

Bridging the Gap between Legacy and Best-of-Breed WMS

Sponsored by:

Tran Systems

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Agenda

- WMS Levels
- Functionality Walk
- Is ERP an Option?
- Latest and Greatest
- Why & How to Modify your Legacy WMS?
- BOB Landscape

WMS Levels

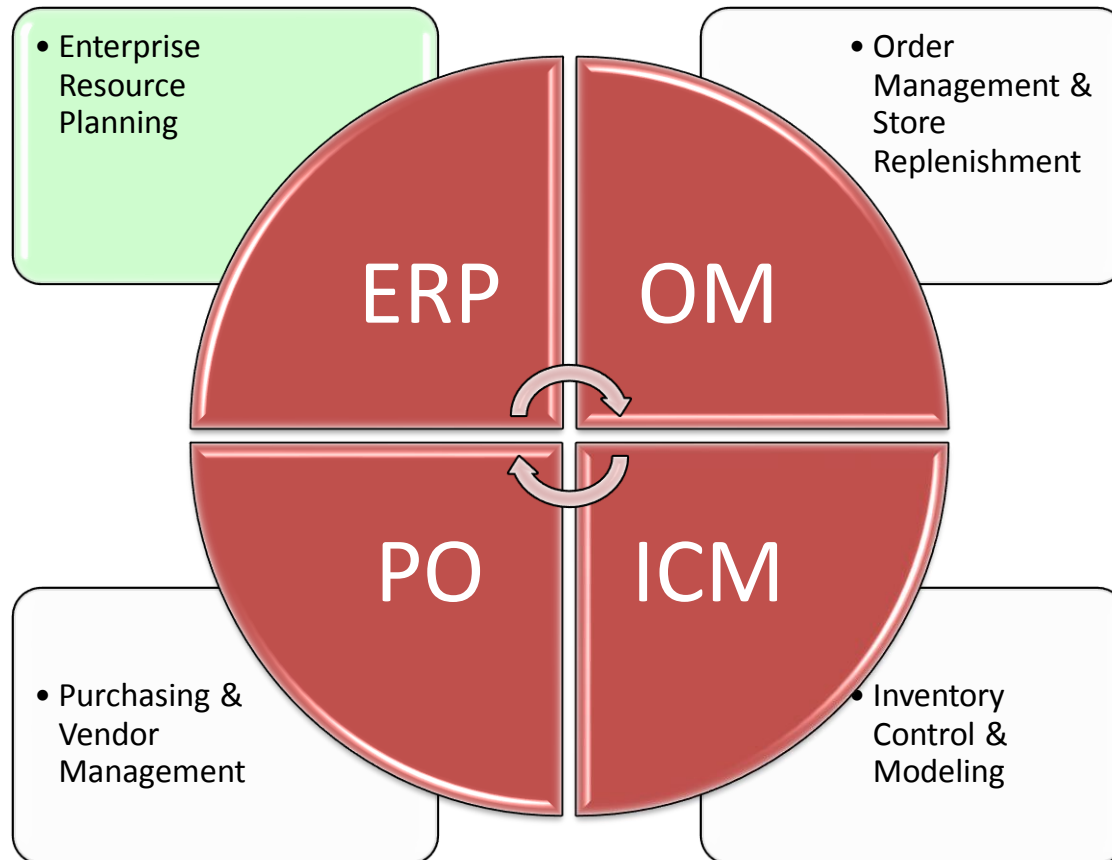
Key Features Multi-DCs

Best of Breed - ERP Level Software:

- Inventory management and planning software to determine, optimize, adjust inventory levels at each DC
- Purchasing software supports different supply chain considerations and costs for same vendors/products based on destination DC
- Purchasing software supports multiple vendors for same product when delivery costs to DCs are different
- Store inventory level planning and replenishment software allows for delivery times from preferred and alternate DC(s)
- Order processing software supports splitting order fulfillment to preferred and alternate DC(s)
- Order processing software supports order completion from multiple sources

ERP-OMS-WMS Integration

Understanding your **Corporate-based Host Systems** capabilities are critical to making the right decisions on your future **Supply Chain Execution** solution:



Key Features Multi-DC's

Best of Breed - DC Level Software:

- TMS supports multiple ASNs for purchase orders shipped to more than one DC
- TMS allows delivery scheduling at multiple DCs for same PO
- WMS supports receiving remainder of a PO line partially received at another DC
- WMS allows receiving returns shipped from another facility
- WMS waving and shipment planning capable of matching delivery dates with product from other DC
- TMS supports coordination of shipments to arrive at customer from different facilities

Warehouse / WMS Levels

Low Volume

- Tier 3 WMS
- Picking-paper directed
- Rider truck / cart picking
- Hand picking from flow rack, shelving or decked racking
- Discrete order picking
- 1+ storage fixture types
- Manual consolidation



Medium Volume

- Tier 2 WMS
- Radio frequency
- Pick & pass (zone route)
- 2+ storage fixture types
- Small batch picking
- Pick to light or voice directed
- Carousels
- Sliding shoe sorter



High Volume

- Tier 1 WMS
- More automation-hybrid
- Radio frequency
- Wave picking
- Higher speed conveyors
- Increased versatility
- 3+ storage fixture types
- Greater accumulation
- Cross belt & tilt tray



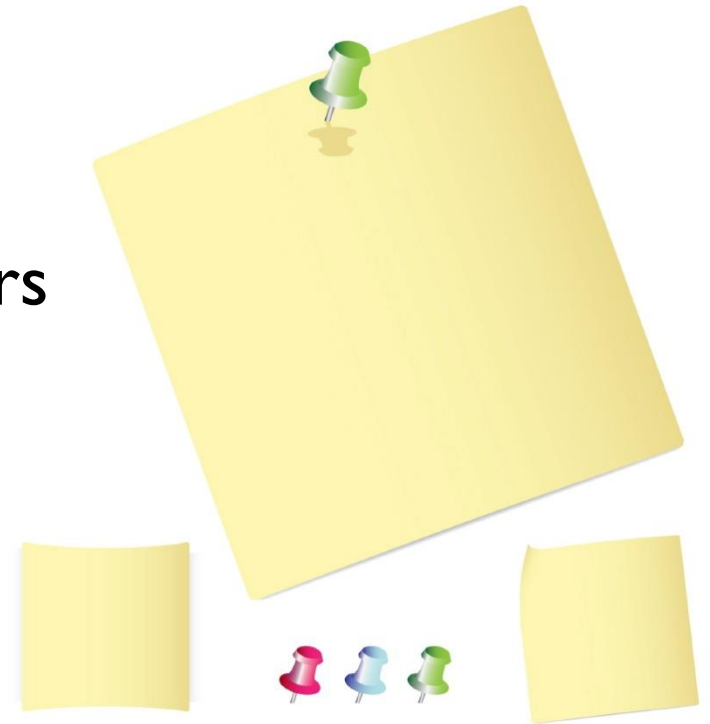
WMS – Memory & Tier 3

Memory

- No location address
- No automated sorting of orders

Tier 3 - Paper/Stock Locator

- Location address
- Record putaway location
- Typically fixed forward pick locations
- Batch processing



WMS – Tier 2

Tier 2 - RF / Stock Locator / ERP Level

- Real-Time
- Auto-ID
- Operator directed putaway
- May have pre-routed pick lists
- May have cycle counting



Radio Frequency allows the Stock Locator / WMS to process information real-time.

WMS – Tier I

Tier I - RF / Best of Breed WMS

- System directed tasks
- Task-interleaving
- Continuous cycle counting
- Labor planning
- Cross docking
- Cartonization
- Re-warehousing



More Tier I Functionality

- Order Planning & Scheduling
- Unit of Measure Conversion
- Location Management / Slotting
- Inventory Allocation
- Shelf Life Monitoring
- Lot & Serial Number Tracking

More Tier I Functionality

- Cycle Counting
- Replenishment & Consolidation
- Task Assignment & Monitoring
- Reverse Logistics
- Scalability & Configurability
- Upgrade Support

Ramp-Up Your WMS

- Provide real-time view of inventory by SKU, quantity, lot number, serial number & shelf life by location.
- Facilitate a quick match of available resources to current & expected inbound, replenishment & outbound workload.
- Select the best operators & equipment for tasks based upon proximity, skill sets and task priority.
- Direct operators to immediately store or cross-dock receipts.
- Support returns processing & reverse logistics.
- Use task interleaving to minimize deadheading.
- Optimize order consolidation, wave planning, inventory allocation & pick sequencing.

Ramp-Up Your WMS

- Identify consolidation opportunities to free space and reduce outside storage requirements.
- Support bill of materials, work order and value-added processing.
- Update inventory records as events occur.
- Provide accuracy that allows replacement of full physicals with scheduled and anomaly-triggered cycle counts.
- Time stamp each transaction and identify the operator who performed it.
- Measure workforce performance and provide input for incentive programs.
- Support supplier and carrier performance measurement.

Functionality Walk



Receiving

- Operator Assigned to Receiving
- Bar Coded Pallet ID (Scan or Key-Enter)
- (Verify Product, Quantity & Condition)

- Key-Enter Order #, Product ID, Quantity & Condition
- (Pre-Printed License Plate)



- Stage
- Crossdock
- QC Move
- Putaway

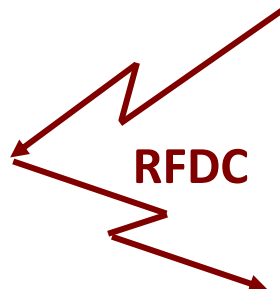
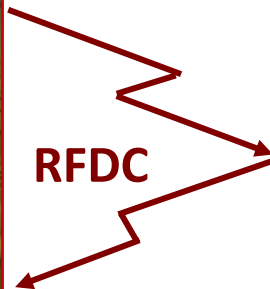
- ✓ Match LP to ASN or Retrieve PO
- ✓ Validate Receipt
- ✓ Resolve Exceptions
- ✓ Check Demand
- ✓ Issue Task
- ✓ Update Inventory Records

- (Print & Apply LP)
- Stage
- Crossdock
- QC Move
- Putaway

Putaway / Move

- Operator Assigned to Putaway / Move
- Scan License Plate

- Move to Designated Location
- Scan Location Bar Code



- Storage
- Crossdock
- Quality
- Returns
- Other

- ✓ Validate Location
- ✓ Resolve Exceptions
- ✓ Issue Drop Instruction
- ✓ Update Inventory
- ✓ Issue Next Task

- ✓ Confirm Drop
- ✓ Await Next Task

Inventory Management

- Lot, Date Code & Serial Number Tracking
- Shelf-Life Monitoring & Rotation
- Catch Weighing
- Routine & Exception Cycle Counting
- Full Physicals

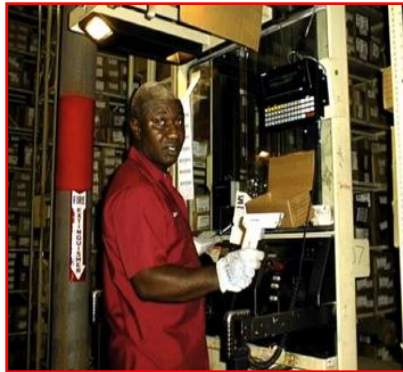
Replenishment

- Forward Pick Locations
- Floating Forward Pick
- Replenishment Trigger Controls
- Demand Replenishment
- Batch Replenishment
- Re-slotting

Picking

- Operator Assigned to Picking
- Ready for Next Pick Task

- Move to Location
- Scan Location Bar Code



RFDC



WMS

RFDC



- Display Pick Location

- ✓ Validate Location
- ✓ Issue Pick
- ✓ -----
- ✓ Validate Item / Quantity
- ✓ Resolve Exceptions
- ✓ Update Inventory
- ✓ -----
- ✓ Issue Next Pick

- Scan Item Bar Code/LP
- Pick / Confirm Quantity
- -----
- Await Next Pick

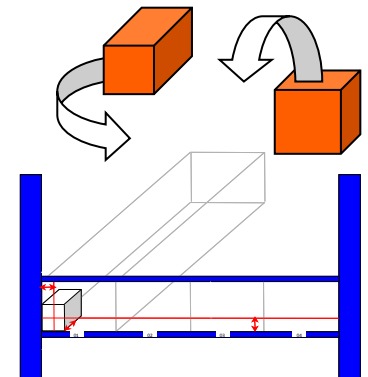
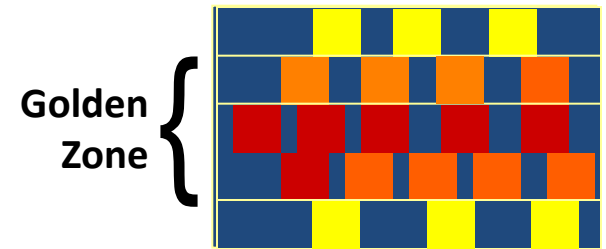
Staging / Shipping

- Trailer Scheduling / Processing
- Staging Location Management
- Staged Load Confirmation
- Door / Truck Verification
- Shipping Labels
- Manifests / Bills of Lading
- Shipment Confirmation

Slotting

Use order & SKU activity profiles to deploy upon historical & anticipated volume.

- Improve Space Utilization
- Reduce Travel Times
- Increase Pick Rates & Throughput
- Optimize Replenishment Activity
- Reduce Damage
- Improve Safety
- Simplify Retail Restocking



Slotting – Off The Shelf

OptiSlot - C:\Documents and Settings\Tim Riehl\My Documents\Optricity Corporation\OptiSlot Demo\BP\BP-1.osp

File View Tools Item Location Help

General Configuration Moves List Comparative Graphs Reports Project Properties

Slotting: IGG_100 - Vel_80 - R Total Score: 86.6

Logical View

Score: Total Score Item Att: Unit Movement Slot Att: Locked/Unlocked

Pair Details

View Options

Slot Details

Number: B20302
Dimension: 85.00_118.00_12.00
Slot Type: CF SH Variable - Lights

Item Details

Name: WASA CRKR SESAME TST WHT
130 - Cookies & Crackers (Retail Group)
Case Dimensions: 12.00_15.20_5.00
Unit Mvmt: 621.00
Cube Mvmt: 327.750
Case WT: 6.200
Score: 100.00

Goals Scoring

- Item Grouping Goal, Score: 100
- Unit Movement Sequence Goal, Score: 100
- Item Grouping Goal, Score: 100
- Total Score: 100

OK Cancel

Logical View Overhead View Partitions Goals & Constraints Slot Sequencing Properties Graphs Reports Velocity Forecast Facility Analysis

Row	SKU	Name	Code	Retail Group	Case Dimensions	Case Cb	Case WT	Unit Mvmt	Cube Mvmt	SJ Mvmt	Min Count	Pds in Slot	Slotted Periods	Created	Consider	Score	Pick Path
4185	7091410	WASA CRKR SESAME TST WHT	130	130 - Cookies & Crackers	12.00_15.20_5.00	0.528	6.200	621.00	327.750	621.000	187	0.300	0.029	02/18/09 10:08 PM	Yes	100.00	201
4186	7091370	WASA MULTI GRAIN CRSPBD	130	130 - Cookies & Crackers	14.50_15.00_5.00	0.629	8.000	910.00	572.700	910.000	182	0.200	0.018	02/18/09 10:08 PM	Yes	84.00	196
4187	7091530	WASA SOURDOUGH RYE CRSPB	130	130 - Cookies & Crackers	14.30_15.30_5.00	0.633	8.000	552.00	349.456	552.000	166	0.300	0.025	02/18/09 10:08 PM	Yes	100.00	201
4188	7015920	WATKINS OG NUTMEG	63	063 - Snacks - Can & Box	5.00_8.00_3.50	0.081	2.160	10.00	0.810	10.000	3	0.300	1.400	02/18/09 10:08 PM	Yes	100.00	390
4189	7015970	WATKINS ORG BASIL	63	063 - Snacks - Can & Box	5.00_8.00_3.50	0.081	1.320	45.00	3.646	45.000	14	0.300	0.311	02/18/09 10:08 PM	Yes	60.00	397
4190	7015980	WATKINS ORG BEEF SESNING	63	063 - Snacks - Can & Box	5.00_8.00_3.50	0.081	3.850	9.00	0.729	9.000	3	0.300	1.556	02/18/09 10:08 PM	Yes	100.00	395
4191	7015900	WATKINS ORG BLK PEPPER	63	063 - Snacks - Can & Box	6.10_9.90_4.20	0.147	4.200	49.00	7.192	49.000	15	0.300	0.224	02/18/09 10:08 PM	Yes	60.00	392

Number	Dimension	Slot Type	Slot Rating	Reserve Rating	SU Orient	Slot Unit Count	Slot Unit Stacks	Slot Unit Faings	Slot Units Deep	Slot Unit Cube	Useful Cube	Slot Marking	Locked
B20302	85.00_118.00_12.00	CF SH Variable - Lights	10.000	25.000	15.20_12.00_5.00	18	2	1	9	0.528	40.631	24,3	<input type="checkbox"/>

Is ERP an Option?

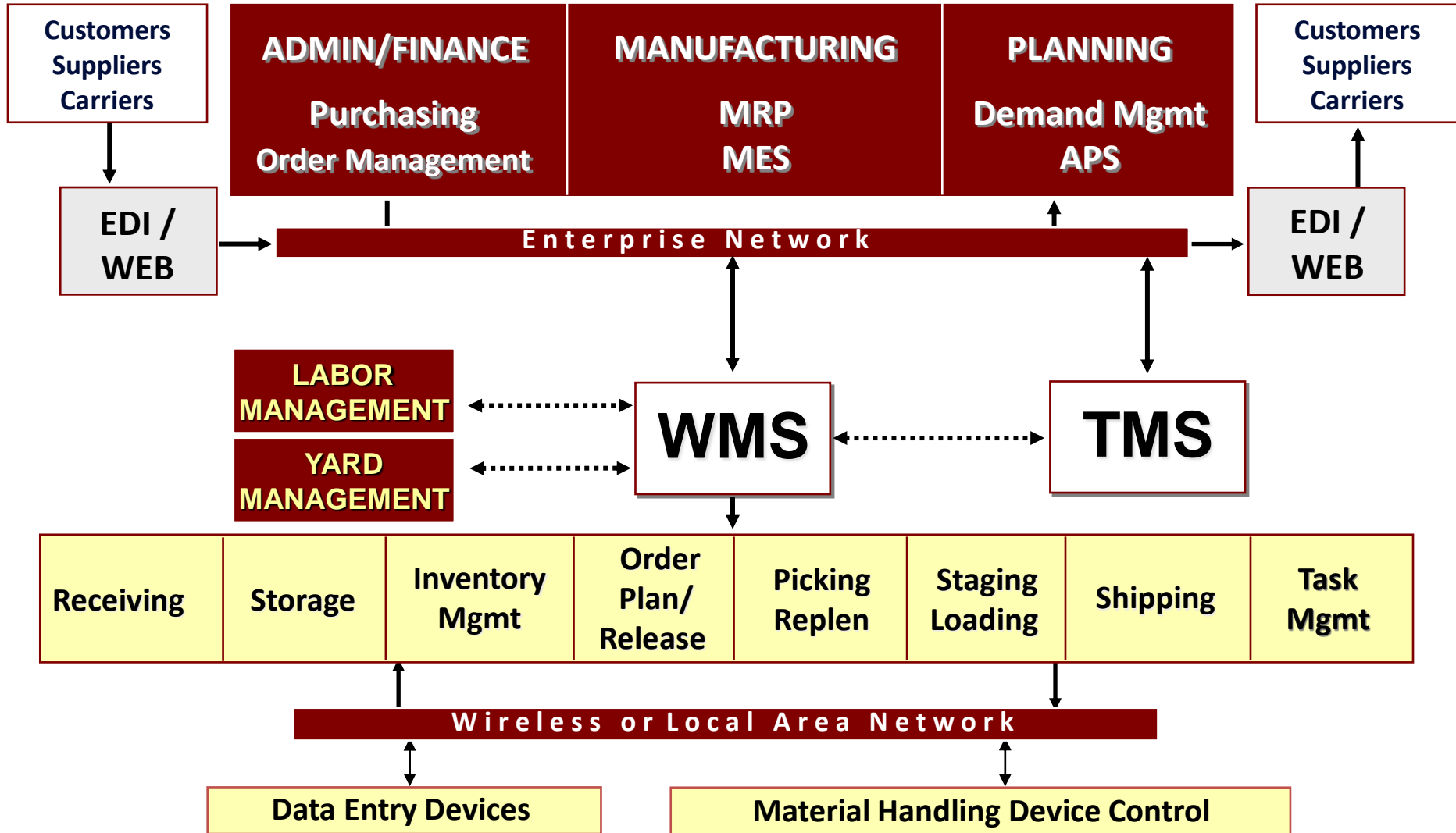
What about our ERP?

Can we get the job done with our ERP?

We have heard that it will cost less than a best-of-breed solution and will enable us to avoid all of the hassles associated with interfaces and integration.

Traditional Hierarchy

ENTERPRISE SYSTEM



The Lines Are Blurring



Latest and Greatest

What's New?

SOA & WEB Services

The screenshot displays the ViaWare 7.0 web interface. On the left is a navigation menu with categories like My Provia, Execution, Configuration, and Administration. The main area shows 'WARE BUILD' configuration options and a table of warehouse data. A smaller window shows a detailed configuration for 'Work Zone Management Access Points'. A Microsoft Excel spreadsheet is also visible, showing a table with columns for Location, Type, Door Type, VAS Zone, Loc, and Sat Zone.

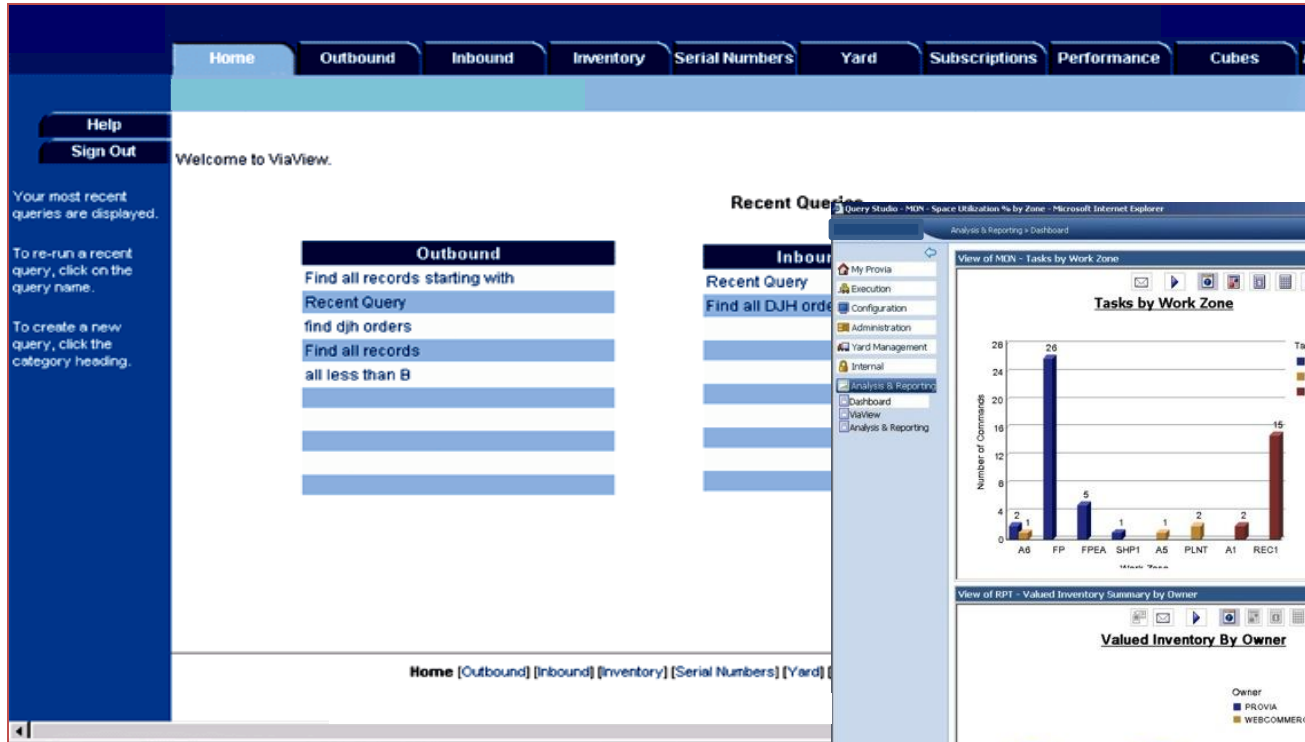
Location	Type	Door Type	VAS Zone	Loc	Sat Zone
1	E148	FP	27	A1	
2	FP317	FP	26	FP	
3	FP205	FP	25	FP	
4	D125	FP	26	Z1	
5	D125	FP	26	Z1	
6	D118	FP	25	FP	
7	D160	FP	25	FP	
8	D163	FP	25	FP	
9	E111	FP	27	A1	
10	E105	FP	27	A1	
11	E119	FP	27	A1	
12	E163	FP	27	A1	
13	E167	FP	28	A1	
14	E181	FP	28	A1	
15	D162	FP	25	FP	
16	D116	FP	25	FP	

Simplified Updating & Configuration

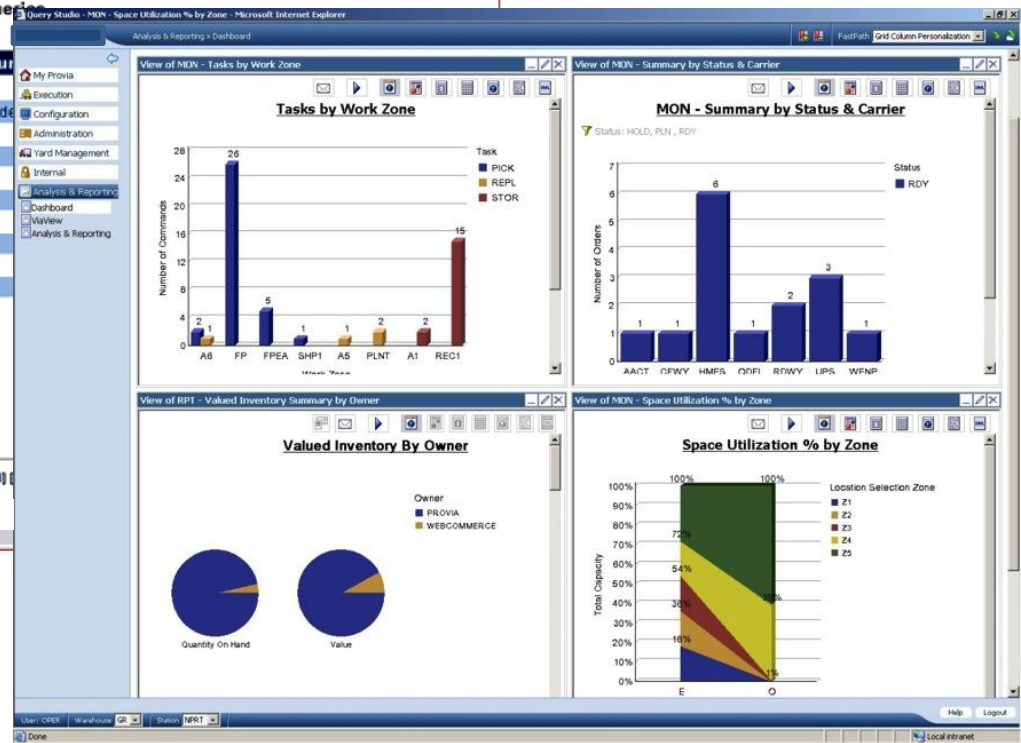
The screenshot shows two Pocket PCs displaying the mobile interface of ViaWare 7.0. The screens show 'Basic Receiving' information, including 'RECV Warehouse ID', 'Container', 'Part Info', 'Recv Info', and 'Addtl Info'. The interface is designed for handheld use with a numeric keypad and function buttons like SCAN and ESC.

What's New?

Richer



Dashboards



On-Demand WMS

READY FOR PRIME TIME?

- Hosted (SAAS) solutions with basic WMS functionality
- Initially developed to provide affordable solutions for small to medium size warehouse operations
- Now being considered by contract manufacturers & 3PLs
- Pricing models:
 - Subscription fee ~ \$500/month
 - Monthly fee based upon number of users
 - Subscription fee plus transaction fees ~ \$195/month plus \$.25/transaction

Why & How to Modify your Legacy WMS?

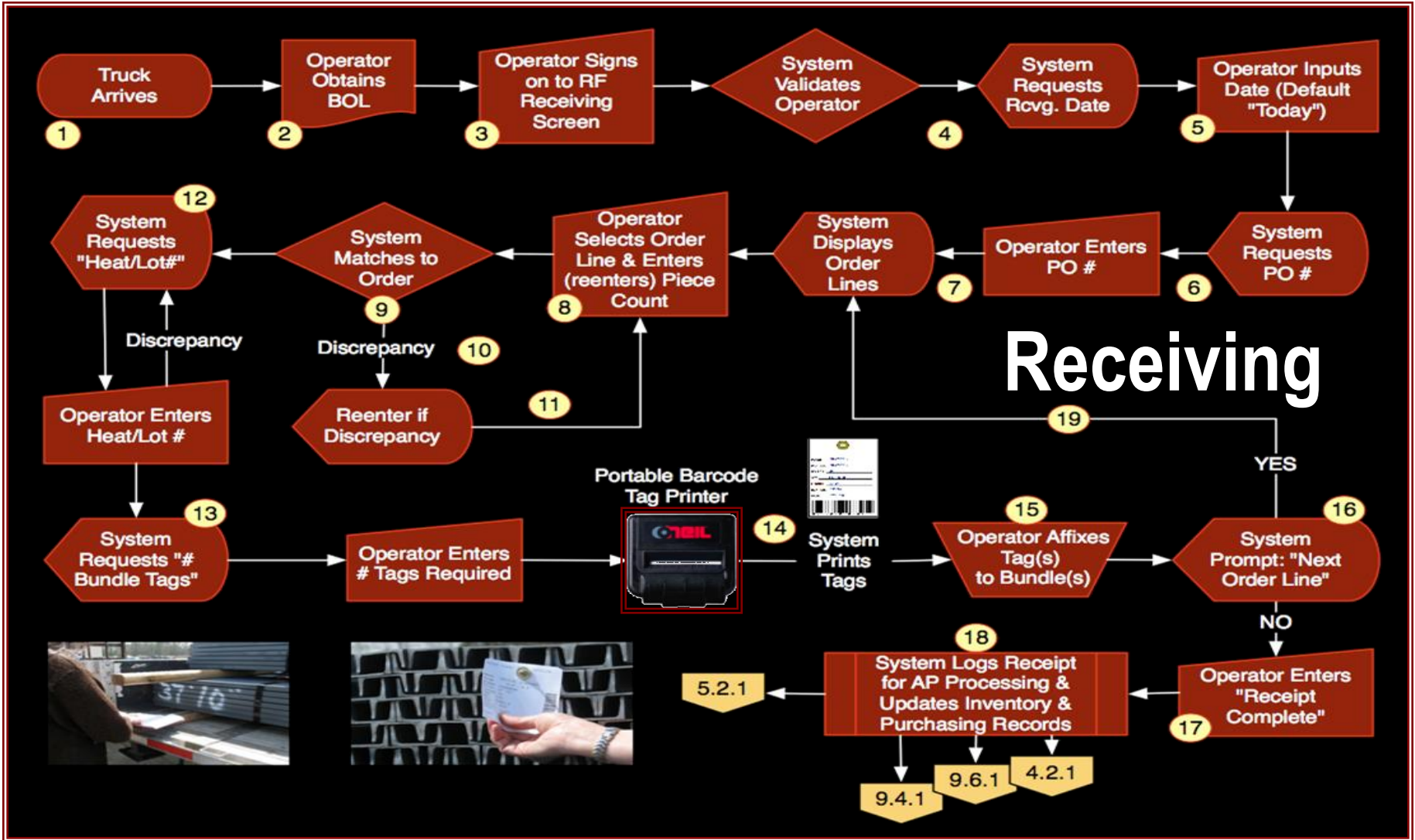
Why Improve your WMS?

- Inventory Accuracy & Turns
- Space Utilization, Stock Rotation
- Order, Lot & Serial Number Tracking
- Backorder Handling/Crossdocking
- Resource Planning & Scheduling
- Labor & Equipment Productivity
- Performance Measurement
- Customer Service

Why Improve your WMS?

- Damage/Shrinkage
- Lost Stock & Safety Stock
- Search Times & Deadheading
- Paperwork/Human Error
- Physical Inventory Taking
- Labor, Equipment & Utility Costs
- Courier/Delivery Costs
- Outside Warehousing

How to Improve? – Start by Mapping



How to Improve? – Do a RoadMap

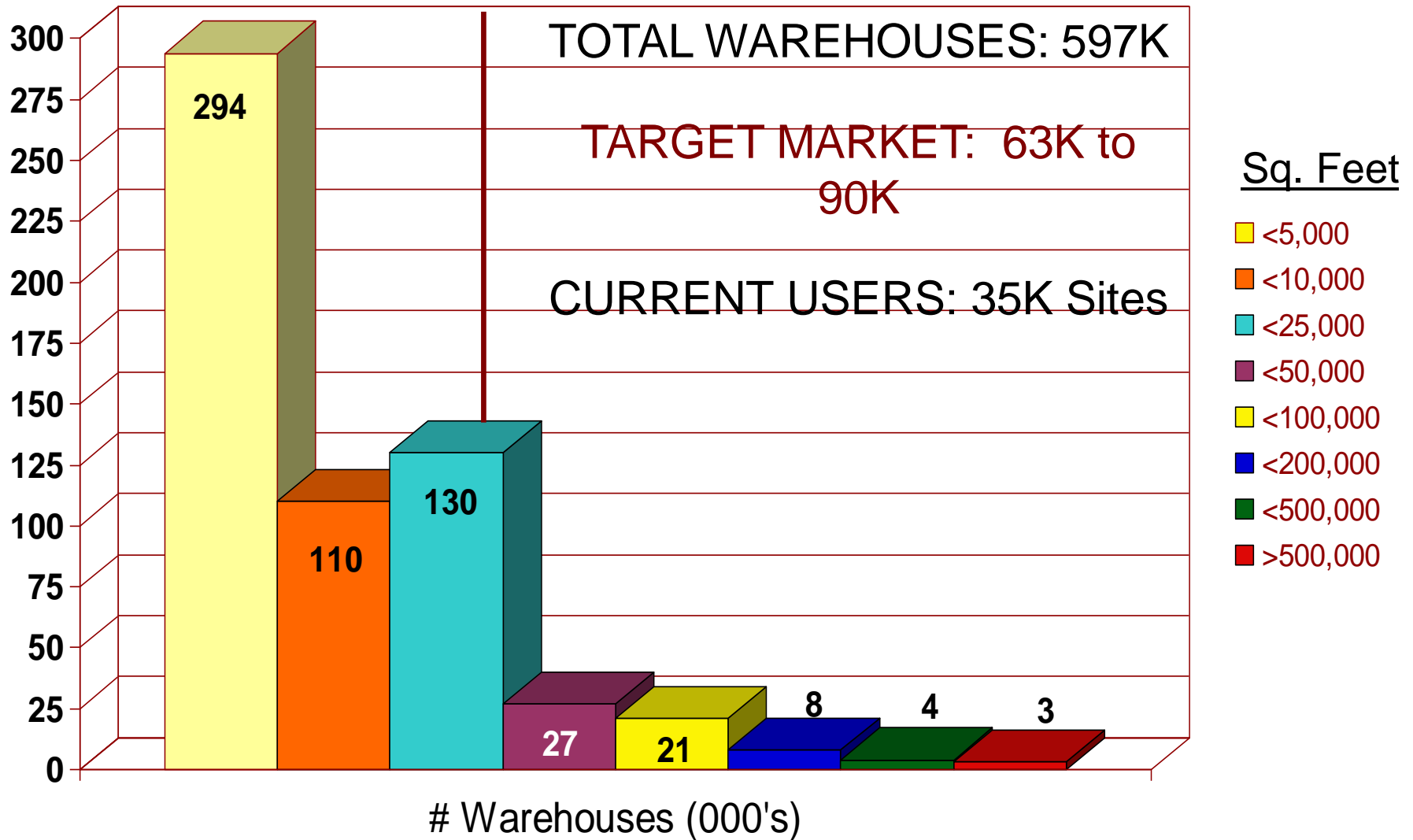
- Don't overlay WMS on flawed layouts & processes - it's a certain prescription for disaster.
- Do the homework necessary to build a detailed, defensible value proposition & business investment case.
- Get back to basics – look at how WMS can improve receiving, storage & picking – add functionality as confidence grows.
- Avoid customization – it adds cost, lengthens implementation time & increases risk.
- Depending upon your in-house background & expertise, recognize that the educating the prospect component of the supplier's sales cycle is not free.
- There are few shortcuts – successful deployment requires solid preparation, commitment & management.

BOB Landscape

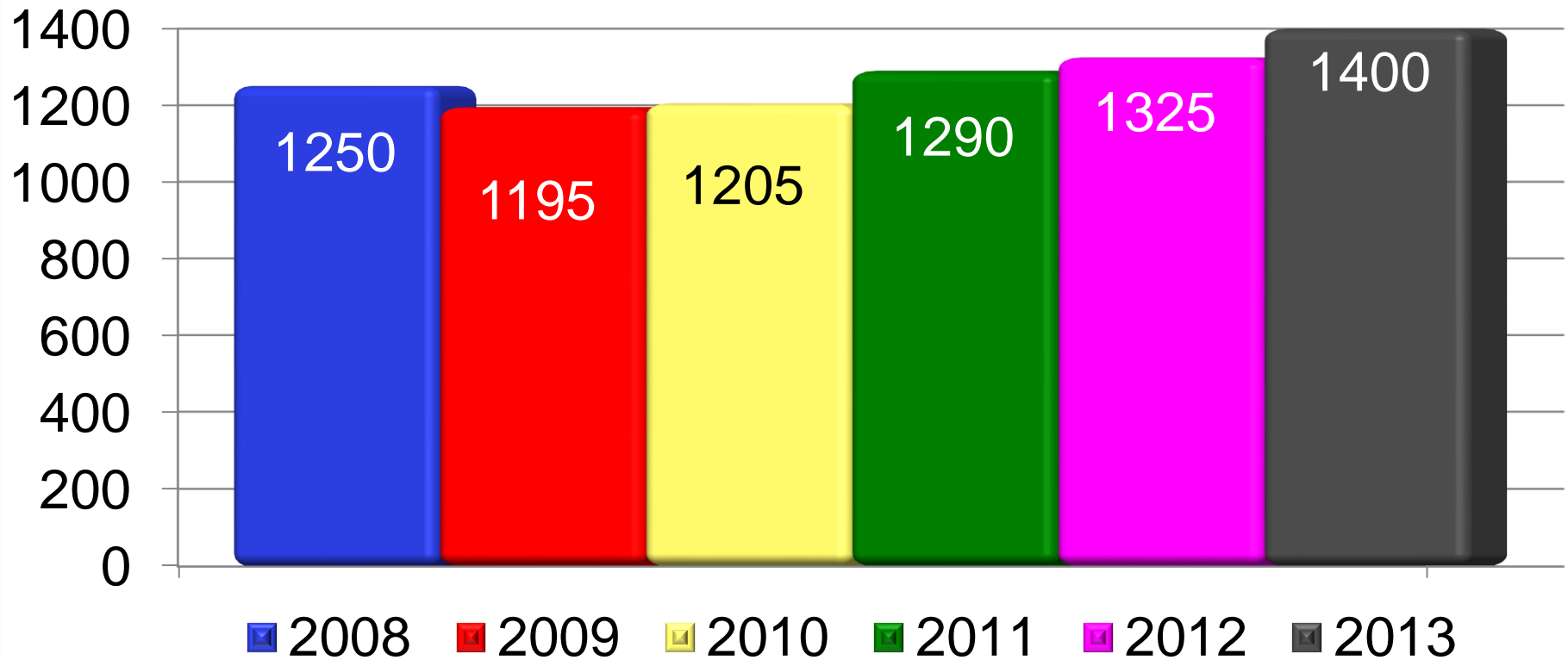
BOB Value Proposition

FEATURE	ADVANTAGE	BENEFIT	RISKS
System-directed, interleaved put, pick, consolidation, relocation & replenishment	Reduced deadheading, increased throughput & efficiency	Better labor tracking; lower labor & equipment costs per task	Worker acceptance of system-directed mode of operation
Client personalization & functional tailoring	Meet specific needs without “force fitting ” generic solution	Clients receive the functionality they specify	May deliver sub-optimal answers for certain tasks; added cost, possible delay.
Scheduled & exception-driven cycle counting.	Real-time inventory management	Increased inventory & storage location content accuracy	Balancing & prioritizing cycle counting with other tasks.
FDA, NAFTA & other regulatory compliance functions	Field proven modules as opposed to custom development	Lower costs to comply; shorter deployment time.	Completeness of fit with client’s specific needs; staying current with regulations.
User Training & Certification	Depending upon the supplier, comprehensive programs for ensuring operator readiness	Self-evident	Trainer familiarity with client environment & application

The WMS Market



BOB WMS Revenues



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