

Inbound Interfaces

- (1) Advanced Shipment Notification **ASN** (from manufacture)
- (2) Receipts Processing (put-away, **BOL** verification/variances, costing)

Outbound Interfaces

- (3) Replenishment of Pick Area (pick line)
- (4) Retail Order Collection and Peddle Routes
- (5) Truck Routing, Balancing, Load Diagrams (HOST or PC software)
- (6) Generate Orders and Loads sent to WMS for Picking
- (7) Confirm Orders / Loads Picked, and Print Invoices
- (8) Out-Bound Delivery to Retailers
- (9) Trade Returns from Retailer (route reconciliation)
- (10) Non-standard Product Flows (hot shots, dock sales, etc.)
- (11) Brewery Returns (empty bottles, kegs, pallets, defects)

Other Interfaces

- (12) Misc. Inventory Adjustments
- (13) Physical Count (over/shorts)
- (14) Labor Productivity Tracking (cases/hr, \$\$/case, product loss)

General HOST Route Accounting to WMS system integration issues and concerns

A **WMS run warehouse environment** is more complicated, and requires far more discipline. Warehouse staff turnover becomes a more critical problem, since training takes longer. Very careful planning and sufficient involvement from all participants is absolutely necessary.

It will always be difficult to practice **running WMS system in parallel** with a Distributors existing live warehouse operations. A simple phased-in approach is difficult to accomplish. Therefore, a complete design and detailed process walk-through of every single task affecting inventory and product movement is critical. This examination process must be done in the context of both the new **WMS software** and HOST Route Accounting Software (RAS).

Full commitment and cooperation is required from all the Distributors personnel, including: Senior Mgmt, Supervisors, IT Managers, Admin Staff, Warehouse personnel, Salesman and Drivers, etc. In addition, a total commitment from the Distributor's Host RAS software provider is required during the interface design, implementation, and on-going support of this HOST + **WMS system** product interfaces.

Using a WMS system to process inbound activities will be far easier to tackle first and requires less integration effort with the HOST system. **However, to fully realize the value of a WMS system and keep track of perpetual inventory, all activities affecting inventory must be processed through both system(s).** All brewery receipts and returns, all retail sales orders and trade returns, all non-standard product movements, and all inventory adjustments must be processed in both system(s) correctly.

There are essentially **five major components** to this type of environment: (1) HOST system, (2) **WMS system** (3) HOST-WMS interfacing network (4) RF Handhelds and (5) RF wireless Network. Keeping all these systems running and in-sync will be a challenge. Equipment training and trouble-shooting guidelines need to be firmly in place. Recovery and manual back-up procedures need to be defined and published. Users and supervisors must be disciplined, and understand the importance of not circumventing normal system procedures.

The following pages and **diagram** outline the INBOUND, OUTBOUND, and OTHER system **INTERFACES** required to support a **WMS system** working in concert with a beer wholesalers HOST enterprise system. Included in this analysis, is a brief description of each major process and any **identified challenge** facing the integration effort.

Senior management at one major FOOD Distribution Company .. simple advice to anyone under taking such a project:

“Don't rush it, and don't... put your business at serious risk”

Inbound Interfaces:

(1) **Advanced Shipment Notification (from brewery)**

Description: Transmit from Brewery and receive ASN file into WMS and eventually HOST.

Challenge: The manufacture's BOL documents do not always match ASN. Determine best method for sending and receiving ASN files. Currently the Brewery Order Logs and Shipping Schedules are sent electronically in paper and data file formats.

(2) **Receipts Processing (BOL verification / variances, puts, A/P and inventory costing)**

Description: Process brewery receipts against ASN file using RF.

Challenge: Determine if 1 step or 2 step process will be used. Determine process for directed put-a-ways. Will WMS have sufficient view of all transactions affecting inventory movement to direct puts? Determine all procedures necessary for handling receipt variances with Brewery and Freight carries. Develop software to process expected and actual receipts file to HOST containing all information needed to properly update inventory and accounting files.

Outbound Interfaces

(3) **Replenishment of Pick Area (pick line)**

Description: Wholesalers generally pick orders and full load SKUs from the Pick Line. Depending on warehouse space, this area contains all needed product for next day delivery and/or is continuously replenished during the order picking and loading cycle.

Challenge: Establish normal stocking levels for Pick Area. Use RF terminals to direct on-going replenishment activities. Will movement from bulk storage to pick area be captured by SKU, code dates, and quantity (full/partial pallets)??

(4) **Retail Order Collection and Peddle Load Preparation**

Description: Presell orders are recorded in the field using Handheld computers for next day delivery. Orders are transmitted to Host system. Bulk deliveries are generally picked by stop, all other presell orders are aggregated by item (SKU) and pick by load. Peddle routes (driver sale) use driver prepared forms to specify total load quantities.

(5) **Truck Routing, Route Balancing, Load Diagrams (HOST or PC based)**

Description: Presell orders grouped together by assigned route # specified in the Customer Master file. Tentative routes built and reviewed to match truck capacities, number of stops. Load diagrams are produced and used by warehouse staff to load trucks. Many distributors already use one or more PC base software packages that reviews total orders and can assign orders to routes. This software also checks cases / weight restrictions, and can produce customized load diagrams by individual route and type of truck.

Challenge: How best to blend (integrate) specialized Truck Routing Software with WMS system data file(s) requirements and capabilities? An example of this challenge: Where does the Truck Routing Routing OUTPUT information go when process done. To Host-RAS and then WMS system, or directly to WMS? How do special Truck Loading rules and customer delivery.

Outbound Interfaces - continued

(6) Generated Orders and Loads sent to WMS for Directed Picking

Description: Host system sends order and load files to WMS system.

Challenge: Host system and special ROUTING Software must write software to generate Order files / Load files in a form the WMS system can use. How best to communicate different route pick methods - pick by stop vs. pick by load routes? Directed order picking includes case picking by stop and by route. How will picking by cases by code dates be tracked, since there are no scan-able bar codes on case cartons?? Will WMS be used to track any pre-staging of selected presell orders??

(7) Confirm Orders / Loads Picked, and Print Invoices

Description: After orders and load sheets are picked, WMS must send to HOST system an Order confirmation file of actual quantities picked.

Challenge: Host order and load out files are updated with actual ship quantities, so that delivery invoices, driver manifest, etc. may be printed.

(8) Out-Bound Deliveries to Retailers

Description: Delivery trucks are loaded during the evening and early morning hours.

Challenge: What final documents driver takes with him, will come from the WMS system?

(9) Trade Returns from Retailer (Route Reconciliation)

Description: Delivery trucks return from the trade with empty kegs, empty bottles, refused orders, damaged product, and old beer. This activity is reflected in both the physical production truck, the delivery paper work (invoices and load sheets), and the cash or credits extended to the customers.

Challenge: Determine precise steps for processing returns. How and where does paper work flow? What information is keyed into WMS, and what data needs to flow from WMS to the HOST system? Since this information is generally at the customer order level, it must tie back to the order#, route#, and customer account# so that Route Reconciliation on the HOST can be completed.

(10) Non-standard Product Flows (Hot shots, Dock Sales, etc.)

Description: There are numerous NON-Standard Flows of product in a warehouse. Examples of common business activities include: Hot shots (expedited orders to retail), route add-ons, 2nd route runs, employee sales, dock sales, trade swaps for breakage or old beer.

Challenge: Same as Trade Returns. What data needs to flow from WMS to HOST. See above.

(11) Brewery Returns (empty bottles, kegs, pallets, defects)

Description: Wholesaler accumulates empties, pallets, etc. and periodically returns this material back to the brewery. The new WRS is used to schedule and track these shipments. The wholesaler must enter this data twice: into WRS and into his HOST system.

Challenge: How will WMS, HOST and WRS be used to process brewery returns. How many points of data entry will be required??

Other Interfaces

(12) Misc. Inventory Adjustments

Description: Warehouse breakage, out-of-code date processing, re-pack processing are normal activities occurring every day in the warehouse.

Challenge: Determine precise steps for processing these adjustments, including what, when, and where on paper work flow. Software to process a WMS file and update the Host system's inventory files with adjustment transactions (**by reason code**).

(13) Physical Count (over/shorts)

Description: Physical counts of actual product on the floor will be conducted daily or less frequently. Physical Counts will be matched to the **WMS System's perpetual inventory balances**.

Challenge: How will count variances be handled?. When will count variances be officially recognized in the perpetual system and in the accounting system? How will HOST and WMS system inventories be checked, synced, and differences be reconciled??

(14) Labor Productivity Tracking (cases/hr, \$\$/case, product loss)

Description: Labor and productivity metrics provide an excellent means for tracking performance.

Challenge: What tools and interfaces are required between WMS, HOST and Payroll systems??

Wholesaler WMS Investment Requirements:

- Forklift mounted RF equipment
- Handhelds with Scanning RF equipment
- RF wireless Network installed in Warehouse
- WMS software and hardware
- Develop interfaces with Distribution HOST computer system
- Warehouse management Consulting fees
- Training staff on WMS and new operational processes

WHOLESALE “WMS” PROJECT OBSERVATIONS:

***Comment: “It is like turning a kite flyer into a jet airplane pilot!”**

- WMS technology provides only 1 component to successful warehouse operation. Avoid piloting a WMS if wholesaler’s warehouse processes are not strong. **It is not a quick fix panacea!** A successful WMS implementation requires:
(1) Discipline and structure (2) Strong management involvement (3) Operational Methods and Procedures Good.
- Typical WMS implementation life cycle is 8 –12 months after Vendor selected Rolling out into existing warehouse facility is tougher What is Distributor’s looking at in terms of implementation time frame ??
- WMS systems are very expensive to fully implement. **A true ROI** from installing a WMS at a wholesaler will be difficult.
 - WMS Software, Hardware, RF networks are all expensive**
 - Consulting and Implementation costs are high
 - WMS must be integrated with Wholesaler HOST (Route Accounting System)
- Food Distributors have benefited with warehouse automation systems
 - **The have thousands of SKUs - 10,000 plus**
 - Can truly use the additional sophistication and automation
- Wholesalers tend to be space rich, use of vertical space not as critical.
- **Question....is there a way to do WMS implementation in controlled phases?
Such as do peddle and draft routes first, then presell package routes later.**