WMS Best Practices

Top Ten List
David Letterman Top Ten List
Top 10 reasons to adopt WMS best practices

Reason 10...

“Your receiving backlog is so bad you haven’t seen the dock floor since 1974”
Advanced shipping notice (ASN)

- With the technology available today most companies have EDI capabilities
- Sharing container level detail via ASN’s has become common practice
- ASN’s can reduce the effort to receive by as much as 70%
  - Can eliminate the need for detail receiving (trusted vendors)
    - Labeling
    - Counting
    - Sorting
  - Can reduce the need for receipt breakdown
    - Pre-sorted containers
    - System directed put away path
Receiving sortation

• Receiving sortation can improve productivity when:
  – Receiving breakdown and detail receiving are required
  – Receipts of partial pallet quantities contain a mix of products that will be stored in different areas
  – Products are received in small quantities that don’t justify a trip into the warehouse on their own
Receiving sortation

- Receiving sortation involves separating products based on put away area
  - Master licenses can be constructed for given areas
  - Put away can be postponed until there are enough items destined for the same area to warrant the travel
  - System directs operators in the most efficient travel path
Top 10 reasons to adopt WMS best practices

Reason 9…

“It takes so long to get product put away you composed a new song called…”

“The Fill Rate Blues”
Staying on top of put away tasks

• When push comes to pull put away is one of the work tasks that takes a back seat to:
  – Picking
  – Replenishments
  – Loading

• Pulling resources from put away can have several negative effects:
  – Lower fill rates
  – Congestion in the aisles
  – Obstructions to picking (lower productivity)
Managing the put away process

• **Plan**
  – Review expected receipts
  – Review current backlog
  – Calculate resource requirements based on standard rates per zone

• **Execute**
  – Assign resources based on plan
  – Consider factors such as:
    • Zone congestion
    • Hot receipt priorities
Managing the put away process

• Monitor
  – How many tasks are outstanding
  – What part of the facility are they destined for
  – How many people are currently doing put away tasks
• Repeat the process
Top 10 reasons to adopt WMS best practices

Reason 8…

“Your order select methods have become so numerous and complicated your actively recruiting a rocket scientist from MIT to run the allocation process”
Document and analyze

- Document how many waves you run each day for a one week period
  - Capture reasons why
  - Perceived benefits
  - Negative results

- Analyze your current process and look for ways to:
  - Pre-define and save order select methods
  - Develop a daily schedule that governs
    - Which select methods to run
    - When to run them
  - Automate the allocation process when it make sense
  - Apply some general rules of thumb
General rules of thumb

- KISS (keep it simple stupid)
  - Reduce the number of select methods used
  - Work to a schedule
    - I need to run select method 10 at 9:00AM everyday
- Allocate as close to picking as possible
  - WMS has a better picture of inventory at picking time
    - Pending put away tasks, moves, etc.
- Allocate a few large waves vs. many small ones
  - When WMS has a larger group of orders:
    - Allows optimal work assignment size
    - Allows for better order grouping to optimize pick path
Top 10 reasons to adopt WMS best practices

Reason 7...

“The warehouse is so full you set up an overflow storage area in the lunch room where employees sit at full pallets rather than tables”
Re-warehousing / consolidation

• WMS can help with re-warehousing in several ways
  – Re-warehousing based on storage strategies
    • Number of best parameters
  – Re-warehousing based on picking strategies
    • Maximize empty locations
• Leverage the WMS to identify and execute on consolidation opportunities
  – Consolidation report
  – Re-warehousing moves
  – Scheduled moves
Top 10 reasons to adopt WMS best practices

Reason 6…

“Product demand and velocity change so often that you begin using an ouija board to slot product”
Warehouse optimization

- Objective is to improve picking productivity by reducing travel time and improving ergonomics for high demand product
- WMS supports opportunity based optimization (slotting) through strategy changes
  - Re-slot product through normal picking and storage processes
- As velocity changes so does optimal pick and storage locations
  - By changing master strategy
    - product can be cleaned out of non-optimal locations as a normal part of picking
    - Product can be stored to new optimal location as a normal part of put away
Storage example

- High velocity product
  - Always try to store to prime(gold) locations first

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Zone/Sub Zone</th>
<th>Pallet</th>
<th>Carton</th>
<th>Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10 (reserve)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>2</td>
<td>20 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>30 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>4</td>
<td>40 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Storage example

• Low velocity product
  – Always try to store to non-prime(bronze) locations first

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Zone/Sub Zone</th>
<th>Pallet</th>
<th>Carton</th>
<th>Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10 (reserve)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>2</td>
<td>40 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>30 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>4</td>
<td>20 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Picking example

- High velocity product
  - Always try to pick from non-prime (bronze) locations first
  - Cleans stock out of non-prime locations first until there is only stock left in new prime locations

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Zone/Sub Zone</th>
<th>Pallet</th>
<th>Carton</th>
<th>Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10 (reserve)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>2</td>
<td>40 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>30 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>4</td>
<td>20 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Picking Example

- Low velocity product
  - Always try to pick from prime(gold) locations first
  - Cleans stock out of prime locations first until there is only stock left in new non-prime locations

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Zone/Sub Zone</th>
<th>Pallet</th>
<th>Carton</th>
<th>Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10 (reserve)</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>2</td>
<td>20 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>30 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>4</td>
<td>40 (forward)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Product profiling steps

• Analyze for optimal product placement based on
  – Velocity
  – Demand
  – Bin trips
  – Etc.
• Compare to actual product location
• Identify and prioritize opportunities to relocate product
• Schedule and execute moves
FlowTrack – slotting

• Optional add on module (works with all WMS releases)
  – Analyze
    • Racking requirements (linear feet of racking)
    • Recommended fixture type to SKU (bins vs. pallet flow lanes)
    • Overall productivity rates, replenishment requirements, etc.
  – Slot
    • Ideal SKU to Location assignment throughout warehouse
    • Precise Location sizing (opening size, capacity) to meet on-hand inventory requirements
    • Exact SKU slotting characteristics (# faces, orientation) to maximize utilization of racking space
  – Maintain
    • Analysis of SKU moves required to improve overall profile
    • Generation of moves to maximize utilization of labor in completing moves
Top 10 reasons to adopt WMS best practices

Reason 5...

“Your picking productivity is so low you’re considering benchmarking it as a reverse logistics operation”
Picking productivity

• Picking is the most labor intensive time critical operation in the warehouse
• Optimizing other operations at the expense of picking costs more in the long run
  – Put away example
  – Replenishment example
• Manage the flow of picking work to avoid:
  – Congestion and bottle necks
  – Shipping delays
• WMS provides tools to manage flow of picking
Improving picking productivity

• Ergonomics – take the time to make product pick ready
  – Develop special storage fixtures when warranted
  – Orient product to make it easy to pick
  – Remove excess packaging
  – Locate heavy or odd shaped product in easy to access locations

• Properly slot product based on Ergonomics and demand/velocity
  – Develop an ongoing slotting program to analyze and relocate products
  – Even minimal effort can reap significant benefits
Which location would you rather pick from?
Improving picking productivity

• Validate that you are using the appropriate type of picking
  – The theme is eliminate non-value added steps
    • Pick and pack vs. pick and consolidate
    • Eliminate packing processes where appropriate
  – Minimize travel time - keep the pickers in the aisles
    • Look for ways to pick multiple orders at a time
      – Batch picking
      – Bulk picking

• Measure, measure, measure
  – Establish a benchmark
  – Implement adjustments and compare to benchmark
  – Incremental improvements add up over time
Improving picking productivity

- Communicate productivity expectations to employees
  - Engineered time standards
  - Standardized work assignments
- Give employees feedback on performance
  - One on one vs. public
  - WMS provides all the necessary productivity data
- Team approach
  - Develop daily work plan and communicate it to the team
  - Communicate progress throughout the day
  - Co-workers are the best motivators
Top 10 reasons to adopt WMS best practices

Reason 4...

“You handle products so many times in the warehouse you may have to start selling them as used”
Eliminating waste

• Map your processes
  – Flow charts or process flows are proven tools
• Analyze each step for the value it provides
• Eliminate non-value added steps
• Look for ways to streamline and simplify
  – We always did it this way… doesn’t cut it anymore
• Great new ideas get bogged down by exceptions
  – If you spend more than 10% of the time dealing with an exception then it probably is not an exception.
• Incremental approach
  – Silver bullets are rare
  – Small improvements add up over time
Top 10 reasons to adopt WMS best practices

Reason 3...

“You are considering purchasing turbo charged fork lifts to help your material handlers get replenishments done in a timely fashion”
Replenishment do’s and don’ts

• Stock one day’s inventory in forward pick locations where possible
  – If space is short - focus on the highest velocity items

• Manage the priorities of replenishment tasks through the WMS
  – Emergency vs. regular

• Avoid fit problems
  – Let the WMS release replenishments when they will fit

• Employ the correct replenishment model by zone
  – Real time – when flow is fairly even
  – Allocation based – when spikes in demand are common
  – Scheduled – when there is enough stock in forward to support daily picking demands
Replenishment do’s and don’ts

• Avoid excessive replenishments
  – Set thresholds properly
• Don’t streamline replenishments at the expense of picking
  – The true measure of success is keeping enough stock to support picking with a minimum of effort
  – Full pallet example
• Monitor replenishment activities through the WMS
  – Look for backlogs from zone to zone
  – Identify the number of employees currently assigned
  – Adjust as needed
Top 10 reasons to adopt WMS best practices

Reason 2...

“The auditors are so carried away with inventory accuracy they want you to cycle count the contents of vending machines in the lunch room”
Warehouse Manager vs. Auditor

• Warehouse Managers and Inventory Auditors have different objectives
  – Managers want accuracy with minimal effort
  – Auditors want minimal risk of errors

• A WMS is very good at maintaining inventory accuracy… Take advantage of that fact!
  – Negotiate with your auditors to reduce the requirements
  – Propose a pilot with verifiable results
WMS solves the problem

PICK 1E OF LOSTARK
FOR ORDER001
AT LO-ST-LO-C1-01-01
QUANTITY________
Minimize your effort

• Reduce your dependence on cycle counting to correct errors
• Look for ways to ensure accuracy on the front end
  – Simplified processes
  – Procedures that promote accuracy
  – Thorough training
  – Validation, validation, validation
    • Bar Codes
    • Check Digits
• Look for incentives to motivate employee accuracy
Minimize the risk

• Standardize your accuracy reporting
  – Track accuracy on a weekly basis
  – Research and correct root causes
    • Training
    • Problem employees
    • Complicated processes

• Leverage the data available in your WMS
• Establish benchmarks both you and the auditor can live with
• Build a solid track record to support future changes
Top 10 reasons to adopt WMS best practices

And the number 1 reason…

Turn your WMS from ‘Where’s My Stuff’ to an actual ‘Warehouse Management System’