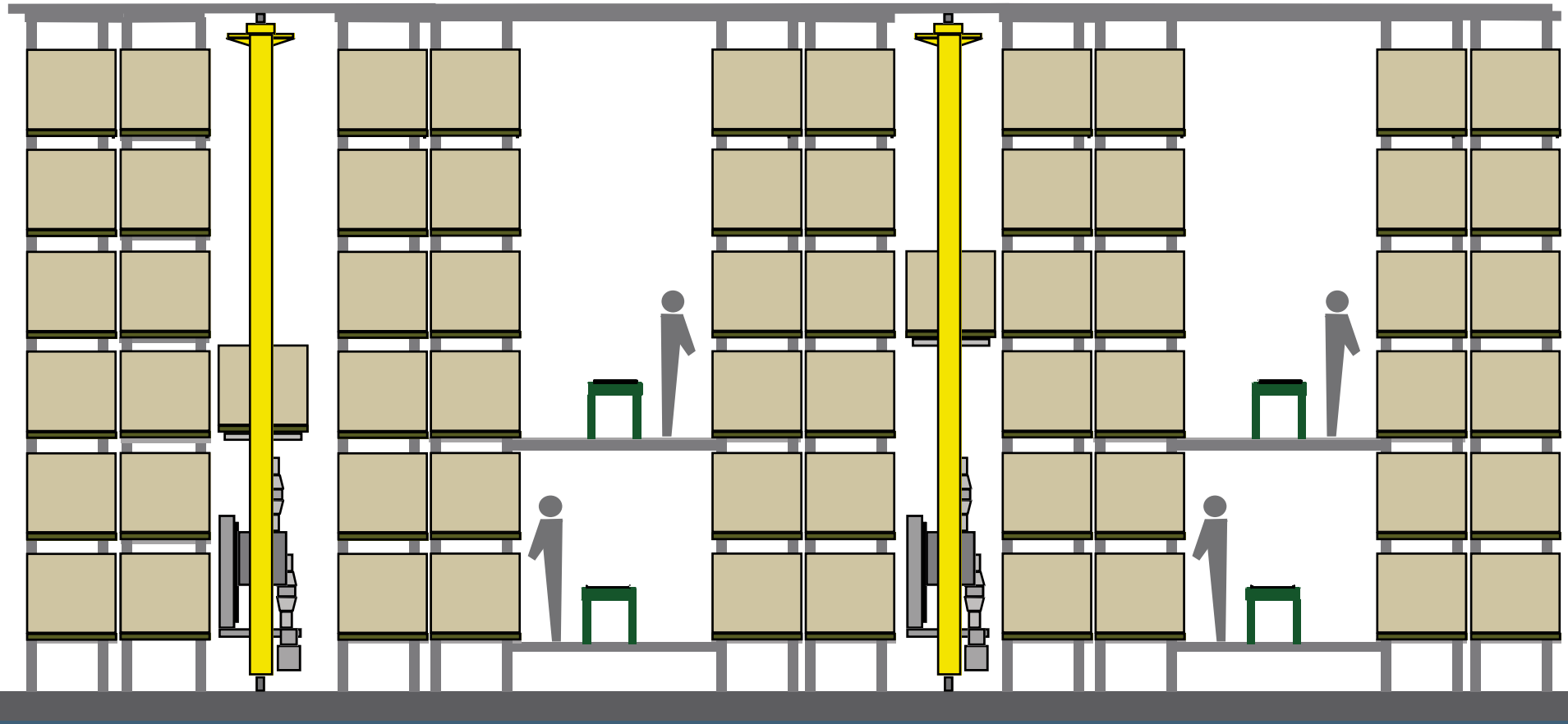
Automated Storage



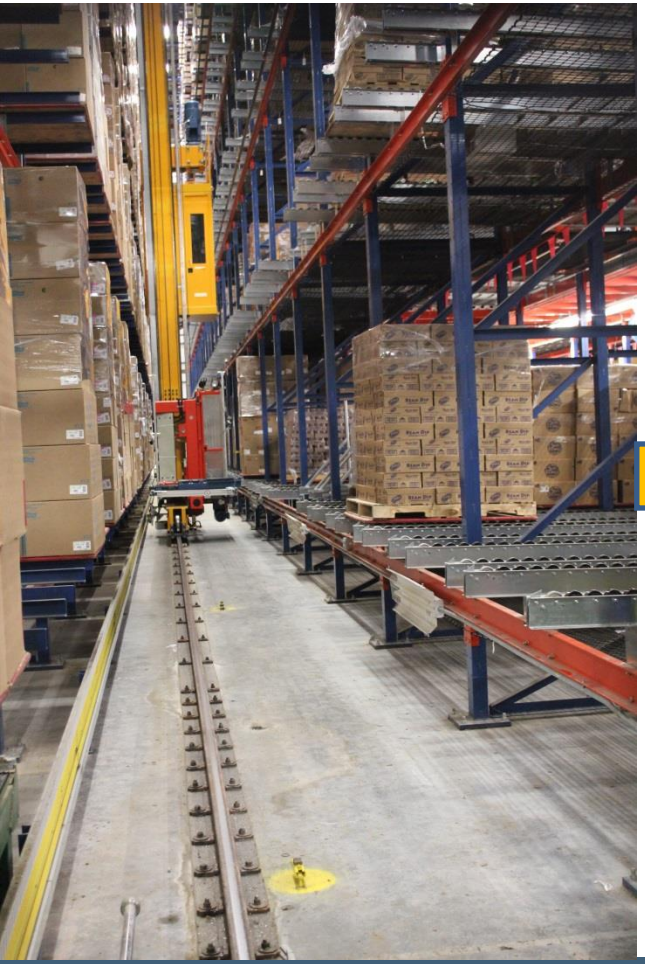
Replenishment & Picking

Solution #3

Case Pick to Conveyor



Case Pick



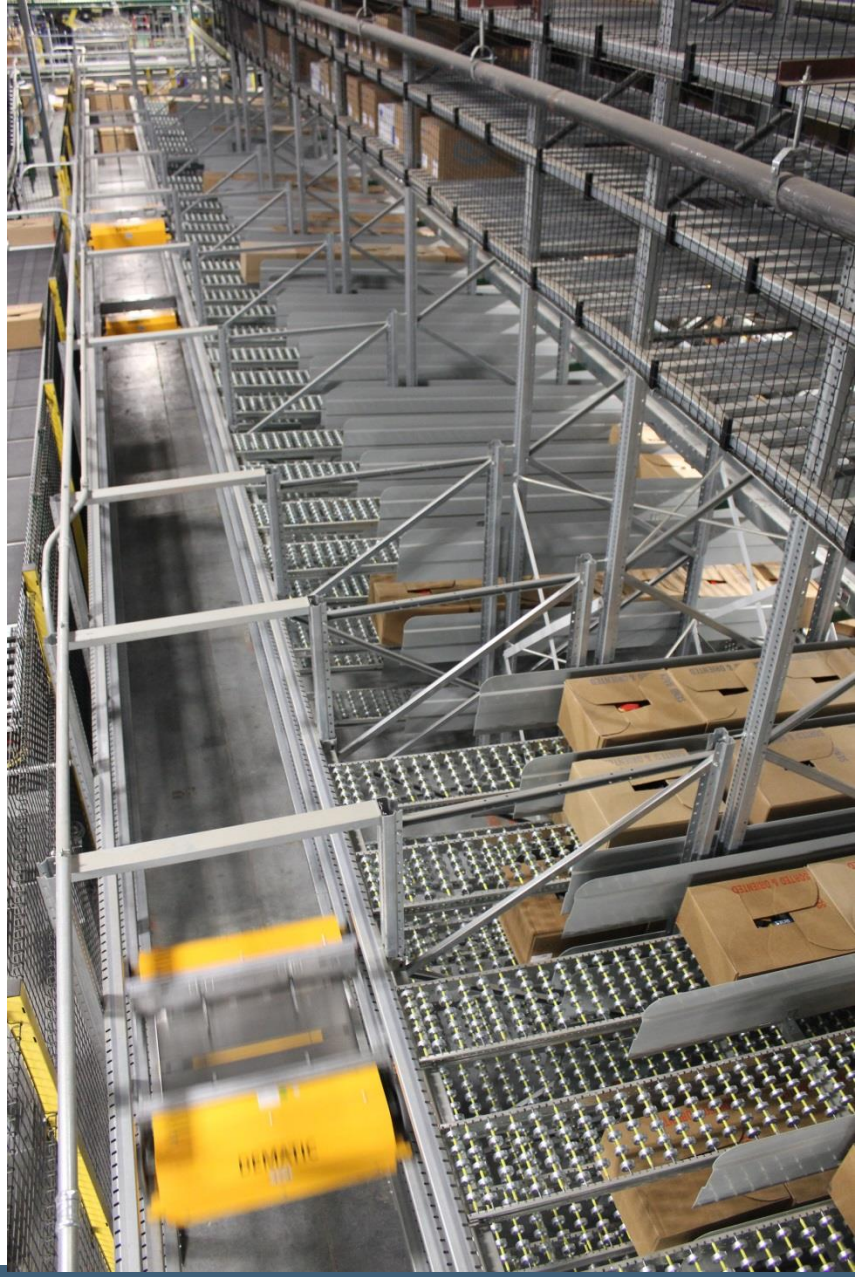
Light & Voice Directed

Solution #4

Zone Route

Light Directed Picking

Shuttle Replen



Solution #5

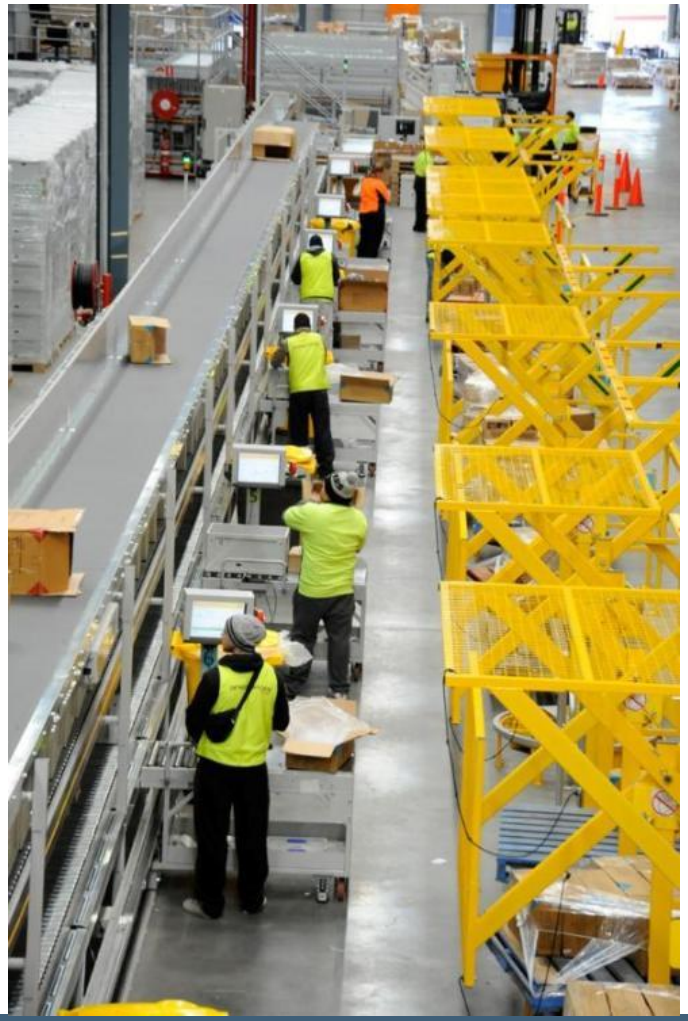
SKUs to Picker

1. Travel time
2. **Omit pick face**
3. **Omit re-slot**
4. Accurate
5. Less space
6. Security
7. **Optimized replenishment**
8. Ergonomic
9. Engineered work stations
10. Speed
11. Productivity
12. Less labor
13. Staff accordingly
14. Sequencing

Store in Tote

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

Decanting

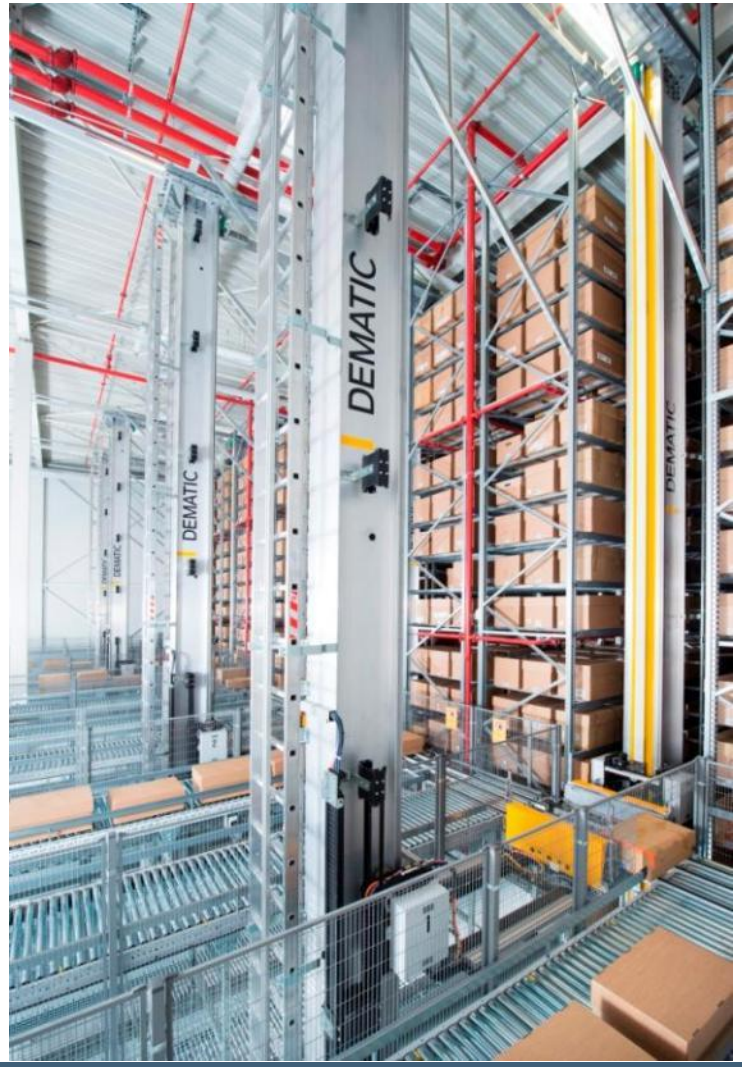


Inventory Buffer

- Automated
- Compact
- Supports SKU to the picker

Shuttle

Miniload



Put to Order Workstation

Solution #6

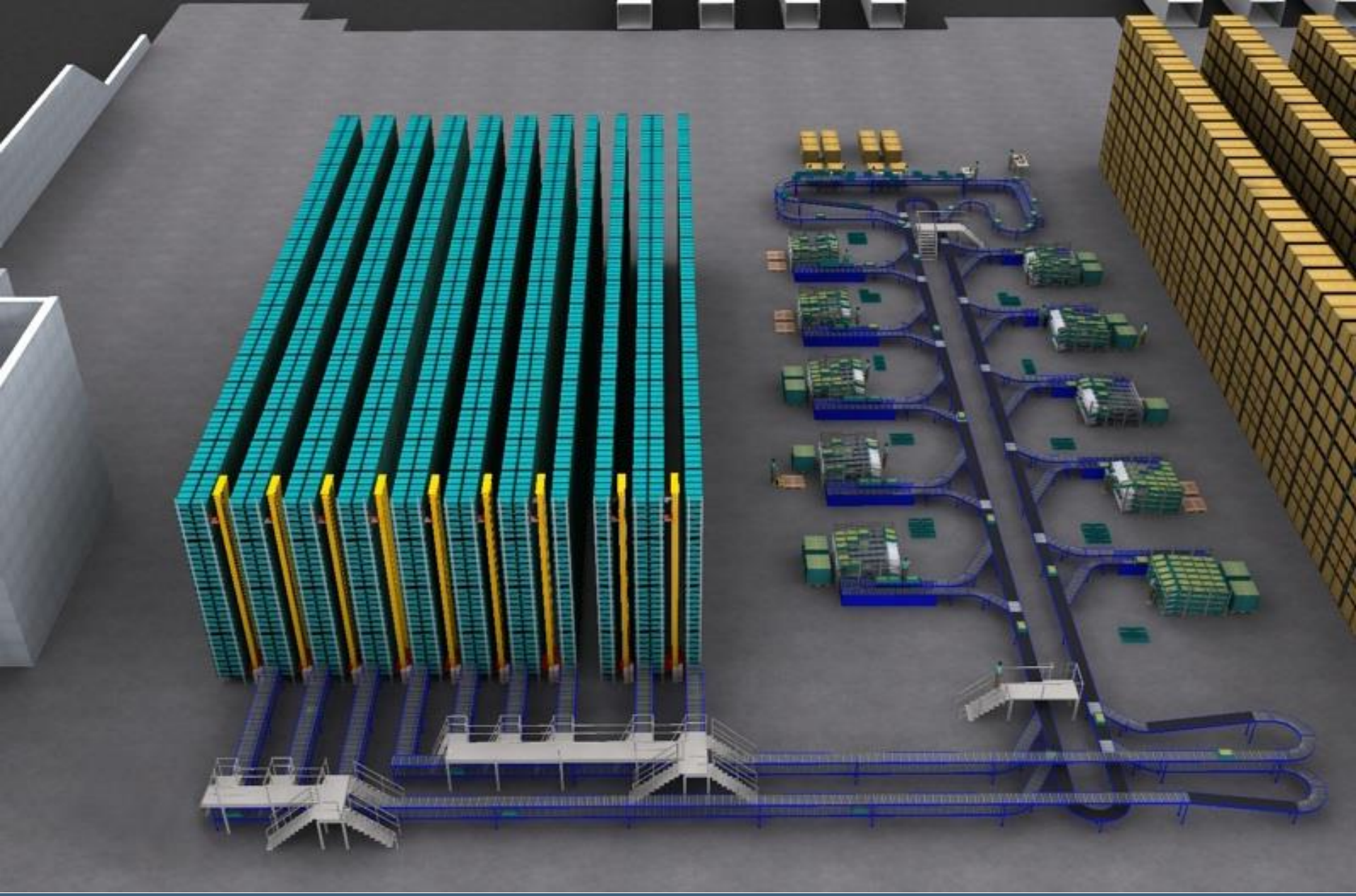
Storage to Put Station

Solution:

- Consolidate slow moving inventory
- Inventory buffer, miniload ASRS
- Light directed “put” to order stations
- Build store pallets

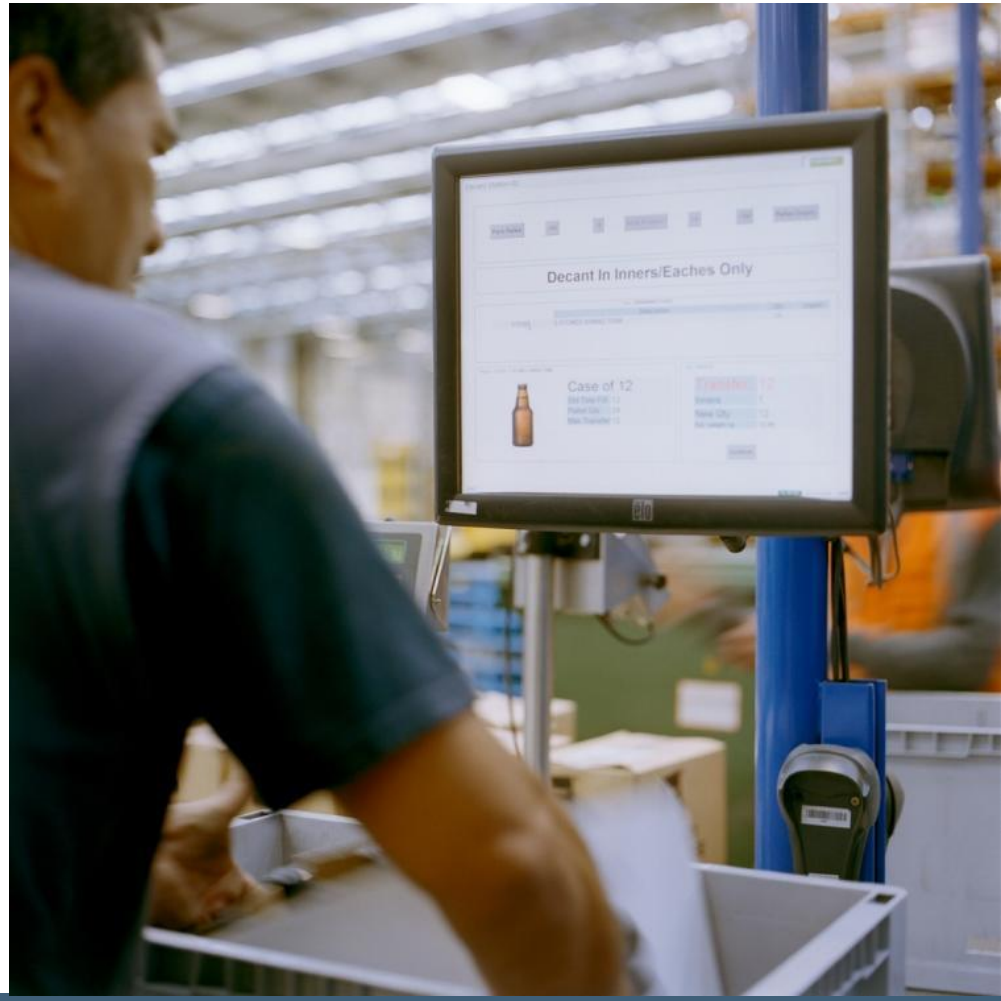
Results:

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



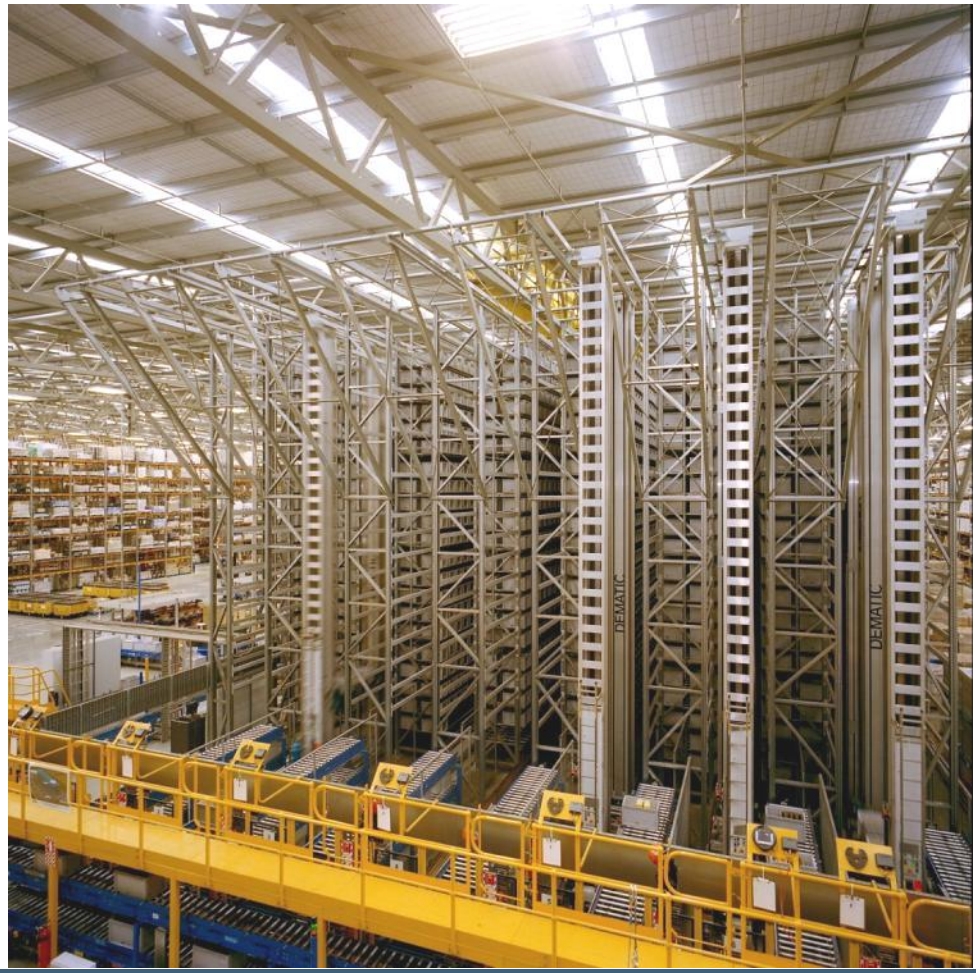
Decanting

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



Inventory Staging ASRS

- 30,000 totes
- 9 aisles
- Connects to “put” stations



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

Pallet Building

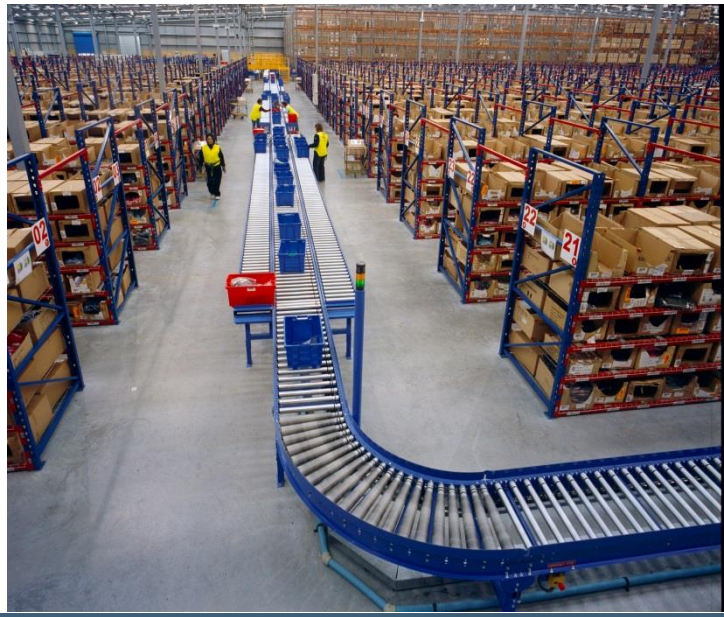
Back side of put wall

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

Solution #7

Returns Processing

- Zone route conveyor
- Voice directed



Solution #8

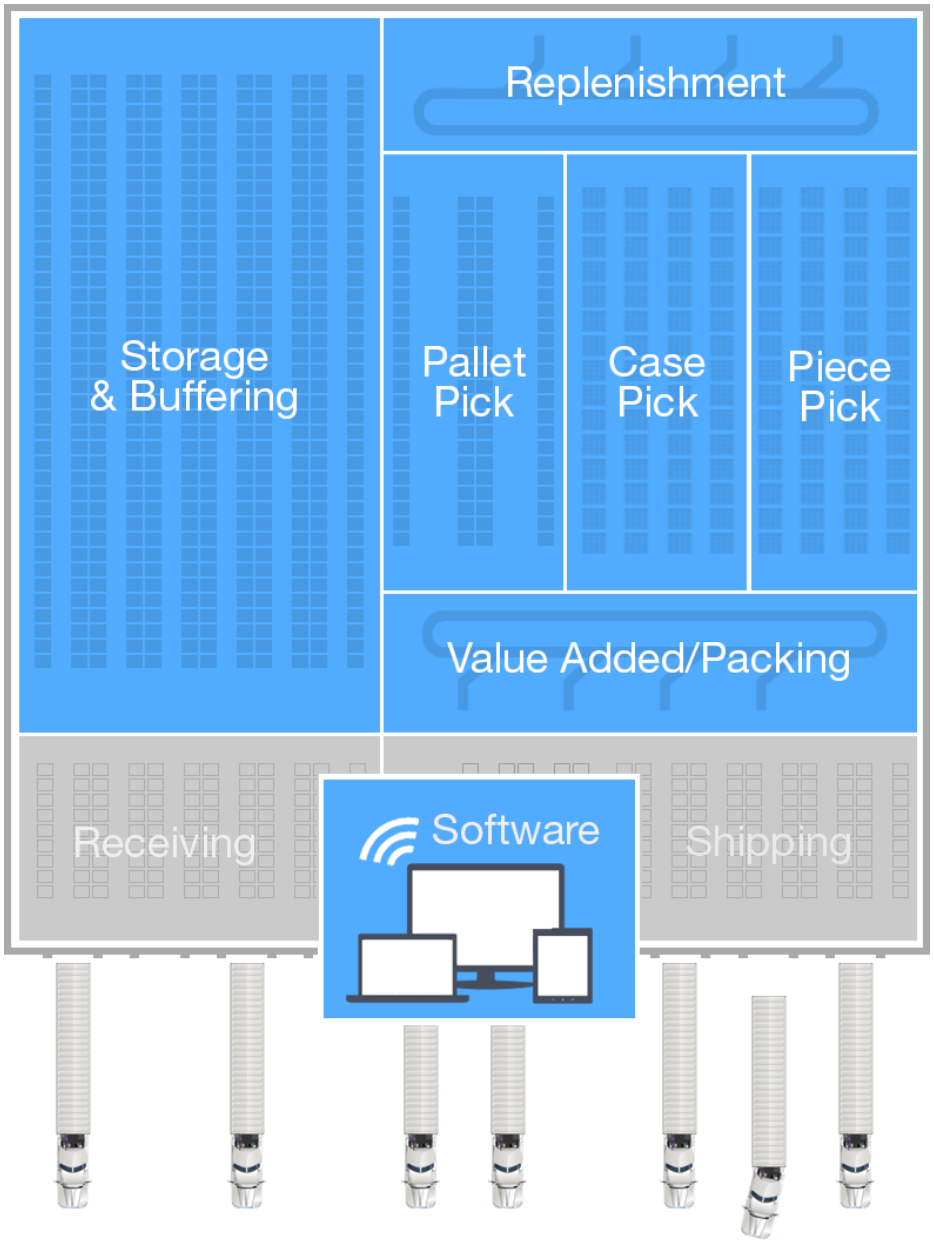
Robotic Picking

- Pick from donor
- Put to order

Solutions

for Replenishment

- Space
- Safety
- Accuracy
- Response time
- Labor
- Slotting
- Access



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