AWMS™ Inventory Management

Inventory management is the heart of any WMS. An AWMS™ provides some interesting concepts in how inventory is managed in meeting the requirements of finance as well as operations. Finance and operations have differing obje ctives in how inventory is handled. To finance, inventory is an asset, to operations inventory ultimately represents goods that are to be processed in some manner, either to ship them or prepare goods for shipment. To finance inventory is represented by "data". The "data" itself cannot be lost, damaged, or unavailable. To operations, physical items represent inventory. These physical items can be lost, damaged or otherwise unavailable for any practical operational purpose. An AWMS ™ has some inherent advantages in the way it is able to track and manage inventory meeting the needs of both the financial and operational organizations.

The conditions that create differing views of inventory are generally summarized with the word "exceptions". Elimination of "exceptions" would allow only one view of inventory that would satisfy the needs of both operations and finance. Exception elimination and exception reduction need to be seen as separate concepts with exception reduction being a con tinual endeavor and exception elimination seen as an unlikely goal. There are several problems with exception elimination. The first is that the concept has a "boundless" time frame. To totally eliminate exceptions would mean that it would be impossible from the current time forward to have another un-expected event. If even one exception were to occur each year, there must still be a procedure, method or means defined to handle it. The second problem with exception elimination is by definition an exce ption is an un-expected condition. Rules and processes can be established to correct for expected errors, but unexpected errors are much more difficult to anticipate and define corrective procedures. The third problem in elimination or even reduction of exceptions is that many times it is less expensive in terms of operations to correct a detected exception than it is to prevent it from happening in the fir st place. There is a complete VA S white paper that discusses exception handling.

The differing views of inventory by finance and operations are a basic "phasing" issue where eventually the two views will coincide either with or without intervention. In operations there are both temporary and long-term conditions that essentially make inventory inaccess ible. This inaccessible inventory creates operational limitations. If the condition is only temporary it will not ultimately impact the financial view of the inventory, however the long term or permanent conditions will impact the financial view of the i nventory. The major problem is that it is initially and usually impossible to determine whether or not a condition will be temporary or permanent. Immediately updating the financial view of the inventory upon discovery of a physical inventory discrepancy may be possible in some organizations, however in most financial information systems, it is required that operations resolve the discrepancy before reporting it. Delaying the reporting of the discrepancy requires the information system for the operationa l organization to support management of this "in limbo inventory". This is the situation where an AWMS has inherent advantages in inventory management.

A good inventory management system (IMS) requires good storage location management. If the location of an item is not known, for all practical purposes the item has no value, it can not be processed, shipped, returned, fixed, or op erated on in any manner. The VA S AWMS™ has

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"adaptive storage location" features that allows inventory to be tracked in much gr eater detail and with much more flexibility than with most WMS inventory management systems. There is an entire white paper dedicated to the AWMS™ location management system. For the purpose of this paper, the features of the AWMS™ location management sy stem are referenced but the details of those features are found in the location management system white paper.

The tracking of items in the VAS IMS is on a "stock record" level. A stock record represents a specified quantity or number of units of a single SKU in a unique location. This stock record contains (in addition to other data) the current location of the stock and the previous location of the stock. The current and previous locations of the stock are called a "cont ainer". A "container" in the VAS AWMS™ represents an "abstract" location, and the actual physical location may be a carton, tote, rack, bin, conveyor, a trailer, a worker, an office or any other "locating" concept. A complete description and the attributes of a "container" are describe d in the AWMS Location Management white paper (VAS FT016).

As product flows through an operation, the stock records for the items are continually being updated indicating their current (and updating their previous) locations. AWMS™ "locations" or "containers" are normally established for all actual stock holding areas as well as the conveyance paths, processing areas, workstations, and any other place that product may be held either temporarily or permanently. There are numerous occasions in operations whe re a portion of the items in one container are removed and put in a different location or container. This is the operation that we normally refer to as picking. In these situations, stock records are "split" as items are removed from a container. The or iginal stock record is updated reflecting the new balance and a new stock record created that identifies the new parent container or location. Conversely, there are instances where like items are consolidated into a single container. In this situation the stock records, provided they are the same SKU, may be joined.

In any operation, "discoveries" are made that may indicate that the expected is not consistent with the observed. The AWMS™ and its inherent inclination to accept the latest and most current information immediately adapts to the new discovery, normally (a s defined by the system requirements) questioning the discovery -- providing that a person has made the discovery. The operation is allowed to continue incorporating the newly discovered information into the production flow, however flagging the exception for resolution in order to re-synchronize the operational data with the financial data. This "discovery" process will normally entail assigning a stock record or a portion (spitting a stock record) of a stock record to another location (updating the curr ent location and previous locations of the stock record). Usually the new location to which the stock record is assigned has an attribute itself of "un -allocatable", making that stock not available for processing, but still carried on the financial books.

It is imperative to operations that processing can continue while the resolution process of discoveries is being executed. It is also just as imperative that the resolution process itself may be scheduled and integrated with available workforce and resou rces. The AWMS approach to inventory management seamlessly provides this capability.

An AWMS™ provides features that allow both financial and operation inventory management to co-exist providing each organization with tools and data to support their own i ndividual needs. Ultimately the AWMS™ IMS approach leads to greater inventory accuracy, less inventory shrinkage, better fulfillment compliance, and a more timely and accurate view of the actual operation for both financial and operational perspectives.