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# The First Steps to Achieving Effective Inventory Control

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***EIM***

Effective Inventory Management, Inc.

***This report is the first in a series of white papers designed to help forward-thinking distributors increase efficiency, customer service, and profitability with smart inventory management strategies based on tried and proven methods and best practices.***

We've worked with thousands of distributors throughout the world. These firms have distributed nearly every type of product imaginable. Despite the variety of their locations and industries, we've found when we start to work with these distributors that they typically have very similar inventory-related problems:

- **They have too much of some products.** This excess inventory and dead stock leads to decreased turnover and profitability.
- **They experience stockouts of other products.** This results in backorders, lost sales, and dissatisfied customers.
- **They don't know what is in stock.** The on-hand quantity in their computer system does not agree with what is actually on the shelf in their warehouse.
- **They can't find material in their warehouse.** They know the material is "out there somewhere" but they don't know exactly where it is located.

As a result, many distributors don't have control of their inventory. In fact they feel that their inventory is controlling them! If you are in this situation please don't give up. Achieving effective inventory management does not require a PhD or Herculean efforts. You just need a systematic plan to achieve effective inventory management (EIM). What is EIM?

*Effective inventory management allows a distributor to meet or exceed customers' expectations of product availability with the amount of each item that will maximize their company's net profit or minimize its total inventory investment.*

Effective inventory management is the result of outstanding inventory control and inventory management. What is the difference between inventory control and inventory management? Inventory control is managing the inventory that is already in your warehouse, stockroom, or store. That is:

- Knowing what products are "out there" and how much you have of each item
- Knowing exactly where each piece of each product is located in your warehouse
- Ensuring that all inventory remains in salable or usable condition
- Storing products to minimize the cost of filling customer orders

On the other hand inventory management is determining when to order products, how much to order, and the most effective source of supply for each item in each warehouse. That is, ensuring that you have the *right* quantity of the *right* item in the *right* location at the *right* time. Inventory management includes all of the activities of forecasting and replenishment.

This is the first in a series of white papers developed to help you achieve EIM. The question we are most often asked is, "where do we start?" The answer is inventory control. Unless you know exactly what inventory is in your warehouse, and whether that material remains in usable condition, you can't properly determine when to reorder products. If you actually have more of an item than the quantity in your computer system, you'll reorder the product too soon and have excess inventory. If you have less than the computer's on-hand quantity you won't reorder the product when you should and the result may be stockouts and customer service problems.

In this document we will discuss the first steps to getting your current inventory under control. We will help you determine what products you should stock, what to do with unwanted inventory, and how to organize storage locations in your warehouse. As you implement the following steps, observe the effect on your company's overall operations as well as the "bottom line."

## 1) Developing an Approved Stock List for Each Location

When you stock an item you are making a commitment—a commitment that the product will be available in reasonable quantities for immediate shipment or delivery to customers. Most distributors' warehouses are filled with two things: "stock" and "stuff." Stock is the material you intend to be in the warehouse. That is, the items necessary to meet or exceed customers' expectations of product availability. Stuff is everything else. You must separate the stock from the stuff in each of your warehouses. Our goal is to liquidate the stuff and arrange the stock items in such a way to minimize the cost of filling customer orders.

To determine what products you should stock, we suggest you sort the items currently in a warehouse based on each product's annual hits. Annual hits represents the number of times each product was ordered by customers, transferred, or used in an assembly during the past 12 months, regardless of quantity. You can view a "hit" as a line item on an order. Whether the customer orders one piece, 10 pieces, or 1,000 pieces of a product it is considered to be a single hit. Why do we rank based on hits and not the total quantity or material value ordered? Compare these three items:

Part Number	Annual Orders (Hits)	Total Annual Quantity Ordered	Total Annual Cost of Goods Sold
A100	2	5000	\$7500
B200	6	700	\$850
C300	50	124	\$524

Part #A100 had the largest total annual quantity ordered and cost of goods sold, but was ordered only two times in the past 12 months. Should this item be stocked? Maintaining a large quantity of a product that is only sold two times a year will negatively affect inventory turnover. Perhaps we could special order this product when it was ordered by a customer. While part #C300 had the lowest total quantity ordered and annual cost of goods sold, it was ordered by customers 50 times in the past year (just about once a week). Doesn't it make sense to stock this item? Remember that the first part of the goal of effective inventory management is to "meet or exceed customers' expectations of product availability." Apparently customers continually expect part #C300 to be available.



We sort products in descending sequence by the annual number of orders and assign a rank based on annual hits to each item. Look at this sample report:

Product	Hits	Accum Hits	Accum%	Rank
46916	523	523	25.97%	A
78691	400	923	45.83%	A
78792	389	1312	65.14%	A
120303	198	1510	74.98%	A
91	103	1613	80.09%	B
122378	62	1675	83.17%	B
120412	61	1736	86.20%	B
78893	60	1796	89.18%	B
400808	54	1850	91.86%	B
785723	46	1896	94.14%	B
78588	26	1922	95.43%	C
78590	22	1944	96.52%	C
785023	18	1962	97.42%	C
234340	15	1977	98.16%	C
78326	10	1987	98.66%	C
11234	9	1996	99.11%	D
78719	8	2004	99.50%	D
43212	6	2010	99.80%	D
109223	4	2014	100.00%	D
61160	0	2014	100.00%	X
78589	0	2014	100.00%	X
400300	0	2014	100.00%	X
401306	0	2014	100.00%	X
78523	0	2014	100.00%	X
120303	0	2014	100.00%	X
<b>Total</b>	<b>2014</b>			

The annual number of hits for each item is displayed to the right of the product number. The next column tabulates the accumulated number of hits through that item. For example, the accumulated hits for the second item (#78691) includes the hits for the first and second products. The percentage of total hits represented by the accumulated hits on each line is also displayed. Each product then is assigned a product rank:

Rank	% of Hits
A	The first 80% of hits
B	The next 15% of hits
C	The next 4% of hits
D	The last 1% of hits
X	No Hits

For many of our customers, 80 percent of total hits come from only 10–13 percent of the total products stocked. Utilizing this analysis, examine each of the “D” and “X” ranked items. These items are responsible for the last 1 percent of hits or have had no hits at all. Ask your sales or marketing people why each one of these items needs to remain a stocked product. For example:

- Is it a repair part that is necessary to support the sales of a profitable unit?
- Is it a product that you need to have on hand just in case a very profitable customer needs it in a hurry?
- Is it “show stock?” That is, products that don’t sell well but are necessary to demonstrate to customers that you carry a full line?

If an item falls into one of these classifications it is probably not generating a profit for your company. The sales of the other items it supports must be able to generate enough profit to cover the cost of carrying each of these products. If there isn’t a valid reason for carrying one of these products discontinue the item and put its remaining inventory in the “stuff” category.

What do you do if your computer system does not keep track of the number of times each product has been ordered? Don’t worry. There is another method for separating the stock from the stuff. Determine in how many of the past 12 months an item had positive usage activity (this is usually very easy to do with a report generator or in a Microsoft® Excel® spreadsheet). If a product had sales in three or fewer of the past 12 months (and is not a seasonal item) question why it should be retained in inventory.

## 2) Liquidate Your Stuff

Once we have separated the stock from the stuff in your warehouse, you need to start getting rid of the unwanted inventory. In doing so remember that inventory is not worth what you paid for it. It is worth what someone is willing to pay you for it. We have a simple rule for getting rid of stuff. The more we get for it the better, but anything you get above the cost of liquidation is “found money.” Most successful distributors have a documented plan for liquidating stuff. Among the strategies that have proved successful:

**Transfer the excess stock to another company location where the inventory is needed.** A product may be “dead” in one branch, but still active in another location. Why spend money to buy more of the product when you’ve already invested in inventory that is gathering dust at another company location? This option is particularly attractive if the cost of transporting the product between branches is a small fraction of the value of the item.

**Return material to the vendor.** The actual desirability of this option varies with each vendor. Some vendors are very good about accepting returns. Others assess so many charges and conditions that returning material is not a feasible option. Remember that the best time to negotiate the terms for the return of material with a vendor is before you issue a large purchase order. Train your buyers to continually remind their suppliers of the material they would like to return.

**Reduce the price to “move” the excess inventory.** Retail stores do it, why can’t you? This strategy works when customers have some discretion as to which of several items they will purchase. For example a customer might purchase a discontinued sink if the price is substantially lower than a similar item from normal stock.

**Offer your salespeople a monetary or some other incentive to sell the product.** Like reducing the price, this method is effective when a customer can choose between several products that will meet his or her needs. Sometimes it is almost miraculous how fast inventory can move when salespeople are provided with the proper incentive.

**Advertise the availability of this material to other suppliers.** Search for Internet sites that specialize in liquidating material using the words “surplus,” “inventory,” and the name of the product line that contains the material you want to dispose of. The Internet is particularly effective for liquidating material when there are a large number of potential customers. A product may no longer be popular in your market but still be needed elsewhere.

**Substitute the product for a less expensive item.** Suppose you sell water heaters. Your manufacturer replaced his model A345 with the model A365 that offers easier access to the heating element or is more energy efficient. You have three pieces of this discontinued 40-gallon heater in stock. Naturally, contractors ordering a 40-gallon heater want the new model. But when a customer orders a 20-gallon heater why not offer him one of the discontinued 40-gallon heaters at the price of a 20-gallon unit? *Remember, inventory isn't worth what you paid for it. It is worth what someone is willing to pay you for it.*

**Donate the material to a non-profit organization.** Can a school, church, or charity use some of your dead or slow-moving inventory? This alternative is especially attractive for sub-chapter "C" corporations in the United States. These companies can take a deduction of up to twice the cost of the inventory. Talk to your accountant or tax advisor for details and restrictions concerning material donations. A good source for finding organizations that can use what you have to offer is the National Association for the Exchange of Industrial Resources, 560 McClure St., Galesburg, IL 61402-8076 (1-800-562-0955 or www.naeir.org).

**If you are short of space, throw away material that can't be liquidated.** Even if you do not receive any payment, the free space you gain in your warehouse may make the effort worthwhile. Are you now tripping over unwanted material as you fill orders for popular products?

### 3) Organize Your Stocked Items to Minimize the Cost of Filling Orders

Most distribution warehouses utilize a "traditional" material layout. That is, an entire product line is located in one area and similar products are stocked next to one another:

Plastic Fittings	Bryer Products	Murphy Products	Cates Products
Clairmont Products	Wedge Products	Smith Products	Jones Products
Tubing and Brass Fittings	Chemicals	Shipping and Staging Area	

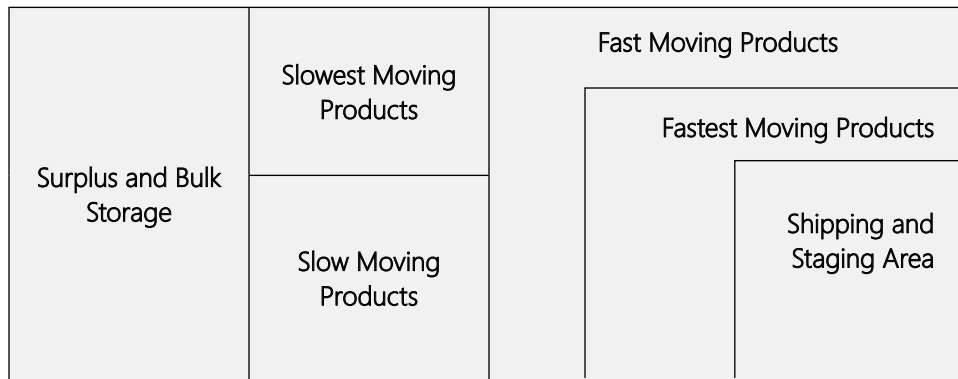
This type of material organization is appropriate when customers fill their own orders. As an example, consider your local grocery store or supermarket. You expect all of the canned vegetables to be located together and all of the cereal products to be next to one another. You must also utilize this type of warehouse organization when employees must fill orders without the benefit of picking documents or being directed by radio-frequency (RF) bar code equipment.

However, traditional warehouse organization greatly increases the cost of filling orders. After all, most product lines contain items assigned to several product ranks (based on "hits" or the frequency an item is ordered). For example, look at these five products in the Simpson line:

Product	A100	B200	C300	D400	E500
Rank (Hits)	B	A	X	D	C

Product #B200 has an "A" rank and is frequently picked. The item next to it, #C300, has not been picked at all in the past year. If a warehouse is organized with a traditional layout, the "A" ranked items that are picked most often will be stored with slow moving products in the same product line and scattered throughout the warehouse. As a result, your pickers may have to take a tour of the entire warehouse every time they fill customer orders.

You can utilize a computer software system that maintains bin locations for each item to decrease the cost of filling orders. A bin location is any designated storage area for a product. If you locate all "A" ranked products (regardless of their product line) that have the same storage requirements in the most accessible bin locations, your employees will spend more time picking orders and less time walking around your warehouse. Consider the following rank-based warehouse layout:



The fastest moving products are located closest to the shipping, staging, and receiving area in the lower-right of the diagram. As the number of hits for each product decreases (that is, the less frequently it is picked), its accessibility relative to the shipping and staging area decreases. The result: The majority of your picking activity is performed in a rather small area. How will your pickers find the material if similar products are not stored next to one another? Pick tickets and information displayed on RF bar code readers will include the bin location, and items on each order to be picked will be sorted in bin location sequence. Your employees will continually be directed to where the next product they have to pick is stored.

Note that the most accessible locations are not necessarily those that are physically closest to your shipping area. High shelves located above pickers' heads may be close to the shipping area, but they are not very accessible. You must look at every storage location and determine its accessibility. You also have to consider the fact that different products have different storage requirements. For example, you probably can't store small fittings next to large-diameter lengths of pipe. Just remember that for each type of racking or other storage method, place the primary stocking location for the products with the most hits in the most accessible locations.

#### 4) Size the Primary Storage Location for Each Product

Your warehouse is a form of real estate and the three most important things in real estate are location, location, and location. Most distributors want to get all of their fastest moving products into the most accessible locations. But a bulky fast-moving product may take up a disproportionate amount of the space in this "gold zone" of your warehouse, crowding out products with a similar number of hits. To ensure that you can store all of your high-hit items in very accessible storage locations, consider sizing the primary storage location of each product to hold supply for a specific number of days. For example:

Rank of Product	Days' Supply in Primary Bin
A	7-14 Days
B	30-60 Days
C	Entire Stock Quantity
D	Entire Stock Quantity
X	Entire Stock Quantity

One to two weeks' supply of each "A" ranked item is typically kept in the primary picking location. This can even be as little as a one-day supply for a very bulky, high-volume product. The balance of the inventory is maintained in bulk storage. Warehouse workers replenish its stock from bulk storage on a predetermined schedule, or when the primary bin is empty. It is far more efficient to go to the back of the warehouse once and bring back several days' supply of an item than to continually run back and forth filling individual orders.

While we limit the amount of stock in the primary bin of "A" and "B" ranked items, we will size the primary bin for "C," "D," and "X" items to hold the normal maximum stock quantity. After all, you should have a relatively small quantity of these slower moving products. And, they are not stored in the more accessible locations in your warehouse.

In this white paper you received the first several steps for a program to achieve effective inventory management. We discussed developing your approved stock list, liquidating unwanted inventory, and determining the primary picking location for each item in your warehouse. In the next white paper, we will finish our discussion of best practices in inventory control as we explore how to ensure that the on-hand quantity of each item in your computer system accurately reflects what is actually in your warehouse. *We look forward to helping you achieve the goal of effective inventory management.*



## About the Author

### Jon Schreibfeder

Jon Schreibfeder is president of Effective Inventory Management, Inc., a firm dedicated to helping manufacturers, distributors, and large retailers get the most out of their investment in stock inventory. For over 20 years, Jon has helped over two thousand firms improve their productivity and profitability through better inventory management. Jon has designed several inventory management computer systems and has also served as a distribution industry “troubleshooter” for two major computer companies. He is the author of numerous articles and a series of books on effective inventory management, including the recently published *Achieving Effective Inventory Management (5th edition)* and the *National Association of Wholesale Distributors' Guess Right – Best Practices in Demand Forecasting for Distributors*.

A featured speaker at seminars and conventions throughout North America, Latin America, Europe, Asia, and the Pacific Rim, Jon has been awarded the title “Subject Matter Expert” in inventory management by the American Productivity and Quality Center. He is an advisor and guest lecturer in the Industrial Distribution Program at Purdue University.

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