Order Fulfillment Strategies for Low Velocity Inventory

Presented by:

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MAKE YOUR BUSINESS FUTUREPROOF.

DEMATIC
Order Fulfillment Strategies for Low Velocity Inventory

Abstract

How is your efficiency when it comes to accommodating the huge number of SKUs/part #’s in your operation that are considered “slow moving”?

This presentation will investigate practices and solutions that can help you optimize the way you receive, put-away, store, pick, pack and ship low velocity inventory.

Monday April 9: 12:00 noon
Theater A
Chapter 1
Define the Opportunity
Slow Moving Inventory: Top Issues

- Space & Travel Time
- Labor & Ergonomics
- SKU & Sales Growth
- Accuracy & Quality
- Throughput & Processing Time
- Access & Transactions
Your Business Model
Impacts slow moving inventory

Example: Accommodate more SKUs than competitors
Data Analysis – Define the Opportunity

Inventory profile
- Review year to validate movement
- Productivity = sales per year per SKU
- Days on hand / turns
- Classify SKU’s (A, B, C)
- Seasonal

Order profile
- Evaluate SKU’s from order perspective
- % of orders contain A’s, B’s, C’s

Activity Profile
- Where is labor allocated
- DC Transactional costs – travel / handling

Define “slow mover” in your operation: once a day, week, month?
Data Analysis – example

Inventory profile by velocity:
- A: 15,000 SKU’s
- B: 25,000 SKU’s
- C: 75,000 SKU’s

Order profile
- 40% picked from shelving

Activity Profile
- 350,000 picked/day as “eaches”
- 145,000 picked/day from shelving
Data Analysis to Identify Daily Volume

Example

3% of SKUs account for 20% volume
30% of SKUs account for 60% volume
67% of SKUs account for 20% volume
Activity to Movement Analysis

Example

C - 89%

B - 6%

A - 5%
Things to Consider: Variable SKU Velocity

- SKU velocity stable?
- Or does velocity NOT follow ABC rules?
- “A mover” velocity today, is a “C mover” velocity tomorrow?
- Example: e-commerce retailer
  - ✓ 80% of SKUs changed velocity from A to C
Things to Consider: **Inventory**

Does your business demand that you keep everything that you currently have in storage?

- Do you have “no-movers” vs. “slow-movers”?
- Lost inventory? Old, expired?
- Inventory carrying cost?
- Buyers decide what’s in warehouse?
- What is the cost of keeping vs. getting rid of?
  - ✓ cost of material
  - ✓ customer service

✓ manual replenishment

rare SKU
Things to Consider: Inventory

Does your business demand that you keep even more slow moving inventory in storage?

- Retailers don’t want it:
  - in their warehouses
  - in their stores
  - fulfill online instead?
Things to Consider: Storage

- Put value to lost & misplaced inventory?
- How are you storing your slow movers?
- How does storage tie to transaction cost?
- Using up valuable space?
- Are you out of space?
- Can inventory be condensed?
- Where is it located in warehouse?
- Are you utilizing cube?
Things to Consider: Storage

- Shelving
- Flow rack
- Pallet rack with VNA truck
Things to Consider: **Labor**

Based on labor, how much time is spent picking slow moving inventory:

- ✓ Time to replenish
- ✓ Time to access?
- ✓ Time to shuffle material?
- ✓ Time to find material?
- ✓ Time to travel to get the material?
- ✓ Significant labor used for picking slow movers / merging to orders

<table>
<thead>
<tr>
<th>Receiving &amp; Putaway</th>
<th>Replenish</th>
<th>Pick</th>
<th>Transport</th>
<th>Sort</th>
<th>Pack</th>
<th>Transport</th>
<th>Sort</th>
<th>Ship</th>
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</thead>
<tbody>
<tr>
<td>40%</td>
<td>45%</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>15%</td>
</tr>
</tbody>
</table>
Things to Consider: **Labor**

Example: Discrete Order Pick:

- RF wrist mount
- Voice or light directed
- Pick to tote
- Pick to shipping container
- Pick to conveyor
- Pick to cart
Things to Consider – Labor

Example: Batch Pick & Sort:
- Voice or light directed
- Re-useable totes
- Sort to customer orders
Things to Consider: Slotting

- Is your warehouse slotted effectively?
- By velocity, cube?
- When was the last time you re-slotted?
- Do you refrain from re-slotting due to cost & time to do so?
- Does your slotting tie in to replenishment, picking and order profiles?
- Do you measure transactional costs?
Things to Consider: **Accuracy & Quality**

- Are your orders going out the door accurately?
- Do you have a lot of returns due to accuracy?
- Are shipments leaving your warehouse late?
Chapter 2
What are Others Doing?
Warehouse Execution System (WES) Software

- Optimize processes
- Accommodates low velocity SKU strategies
Smart Order Execution Strategies

Software

- Storage location management
- Planning & optimization
- Labor productivity
- Waveless, on demand, continuous flow
Storage Strategies

Put away & retrieval

- Receiving
- Storage location optimization
- Omit multiple load moves
- Use variety of position sizes:
  - ✓ depth & height
- Consider cost:
  - ✓ each touch, time & equipment
  - ✓ each storage location, utilization
Storage Strategies

Use appropriate solution based on velocity & Utilization

- Pallet rack
- Flow rack
- Shelving
- Layer quantity
- Totes/containers
- Totes/containers w/multiple SKUs

WES assigns appropriate location
Slotting Strategies

- Family groups
- Similar SKUs together
- Cube
- Random
- Replen to any open position
- Multiple locations assigned for each SKU
- Spread A movers to avoid congestion
Picking & Replenishment Methods
For slow moving inventory

Person-to-Goods

Order containers-to-Person

Goods-to-Person
Case Study #1 Food Distributor

Dynamic Slotting

Re-cycle pick slots throughout shift
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
Pallet Version
Food Distribution
Dynamic Slotting

Dynamic Pick Faces

storage upper levels

case pick

automated storage
Automatic Replenishment
Case pick to pallet
Case Study #2 Office Supplies
Person-to-Goods, Low Volume

Piece Picking
- Carts
- Discrete order pick
- Multiple order per cart
- RF or voice directed
- Pick path optimization
Case Study #3a Beverage Person-to-Goods

- Pick to pallet: voice directed
- Pick path optimization
- Directed to the pick face
- Fast movers: case pick
- Slow movers: pre-pick to carts or totes
- WES plans & merges fast & slow movers at shipping

high velocity SKU’s

low velocity SKU’s
Case Study #3b Beverage Buffer “C Movers”

- Pre-pick slow movers to tote
- Pre-pick slow mover cases
- Stage in Buffer
- Release to shipping
- By order, by route
- Merge with fast moving inventory
Case Study #4 Electronic Parts

Piece Picking

- 250,000 SKU’s
- Low velocity SKU’s
- Interlink sorter
Case Study #5a Auto Parts Distributor

Batch Pick to Put Wall

Piece Picking, Low Volume
- Batch pick to carts: voice directed
- Pick path optimization
- Consolidate with put wall
- Light or voice directed

“Every fast mover is a slow mover”

Red totes: store pick up
Grey totes: store shelf
Case Study #5b: Apparel e-com
Batch Pick to Put Wall

Piece Picking: high volume
- 135,000 SKU’s
- All low velocity SKU’s
- Batch pick
- Consolidate
- Pack
- 90,000 pieces/day
Case Study #6: Electrical Supplies

Zone Route

- High SKU count
- SKU velocity by zone
- Put-away (blue totes)
- Pick to carton (shipper)
- Direct cartons to zones with picks
Case Study #7: Industrial Supplies
ASRS with Goods-to-Person (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
Case Study #8: Industrial Supplies
ASRS with Goods-to-Person (SKUs to Picker)

- Low velocity SKU’s
- Order processing:
  - ✔ priority picks
  - ✔ inserted immediately
  - ✔ Do not wait for batch processing
Case Study #9 ASRS, Goods-to-Person
Mixed Case Pallets, low velocity SKU’s
Case Study #10: Document Storage

ASRS with Goods-to-Person

Bins – ASRS

- All slow moving inventory
- University libraries
- Books stored in bins
- Single or multiple SKUs/bin
- High density storage
Case Study #11 Healthcare

Hybrid System

- Slow movers in ASRS
- Goods-to-person picking slow movers
- Zone route conveyor for fast movers

**Productivity Rates**

- Inbound: 40 totes/hr
- Pick Station: 750 -- 850 order lines/hr
- Pick to Light: 120 -- 180 order lines/hr
Hybrid System

- Pick strategies by SKU classifications
- 4,000 SKUs
- 4,000 Orders/day
Case Study #12: Medical Supplies

Piece Picking System for Low Velocity SKU’s

- Distribute to hospitals
- Decant, store, pick
- 24,000 tote locations
- 7,000 order lines/day
- 35,000 pieces per day
- Load totes to wheeled carts
- Reverse route loading
Key Takeaways

- Understand what you have in your inventory
- Understand your order profiles
- Analyze & classify your SKU productivity
- Reconsider storage and labor strategies
- Slow moving inventory inefficient to accommodate
- Consider better methods.
- Drive results!
For More Information:

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