



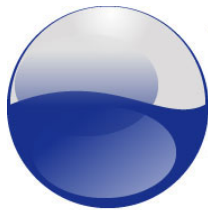
Get Control of Your Inventory

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Inventory is usually a distributor's largest asset, and the most frustrating to deal with. Common problems with inventory include:

- Stockouts of products that a customer expects to have immediately available
- Excess inventory of other items
- Product returns that must be graded and possibly repackaged
- Obsolete inventory that must be liquidated.

Unfortunately, market conditions further complicate these problems:

- Distributors in many industries face increased competition resulting in lower profit margins
- New products are continually being introduced causing the number of items a distributor must stock to continually increase

As a result distributors must make the most of every dollar invested in inventory. This industry guide is designed to help you get control of your inventory and achieve the goal of effective inventory management:

“Effective Inventory Management allows a distributor to meet or exceed customers’ expectations of product availability with the amount of each item that will maximize net profits.”

In today's marketplace, it is imperative that every dollar invested in inventory is working hard to help you achieve this goal. You must get control of what is probably your largest investment.

Develop an Approved Stock List for Each Branch or Warehouse

When you stock a product you are making a commitment. This is a commitment to have the item available in reasonable quantities and available in a reasonable timeframe for delivery to customers. But most distributors have material in their warehouse that their customers don't want or expect to be available for immediate delivery. This unwanted and unneeded inventory may be referred to as “stuff”. How does “stuff” get into your warehouse?

- Products that became obsolete over time. These are items that were once popular but customers no longer request them on a regular basis.
- Leftover quantities of non-stock, promotional, or special order items. A customer ordered a product that was not normally stocked and your vendor required that you order more than your customer was willing to buy. The remainder was literally “stuffed” somewhere in your warehouse.
- New inventory items that did not meet sales expectations. A salesperson or vendor convinces you to stock 48 pieces of a new product, but only 20 pieces of the product are actually sold. The balance remains in your warehouse gathering dust.
- Returns are accepted based on a customer service policy, but then this inventory is never resold or and is not returnable to the original vendor.

The first step in achieving effective inventory management is to separate the stock material from the “stuff” in your warehouse. Start by looking at how often each item currently in your

warehouse is requested by customers. After all, the more often an item is requested, the more reason it has to be on your approved stock list.

Sage MAS 500 ERP does an excellent job of measuring the requests or “hits” recorded for each item. Whether a customer orders one, ten, or 1,000 pieces on a single order, it is considered to be one hit. In the Sage MAS 90 ERP and Sage MAS 200 ERP solutions you can review the number of months with positive sales or usage activity within the past year to measure a product’s popularity. Ask yourself why products with usage in less than two or three months, or less than four hits in the past 12 months, remain on your approved stock list? Ask the salespeople:

- Do customers really expect this product to be available for immediate delivery? Is this a realistic expectation? Can your competitors deliver this item from their stock inventory?
- Do the profits you obtain from selling this product justify maintaining this item on our warehouse shelves for a prolonged period of time?
- Is it necessary to stock this product in order to sell other very profitable items?
- Is this a new stock item that has not had adequate time (usually six to nine months) to establish its market?

Examine each low-usage item. If you cannot answer “yes” to at least one of these questions, discontinue the item and reclassify its remaining inventory as “stuff”. Separate your “stuff” from your good stock and actively begin to liquidate your “stuff”. This will both free up room in your warehouse for the products that should be stocked and generate some cash that can be invested in other items.

***Remember that inventory is not worth what you paid for it...
It is worth what someone is willing to pay you for it!***

Understand Inventory Profitability

Most distributors use gross margin as their basic measurement of inventory profitability. Gross margin is calculated with the following equation:

$$\frac{\text{[Annual Sales \$ – Annual COGS \$]}}{\text{Annual Sales \$}} = \text{Gross Margin}$$

If you had Sales of a product of \$10,000 and Cost of Goods Sold (COGS) of \$7,500 the result would be a gross margin of 25%:

$$\frac{\$10,000 - \$7,500}{\$10,000} = 25\%$$

Many distributors have a gross margin objective and will buy inventory “at the right price” to achieve this goal. Unfortunately this may result in overstocking. Why? Because inventory value is not part of the gross margin equation. Whether you have an average inventory value of \$1,000, \$10,000, or even \$1 million dollars of this product, the result will still be a gross margin of 25%

A much better measurement of profitability is adjusted margin. Adjusted margin is calculated with this formula:

$\frac{[(\text{Sales \$} - \text{COGS \$}) - (\text{Average Inventory \$} \times \text{Annual Carrying Cost \%})]}{\text{Sales \$}} = \text{Adjusted Margin}$

This is similar to gross margin but the annual cost of carrying the average inventory of the product is subtracted from the gross margin dollars. The annual cost of carrying inventory (commonly referred to as the K Cost) includes all of the costs you incur in maintaining inventory in your warehouse. This includes:

- Moving material from the receiving dock to the proper bin location and shifting it to other warehouse locations as necessary
- Insurance and taxes on the inventory
- Rent and utilities for the portion of your warehouse used to store material
- Physical inventory and cycle counting
- Inventory shrinkage and obsolescence
- Opportunity cost of the money invested in inventory. That is, how much could you make if the money tied up in inventory was invested in a relatively safe income-producing investment. Or, if you finance your inventory purchases, the amount of interest you pay the bank.

The sum of all of these costs is divided by your average inventory investment to equal your annual cost of carrying inventory percentage. It normally ranges somewhere between 17% and 25%. This means that it costs somewhere between 17 cents and 25 cents to maintain a dollar's worth of inventory in your warehouse for an entire year. Please understand that K Cost percentages vary by industry and geographic region. It is important that you know your company's actual cost of carrying inventory and understand how it compares to the K Cost of similar firms. You can obtain additional information from your Sage Software reseller that will help you properly calculate your annual inventory carrying cost.

Using the example with sales of \$10,000 and COGS of \$7,500, notice how the adjusted margin decreases as the amount of inventory you maintain increases In the following analysis the assumption is a 20% annual K Cost:

<p>Average Inventory of \$2,000 (5 Turns* a Year):</p> $\frac{[(\$10,000 - \$7,500) - (\$2,000 \times 20\%)]}{\$10,000} = 21\%$
<p>Average Inventory of \$5,000 (2 Turns* a Year):</p> $\frac{[(\$10,000 - \$7,500) - (\$5,000 \times 20\%)]}{\$10,000} = 15\%$
<p>Average Inventory of \$10,000 (1 Turn* a Year):</p> $\frac{[(\$10,000 - \$7,500) - (\$10,000 \times 20\%)]}{\$10,000} = 5\%$

**An Inventory Turn is an opportunity you have to earn a profit from each dollar of your average inventory investment.*

Notice that the adjusted margin substantially decreases as the average amount of inventory increases, though the gross margin remains 25%. *Excessive inventory of certain products can even result in negative adjusted margins!*

It is easy to see that using adjusted margin analysis can better help you evaluate how much inventory you should maintain for a particular product. Advanced comprehensive software packages (like Sage MAS 500) include adjusted margin as one of its standard profitability measurements. It is also possible to calculate adjusted margins with the report writer available with Sage MAS 90 and Sage MAS 200.

Utilize More than One Inventory Classification

Most computer software packages will classify or rank products based solely on COGS. That is the value of inventory at average, replacement, or some other cost delivered to customers within the past 12 months. Typical "ABC" ranking classifications define "A" items as responsible for the top 80% of activity, "B" items as responsible for the next 15% of activity, and "C" items as responsible for the last 5% of activity. "X" ranked products have no activity (i.e. your "stuff"). "A" and "B" items account for 95% of activity. Most buyers and inventory planners concentrate on these "high class" items.

As explained above, classifying products based on hits or activity is the appropriate for making stocking decisions. In fact, using a COGS ranking to decide what products should be maintained in inventory can be detrimental to effective inventory management. Consider the following three items:

<i>Item</i>	<i>Annual Hits</i>	<i>Annual COGS</i>
A100	2	\$78,000
B200	6	\$12,000
C300	54	\$980

Item **A100** has a COGS value of \$78,000. This would probably be classified as an "A" item in a ranking system based on COGS. But it was only sold twice in the past year. For most of the year, this high cost item sits in the warehouse. Its inventory does not turnover and provide opportunities to earn a profit. A distributor should ask if this item can be dropped from the approved stock list and reclassified as a special order product (i.e., only purchased to meet specific customer requests). On the other hand, item **C300** only has sales of \$980 and might be a "C"-ranked product, based on COGS. But customers requested it 54 times within the past 12 months. That is more often than once a week. A buyer should put forth extra effort to ensure that this item is always available in stock.

It is not to say that ranking by COGS does not have value. In fact, ranking products by both COGS and activity can help focus a buyer on the products that need the most attention. Consider this double ranking chart:

Hits (Decreasing Order)	↓	COGS ⇒ (Decreasing Order)		
		A	B	C
A	↓	AA	AB	AC
B		BA	BB	BC
C		CA	CB	CC

AA” items (high hit and high COGS) are both expensive and requested often by customers. You want to be sure that these products are always available but not overstocked. As a result, the inventory of these products should be continually reviewed and micromanaged by buyers. On the other hand, “AC” products are low cost products that are frequently requested by customers. These products can be overstocked if necessary to ensure they are always available and still not have a significant impact on your overall profitability. The “AC” (high cost, slow moving) products are the first that should be evaluated for possible removal from your approved stock list.

Sage MAS 500 ranks products based on multiple criteria. In fact Sage MAS 500 adds a third ranking (based on profitability) to the evaluation of each item. If you are using Sage MAS 90 or Sage MAS 200, you can export this information and perform this analysis using spreadsheets.

Understand How Much Planned Excess Inventory Is Appropriate

One of a buyer’s or inventory planner’s most important responsibilities is to maintain replenishment parameters for each stocked item. Depending on your computer system, these may be minimum, maximum, order point, line point, and/or economic order quantity (EOQ). But often a vendor’s minimum purchase or package quantity exceeds what the buyer wants to purchase. The difference is referred to as “planned excess”. Why? Because it is forced on the distributor and must be considered as a normal part of your company’s total inventory investment. There is a significant difference between planned excess and other surplus stock that was the result of mistakes in buying or planning.

If your stocked products are maintained with minimum and maximum parameters, when your stock levels fall below the designated minimum amount, you want to reorder enough of the product to bring your inventory up to the maximum quantity. For example, if you have an item with a minimum of 50 and a maximum of 100 pieces, when the stock level or “replenishment position” (On Hand Quantity – Quantity Committed on Outgoing Customer Orders + Quantity on Incoming Replenishment Orders) falls below 50 pieces, you want bring in enough inventory to have 100 pieces in stock. But if the vendor’s package quantity is excessive, you are forced to overstock the product. Planned excess is calculated as follows:

$\text{Minimum Quantity} - 1 \text{ Piece} + \text{Vendor Package Quantity} - \text{Maximum} = \text{Planned Excess}$

If the vendor only requires you to buy one piece, the result of this formula is a negative number (50 -1 + 1 - 100 = -50) and there is no planned excess. As much of the item as is desired can always be purchased. But if the vendor’s package quantity is 100 pieces, you might have to buy 49 more pieces than you want (50 – 1 + 100 - 100 = 49).

Many computer systems also calculate EOQs for high volume products. This purchase quantity results in the lowest “total cost” of each piece of the product. For those items

maintained with EOQs, the planned excess quantity is the difference between the vendor package quantity and the EOQ. For example if the EOQ for a product is 75 pieces and the vendor's package contains 100 pieces, the planned excess for the item is 25 pieces.

Large vendor package quantities of expensive items can cause your overall inventory investment to skyrocket. Best practice is to produce a report of items with planned excess at least twice a year. Products on the report should be listed in descended order based on the value of planned excess:

$$\text{Planned Excess Quantity} \times \text{Replacement Cost} = \text{Planned Excess Value}$$

Work to reduce the planned excess value of products in each branch or warehouse. For example, ask if the item can be supplied with individual pieces from another branch warehouse or distribution center (rather than a full package from the vendor). Or perhaps the vendor, or an alternate source of supply, sells the product in a smaller quantity.

Summary

This industry guide has introduced some important inventory concepts:

- Separate stock material and "stuff" in your inventory system
- Understand how your inventory position impacts your adjusted margin
- Divide your inventory into "ABC" classifications and COGS to help narrow your focus
- Determine responsible planned excess quantities.

But this is just the "tip of the iceberg" of how quality software can help you gain control of your inventory. You should also work with an experienced Sage Software resource to help you maximize the productivity and profitability of your investment in stock inventory. Please visit: www.sagesoftware.com for more information on Sage Software products and services.



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