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Achieving Effective Inventory Management

A Business Solutions White Paper

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Introduction: Achieving Effective Inventory Management

In today's competitive business environment, wholesale distributors face critical factors that directly affect customer satisfaction and profit margins. These challenges include:

- Managing accurate warehouse inventory quantities
- Determining true profitability through costing methods
- Achieving optimal stock levels and return on investment
- Forecasting future demand and stock purchases
- Maintaining pricing policies that retain profitability

These challenges, combined with customer demands for product availability, can conflict with operational goals of increasing inventory turnover and minimizing costs. Powerful business automation software, such as the Inventory Management application of Sage MAS 500 ERP, delivers sophisticated distribution capabilities designed to address these important business issues. Inventory Management is a key component of Sage MAS 500, an award-winning business software suite that provides superior power, flexibility, and integration with your existing line of business applications.

This white paper examines the critical business issues listed above, and shows how the Sage MAS 500 solution can give you competitive advantages that empower your business to successfully grow and prosper in today's marketplace.

Chapter 1: Warehouse Management

Business Issue

Profitability can be threatened when physical inventory quantities do not match the on-hand quantities displayed by your computer system. The computer system must be able to display accurate quantities for each item in stock in each warehouse.

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Business Impact

Most computer systems feature inquiries that list the quantity on-hand of each stocked item in each warehouse. Frequently, however, the on-hand quantity in the computer does not agree with what is physically in the warehouse. This situation can lead to several problems:

- Salespeople promise customers material that is "on-hand" in the computer, but cannot deliver because the material is not physically in the warehouse. Customers are disappointed, and the distributor could acquire a negative reputation for being an unreliable supplier.

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Employees can better track and locate available stock in the warehouse when they know specifically how many pieces of a product are in each location.

- If the on-hand quantity in the ERP system is greater than what is actually on the shelf, the buyer may not be able to reorder the item from the replenishment source in time to avoid an out-of-stock situation.
- If the on-hand quantity in the ERP system is less than what is actually on the shelf, the buyer may replenish stock of the item when there is still plenty in the warehouse. This results in excess inventory and decreased inventory turnover.

On-hand discrepancies occur for a variety of reasons, but no distribution business can function effectively if its computer system does not reflect accurate quantities for each product in the warehouse.

The Sage MAS 500 Solution

Sage MAS 500 provides several tools designed to help maintain inventory accuracy.

Inventory Balances by Bin

Many computer systems maintain only one inventory balance for each item in each warehouse. Sage MAS 500 allows users to maintain a separate inventory balance for an item in each bin location. Rather than reporting that 140 pieces of a model #A100 widget are in a specific warehouse, the Sage MAS 500 distribution suite can maintain the following bin balances:

- 30 pieces of the item in bin #C1-210-4.
- 90 pieces in surplus location #X4-350-2
- 20 pieces in holding bin #H234 waiting for inspection

Employees can keep better track of the stock inventory and save time locating available stock in the warehouse when they know specifically how many pieces of a product are at each location.

Flexible Cycle Counting

Distribution industry analysts have shown that the process of "cycle counting" can result in a more accurate stocked inventory.

To achieve effective inventory management, it is necessary to verify that the on-hand quantities in the computer accurately represent what is on the shelf. To this end, some distributors perform a full physical inventory annually. However, performing a complete physical inventory does not ensure that counts will remain accurate over the next one to six months following the physical count. How small a percentage of stocked products will still have an accurate available quantity in the computer 11 months after the physical count?

Sage MAS 500 supports full physical inventories. Distribution industry analysts have shown that the process of "cycle counting"—counting part of the inventory every day—can result in a more accurately stocked inventory.

Cycle counting tools in Sage MAS 500 are very flexible. Users can count a certain number of bins (or only those items that meet certain precise criteria) in a specific count session. For example, it would make good sense to set up a cycle count system in which popular products are counted more often than slow moving inventory or in which items particularly susceptible to theft are counted every day. No matter which products you choose to count, the process of continually counting inventory can increase the accuracy of the information in your computer system.

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Option to Allow Negative On-Hand Balances

Theoretically, a stocked inventory item should never have a negative balance, but negative on-hand balances have their place in the real world.

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Suppose a product runs out and customers are constantly calling to see if a shipment of the item has arrived. As soon as the replenishment shipment of the product arrives on the dock, salespeople immediately start filling orders, even before the stock receipt is posted in the system. Because material is being shipped before its stock receipt is entered, there is a negative on-hand balance for the product in the computer system.

Some distributors want to allow stock items to have temporary negative on-hand balances. Other companies feel that their system should force employees to enter the stock receipt for the product before processing shipments. Sage MAS 500 allows users to choose the method that best matches their business process. A user can specify whether negative on-hand balances will or will not be allowed in their system. If the decision is to allow negative balances, the Negative On-Hand report in Sage MAS 500 allows users to research and to correct any remaining negative on-hand balances at the end of each business day.

Sage MAS 500 provides tools that can help ensure that inventory balances in the computer accurately reflect what is in the warehouse.

Summary: The Value of Sage MAS 500

Effective inventory management is impossible without accurate on-hand balances. Sage MAS 500 provides tools that can help ensure that inventory balances in the computer accurately reflect what is in the warehouse. Distributors can improve customer service, avoid out-of-stock situations, reduce excess inventory, and thus increase the profitability of their operations.

Chapter 2: Accurate Costing of Inventory

Business Issue

Distributors need accurate costing information to determine the true profitability of each item in inventory. Distributors also require highly flexible methods of costing to minimize taxes and adhere to government reporting regulations.

Business Impact

Today, distributors face continually shrinking profit margins and increased competition. Accurate information concerning costs of material for resale can result in reliable profitability reporting for each inventory item. A distributor's success or survival could depend upon making the right choices about stock inventory, based on accurate cost information.

Accurate information concerning costs of material for resale can result in reliable profitability reporting for each inventory item.

The Sage MAS 500 Solution

The Sage MAS 500 distribution suite provides distributors with four costing methods:

- First-in first-out (FIFO)
- Last-in first-out (LIFO)
- Weighted average cost
- A user-defined standard cost

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For added flexibility, Sage MAS 500 allows users to apply different costing methods for different purposes.

In addition, distributors may assign a specific item cost to products controlled with serial or lot numbers and can define different costs at each warehouse location. For added flexibility, Sage MAS 500 allows users to apply different costing methods for different purposes such as financial reporting, commissions, and replenishment calculations.

Sage MAS 500 maintains the accuracy of FIFO, LIFO, Weighted Average and specific item costing methods by creating and maintaining cost tiers at each stock receipt. If a distributor needs landed cost capabilities, Sage MAS 500 enables users to include estimated non-product costs (freight, customs duties, and more) when the material is received from a vendor.

For taxation and government compliance purposes, distributors require flexibility in reporting the value of stocked inventory. The Sage MAS 500 Inventory Valuation report lists the value of inventory for any specific date in the current period, or any period-ending balance maintained in history.

Summary: The Value of Sage MAS 500

Sage MAS 500 cost capabilities maximize accuracy and flexibility, and its reporting tools provide the meaningful analysis distributors need.

Measurements of distribution business performance, such as profitability, are only as accurate as the costs of inventory reported by the computer system. Sage MAS 500 cost capabilities maximize accuracy and flexibility, and its reporting tools provide the meaningful analysis distributors need. The result is better control and improved inventory management.

Chapter 3: Inventory Performance Analysis

Business Issue

For every inventory item, an optimal stock level can balance customer availability needs with maximized net profit. Distributors need to achieve optimal stock levels and track the performance of their investment in stock inventory.

Business Impact

Achieving an optimal stock level requires distributors to maintain both a sufficient level of inventory in their warehouses and the imperative ability to satisfy customer expectations of product availability.

Achieving an optimal stock level requires distributors to maintain both sufficient levels of inventory in their warehouses and the imperative ability to satisfy customer expectations of product availability. At the same time, distributors seek to stock precise amounts of each item that can maximize net profits. Powerful and flexible reporting tools are needed to measure progress in achieving these goals, but most distributors can only generate lengthy, overwhelming reports that may provide little or no meaningful information. Without the right information, the distributor is at risk of either failing to satisfy the needs of the customer or stocking excess inventory at the expense of reduced net profitability.

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The Sage MAS 500 Solution

Sage MAS 500 inventory modules provide distributors with four tools for meaningful analysis. These tools can pinpoint successes, as well as opportunities for improvement, in the following key areas:

- Customer service level
- Inventory turnover
- Return on investment
- Adjusted gross margin

Customer Service Level

The customer service level measures how often items must be in stock when customers require them.

The customer service level measures how often items must be in stock when customers require them. Keep in mind that customers will look elsewhere, especially the competition, to supply their needs. The customer service level is calculated using the following formula:

$$\frac{\text{Number of line items for stocked products shipped complete by the promise date}}{\text{Total number of line items for stocked products ordered}}$$

This formula takes into account only line items shipped complete when the entire quantity ordered is delivered on or before the promise date listed in the sales order header. If the customer orders 10, and the distributor ships 10, they receive credit toward achieving the customer service level. If the customer orders 25, however, and only 24 units ship before the promise date, there is no credit. There is no partial credit for shipping 24 out of 25 because the customer will have to find that last unit somewhere else—probably at the competition's warehouse down the street.

The customer service level takes into account only sales of stocked items that are filled using warehouse inventory. The following types of products do not affect customer service levels:

Non-stock products – Items not kept on hand, but are specially ordered to fill a specific customer order.

Direct or *drop* shipments – Material sent from a vendor directly to the customer.

By definition, these types of shipments do not reflect how well material in stock meets immediate customer needs. Companies that include non-stocks and direct shipments when calculating customer service levels are overstating how well they are serving customers from warehouse inventory.

Inventory Turnover

If a distributor annually sells $10,000 worth of a product line, is it wise to purchase the entire $10,000 worth of inventory at one time? On the other hand, could a company buy some, sell it, and then buy some more with the money made selling the initial quantity?

In the first case, a substantial sum becomes tied up for a year. The product will be sold one time and earn a profit one time. In the second case, the initial investment in

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inventory for the product line is less. The distributor is then selling this smaller amount several times to earn the same gross profit as if the entire $10,000 was invested up front. The balance of the $10,000 not invested in stock for this product line can be used for other purposes, such as adding new product lines to inventory or increasing head-count.

Inventory turnover measures the number of times the distributor sold or *turned* stock, or investment in inventory, during the past 12 months. Inventory turnover is calculated with the following formula:

$$\frac{\text{Cost of goods from stock sales and transfers during the past 12 months}}{\text{Average inventory value}}$$

If the total cost of goods sold over the past 12 months is $6 million and the average full inventory cost is $1 million, the distributor has achieved six inventory turnovers.

Again, only consider stock items in the calculation, so that measurements reflect only those sales that are filled with warehouse inventory. If non-stock or drop-ship sales are included in the numerator of the equation, the inventory turns would be falsely overstated.

Higher margins can make a distributor successful with lower inventory turns.

Also, consider only the components of kits and assemblies sold or transferred, not the kits and assemblies themselves. If finished kits and assemblies are included in the numerator of the inventory turnover equation, these products would be "double counted" (once as components and again as finished products). Again, the distributor would be exaggerating the inventory turnover rate.

Return on Investment

Many companies are fixated on the goal of maximizing inventory turnover. However, higher margins can make a distributor successful with fewer inventory turns. Take the example of distributors that specialize in stocking hard-to-find, slow-moving products. These distributors are successful because every time they sell a product, they command a premium price.

Sage MAS 500 return on investment (ROI) reporting can help users analyze the balance turnover and profits.

Sage MAS 500 return on investment (ROI) reporting can help users analyze the balance turnover and profits. Sage MAS 500 provides Business Insights Analyzer for efficient analysis of complex information essential to reporting. ROI, calculated by multiplying inventory turns by the gross margin percentage, highlights situations where high margins can compensate for low inventory turns.

If an inventory item turns over four times a year and earns an average 30% gross margin on each sale of the product, a return on investment of 120% is achieved. However, the same return on investment value can be achieved if the inventory item turns only twice, but makes an average margin of 60% on every sale:

2 turns x 60% average margin = 120% ROI

On the other hand, lower margins reduce ROI if a higher number of turns do not make up the difference. The stock of a product with an average margin of 20% would have to turn over six times to achieve the same 120% return on investment.

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The above may imply that all items with the same return on investment are equally desirable, but this is not the case. All other things being equal, the item that achieves the target return on investment with the fewest inventory turns is the more profitable item. Fewer turns generate lower distributor costs, because purchasing, receiving, and other material handling activities are reduced. Carefully examining return on investment, however, allows quick and easy comparisons of the overall performance of several branches or product lines.

Adjusted Gross Margin

Gross margin is the most common measurement of profitability distributors use. Gross margin is calculated using this formula:

$$\frac{\text{Annual Sales Dollars} - \text{Annual Cost of Goods Sold}}{\text{Annual Sales Dollars}}$$

It is a commonly held belief that a higher gross margin is better. Under most circumstances, salespeople would rather sell a product with a 24% margin than an item with a 20% margin. That is because most salespeople are paid based on gross margin. However, the company does not necessarily receive a better return on investment on the product with a 24% margin. The ROI depends on the average value of inventory the company must maintain to generate sales of the item.

The average inventory investment depends on such factors as:

- Cost of the item.
- Variations in customer demand.
- Reliability of the vendor and method of transport.
- Quantities that must be purchased in order to sell the item at a competitive price.

The higher the average inventory cost, the more it costs to maintain or *carry* the inventory in the warehouse. The following expenses are incurred in carrying inventory:

- **Approximately 40% of the material handling expenses.** Sixty percent of material handling expense is typically associated with filling customer orders.
- **Approximately 40% of rent and utilities.** Again, the remaining 60% of warehouse activity is normally associated with filling customer orders.
- **Insurance and taxes on inventory.** If it is in the warehouse, it should be insured and may be subject to tax.
- **Physical inventory and cycle counting.** The more material in the warehouse, the longer it takes to count.
- **Inventory shrinkage and obsolescence.** The more material in the warehouse, the higher the possibility of shrinkage and obsolescence. If the material is not there, it is harder to steal!
- **Opportunity cost of the money invested in inventory.** How much could the company make if the money being invested in inventory were placed in a more traditional investment (such as treasury bills)?

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Typically, the carrying cost of finished goods inventory is 25% to 35% per year of the average inventory value. An example can show whether a product with a gross margin of 24% always contributes more to a company's bottom line than another product with a gross margin of only 20%.

Product A:	Annual Sales	= $12,500
	Cost of Goods Sold	= $ 9,500
	Gross Margin	= $\frac{\$12,500 - \$9,500}{\$12,500}$ = 24%
Product B:	Annual Sales	= $12,500
	Cost of Goods Sold	= $10,000
	Gross Margin	= $\frac{\$12,500 - \$10,000}{\$12,500}$ = 20%

At first look, Product A appears to contribute more to the company's profitability. However, the gross margin does not reflect that we have to maintain an average inventory of $5,000 of Product A and $2,500 of Product B. Subtracting the yearly cost of maintaining this average inventory investment from the annual profit dollars (for example, sales – cost) yields the adjusted margin—a better measure of profitability:

Annual Sales Dollars – Annual Cost of Goods Sold – (Average Inventory Value X Carrying Cost %)

Annual Sales Dollars

Let's look at the adjusted margin of our two products:

Product A:	Annual Sales	= $12,500
	Cost of Goods Sold	= $ 9,500
	Average Inventory Value	= $ 5,000
	Carrying Cost %	= 25%

Adjusted Margin = $\frac{\$12,500 - \$9,500 – (\$5,000 \text{ X } .25)}{\$12,500}$ = 14%

Product B:	Annual Sales	= $12,500
	Cost of Goods Sold	= $10,000
	Average Inventory Value	= $ 2,500
	Carrying Cost %	= 25%

Adjusted Margin = $\frac{\$12,500 - \$10,000 – (\$2,500 \text{ X } .25)}{\$12,500}$ = 15%

It is no surprise that more and more distributors are using adjusted gross margin, rather than gross margin, in assessing their profitability.

Although Product B has a lower gross margin, its adjusted margin reveals that Product B contributes more to the company's profitability. It is no surprise that more and more distributors are using adjusted gross margin, rather than gross margin, when assessing their profitability.

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To facilitate management review, Sage MAS 500 lists all four evaluations on a single report. This report can be printed for the products:

- Stocked in one or all warehouses
- Assigned to one or all buyers
- Included in one or all purchase product groups (for example, the items that would be replenished on the same vendor purchase order).
- Included in one or all sales product groups
- Assigned to a specific product rank or all product ranks

The report is available in detail or summary format. The detail version lists analysis information for each of the selected items. The summary version lists a one-line summary for each warehouse, buyer, purchase product group, sales product group, and rank selected. This single report can help users take control of what is probably their largest investment.

Summary: The Value of Sage MAS 500

Sage MAS 500 sales analysis tools—including customer service level, inventory turnover, return on investment and adjusted gross margin—enable distributors to measure the performance of their purchase of inventory quickly and easily.

Comprehensive analysis reports, together with drill-down and drill-around functionality in Sage MAS 500, can help a distributor make better inventory management decisions. With Sage MAS 500, distributors can maximize their investments in inventory and the employees who manage the inventory.

With Sage MAS 500, distributors can maximize their investments in inventory and the employees who manage the inventory.

Chapter 4: Comprehensive Demand Forecasting of Inventory

Business Issue

Future customer demand is an unknown quantity that every distributor must attempt to predict. In the absence of the right kind of information, a distributor could stock quantities of an inventory item that are not aligned with customer demand. Whether a distributor is carrying too much or too little stock, either condition can have a negative effect on the distributor's bottom line. One of the greatest challenges faced by distributors is predicting accurately what quantities of which products their customers will require.

Whether a distributor is carrying too much or too little stock, either condition can have a negative effect on the distributor's bottom line.

Business Impact

If a distributor underestimates future customer demand, ample inventory will not be on-hand. The distributor may then disappoint its customers and lose sales. If a distributor overestimates what customers will buy, the resulting overstock will decrease inventory turnover, threatening the distributor's profitability and return on investment objectives. Accurate customer demand forecasting is therefore vital to a distributor's success.

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The Sage MAS 500 Solution

Accurate customer forecasting is vital to a distributor's success.

Sage MAS 500 provides the distributor with a superior set of demand forecasting tools. These tools include:

Unusual Usage Identification

At the end of each inventory period, Sage MAS 500 can present the buyer with a list of products whose usage in the previous business period was abnormally large or small. The buyer can then enter adjustments so future forecasts will not reflect the unusual usage. Because unusual sales trends may not be immediately apparent, Sage MAS 500 allows the buyer to adjust the usage in any previous business period. The system maintains adjustments separately from actual usage quantities, so no history is lost or overwritten.

Basing of Future Demand Calculations on Past Usage per Business Day

One important component of future demand forecasts is the usage recorded in previous months. For example, forecasted demand for January might be based on the average quantity sold in the previous six months. Most systems, however, ignore the fact that individual months might have a different number of business days.

Sage MAS 500 allows distributors to define inventory forecasting periods.

Take as an example the month of December, when many distributors are closed for four to five days during the holidays. As a result, December usage is often lower than the amount recorded in other months. When forecasting, if you consider usage in December equally with the usage recorded in any other month, your predictions of future usage will probably be too low. Conversely, utilizing usage from other months to forecast expected demand in December may result in excess inventory during that month.

Sage MAS 500 allows distributors to define inventory forecasting periods. These periods are independent of accounting periods and calendar months. For example, you may decide to forecast demand based on the usage recorded in 13 four-week periods. Individual inventory periods can be of differing lengths, and you can specify the number of working days in each period. You can base forecasts on the usage recorded per business day, rather than the usage recorded each month. This can result in forecasts that are more accurate and could in turn lead to higher levels of customer service and greater returns on your inventory investment.

The typical forecasting methods used in other distribution suites, including rolling averages and exponential smoothing, lack flexibility and may not forecast demand with the accuracy that today's distributors require.

Two Other Elements of Forecasting

Most systems base forecasts of future product demand on past usage history. The typical forecasting methods used in other distribution suites, including rolling averages and exponential smoothing, lack flexibility and may not forecast demand with the accuracy today's distributors require. Sage MAS 500, however, ensures that usage is properly considered in forecasting calculations. Sage MAS 500 also considers two other elements necessary for accurate inventory forecasting:

> **Trends:** The popularity of products changes over time. Sage MAS 500 allows users to specify that usage in a particular product line and/or warehouse is increasing or decreasing over time.

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Known Future Changes in Usage: Distributors may continually gain and lose customers, and these changes can have dramatic effects on forecasted demand. Gaining a new large customer, for example, can influence your forecast significantly because past usage history does not reflect their requirements for particular products. Sage MAS 500 provides a mechanism for considering known future changes in usage in the calculation of demand forecasts.

Sage MAS 500 also can consider both "trends" and "known future changes in usage" as elements for accurate inventory forecasting.

Weighted Average Forecasting

Most distribution software packages calculate forecasted demand for products using techniques such as the rolling average method or exponential smoothing. The rolling average method averages the usage recorded in the past several (typically six) months. Starting with a usage history as shown below, calculate a forecasted demand for July by averaging the usage recorded for this product over the preceding six months:

	July	June	May	April	March	February	January
Total Demand	**?**	**154**	**188**	**152**	**116**	**111**	**101**

$$\frac{154 + 188 + 152 + 116 + 111 + 101}{6} = 137$$

The forecasted demand using the rolling average method is 137 pieces. Notice that this is significantly below the quantities sold in the previous three months.

This example illustrates a problem with rolling average forecasting. This method places the same weight on the usage recorded in each month. In most cases, however, last month's numbers will better predict what will happen this month than the quantities sold six months ago.

More than 25 years ago, forecasters recognized the need to increase the emphasis on more recent history. The limited computer power available at the time, however, restricted how the usage could be weighted. Of these early weighting techniques, exponential smoothing proved the most accurate. Exponential smoothing places a certain *weight* on the usage recorded in the previous month. It also places another *weight* on the forecasted demand for that month. The result is that the effect on forecasted demand of each month's usage history decreases over time. For this reason, exponential smoothing often calculates a more accurate forecast than the rolling average method.

The weighted average method in Sage MAS 500 allows a buyer not only to place a weight on the previous month's usage, but also to include and weigh the usage recorded in any or all inventory periods during the past 12 months.

One flaw of the exponential smoothing method is that it does not consider adjustments made to usage history in previous months. If a buyer discovers in June that an adjustment must be made to April's usage history, exponential smoothing will not consider the adjustment in calculating the June forecast. The method only takes into account the usage recorded in May, and the demand forecast calculated in the beginning of May.

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When exponential smoothing was first developed, available computer power limited the number of calculations that could be performed to forecast demand. This is no longer a problem with Sage MAS 500, because its weighted average method allows a buyer not only to place a weight on the previous month's usage, but also to include and weigh the usage recorded in any or all inventory periods during the past 12 months. Forecast the demand for July using a typical set of weights and the usage history from the previous six inventory periods:

Most recent period weight	3.0
Previous period weight	2.5
Next previous period weight	2.0
Next previous period weight	1.5
Next previous period weight	1.0
Total weight	10.0

	July	June	May	April	March	February	January
Total Demand	**?**	**154**	**188**	**152**	**116**	**111**	**101**

June usage of 154 times weight of 3.0 = 462
May usage of 188 times weight of 2.5 = 470
April usage of 152 times weight of 2.0 = 304
March usage of 116 times weight of 1.5 = 174
February usage of 110 times weight of 1.0 = 110
Forecast Demand for July = 1,520 ÷ 10 = 152 pieces

The weighted average method better reflects the change in usage over time. Still, one set of demand weights will not produce an equally accurate demand forecast across the entire spectrum of inventory items. Users must have the ability to apply weighting to individual items or to groups of items. For example, a user can best predict demand this year for a highly seasonal item by looking at the usage recorded during last year's season. Sage MAS 500 allows users to develop and maintain an unlimited number of sets of demand formula weights, and each set can be tailored to the seasonal usage of a given product or group of products. Included in the software are several *default* weight sets. These *default* sets can provide accurate forecasts for most stocked inventory items.

Summary: The Value of Sage MAS 500

In a competitive environment, accurate demand forecasts can be a matter of survival.

Distributors face uncertainty every day. Distributors do not know exactly what quantities of which products their customers will require. In a competitive environment, accurate demand forecasts can be a matter of survival.

Sage MAS 500 provides the most comprehensive set of inventory forecasting tools available today. By helping ensure that the distributor has the optimal product quantities on hand to satisfy customer demand, the forecasting tools of the Sage MAS 500 distribution suite can assist the distributor in achieving higher levels of customer service and greater profit margins.

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Chapter 5:
Pricing Overview

Business Issue

Distributors today are faced with lower margins and increased competition. To remain profitable, these companies need to customize pricing policies for each customer, maximizing the profit on each individual sale. In addition to having flexible pricing policies and systems in place, the distributor must be able to:

- Maintain and modify pricing policies with minimum effort
- Offer and maintain prices in several currencies
- Maintain future prices and pricing policies, where they become effective automatically on the specified date
- Maintain past prices and pricing policies for reference purposes

To remain profitable, distributors need to customize pricing policies for each customer.

Most distribution software solutions are unable to address these requirements effectively, because these systems were created before the availability of faster PCs with inexpensive mass storage.

Business Impact

Lower margins, resulting from increased competition, necessitate lean, highly efficient business operations. The inability to meet this challenge puts a distributor at risk of losing price-sensitive customers.

Lower margins, resulting from increased competition, necessitate lean, highly efficient business operations.

The Sage MAS 500 Solution

Sage MAS 500 contains a comprehensive set of pricing tools. Using these tools, a distributor can develop and maintain a customized pricing strategy that allows profit maximization on every sale.

The Price Sheet

Every product in each warehouse may have a list price and four user-defined *column* prices. The distributor can maintain these price sheets in one or several currencies. In addition to the prices in the price sheet, each item has an average cost, a standard cost, and a replacement cost. A customer's price for a product can be based on any of these prices or costs. Price sheets are date sensitive. This means that users may maintain an unlimited number of sets of list and column prices for an item, each set effective for a specific period of time. While pricing may be warehouse-specific, it is not necessary to maintain price sheets for each item in each warehouse. Sage MAS 500 allows users to specify that one warehouse will utilize the pricing tools established for another warehouse within your company.

Customer Price Groups

A distributor may not want to sell an item to all customers at the same price. For example, large contractors may get one price, small contractors another price, and competitors yet a third price. Maintaining different detailed pricing policies for each customer is normally a tedious, time-consuming task, but the pricing capabilities in Sage MAS 500 allow users to classify customers into groups for pricing purposes.

Maintaining different detailed pricing policies for each customer is normally a tedious, time-consuming task. The pricing capabilities in Sage MAS 500 allow users to classify customers into groups for pricing purposes.

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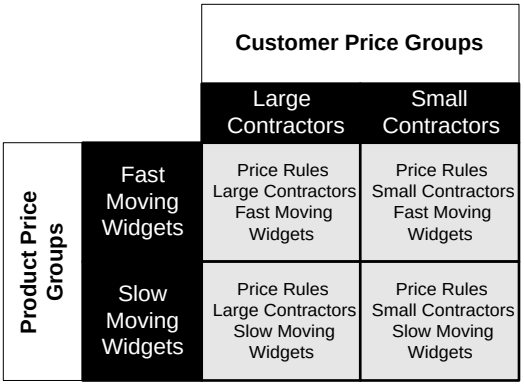
These pricing groups are separate from other customer classifications. For example, there could be one customer price group for large contractors with purchases of more than $10,000 per year, and another customer price group for large contractors with purchases less than $10,000 per year, while maintaining a single sales analysis category for large contractors. Customer price groups can even vary by ship-to or job, enabling a customer to get special pricing for a specific job while other projects receive the customer's normal pricing.

Product Price Groups

As distributors usually do not price all customers according to the same rules, they probably also employ several pricing strategies for different types of products. Product price groups in Sage MAS 500 can classify products for pricing purposes. Like customer price groups, product price groups are independent of any other classifications. This allows a distributor to obtain higher margins for certain items within a product line. The distributor can maximize profits by setting up pricing to reap higher margins (for example, more profit dollars) on slower moving, less competitive items within a line and lower margins on fast-moving, more competitive items.

The Pricing Matrix

Customer price groups and product price groups are used to create the Sage MAS 500 pricing matrix:



Placing customers in customer price groups alleviates the tedious task of setting up and maintaining pricing policies for each individual customer.

Pricing rules at each matrix intersection can include:

- Effective and expiration dates for this specific set of pricing rules
- The base price (list price, columns one through four, average cost, standard cost or replacement cost) used to calculate the price
- A percentage or monetary discount (or markup) from the base price
- Price breaks based on the quantity, monetary amount, weight, or volume of this product purchased, or all products assigned to the product price group

Contract Pricing

The pricing matrix provides a distributor with extensive flexibility for establishing and maintaining effective pricing policies. Placing customers in customer price groups alleviates the tedious task of setting up and maintaining pricing policies for each individual customer. However, to make an exception to matrix rules when a certain customer buys a certain product, a new customer price group for that customer does

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not have to be created and maintained. Contract pricing in Sage MAS 500 allows a distributor to maintain exceptions to matrix pricing. Users can create exceptions for a customer (or specific customer ship-to/job) when that customer buys either a specific product, or one of the products in a product price group. Options for contract pricing are the same as those for matrix pricing:

- Effective and expiration dates for this specific set of pricing rules
- The base price (list price, columns one through four, average cost, standard cost or replacement cost) used to calculate the price
- A percentage or monetary discount (or mark-up) from the base price
- Price breaks based on the quantity, monetary amount, weight, or volume of this product purchased, or all products assigned to the product price group

Promotional Pricing

Sage MAS 500 supports promotional pricing, allowing users to configure a date-specific promotion by item, warehouse, sales product line, purchase product line, product price group, primary vendor and product category. Fixed and percentage based discounts can be based on price or quantity ordered.

Summary: The Value of Sage MAS 500

The Sage MAS 500 pricing system provides powerful tools a distributor can use to offer competitive pricing for each item to each customer. Furthermore, the distributor can create and maintain this pricing strategy with minimal clerical effort.

By enabling flexible pricing strategies that maximize the profit on each individual sale, the pricing system of the Sage MAS 500 distribution suite enables the distributor to maintain client loyalty while guarding against erosion of profit margins.

Chapter 6: Business Intelligence Overview

Business Issue

Distributors need accurate, up-to-date reporting and business intelligence to help them make critical business decisions. Most business systems provide built-in reporting and data alert utilities designed to meet the needs of the general market. However, distribution is a highly specialized industry. As such, business intelligence needs vary widely depending on the size of the company, the distribution channel, and the types of products being sold. It is therefore critical that the underlying business intelligence system can be quickly customized without source code changes or development of customized reports.

Business Impact

It is increasingly important for distributors to attract and retain customers. Stock-outs due to vendor issues are therefore unacceptable as short shipments, damaged goods due to improper packaging, or shipments containing the wrong product will inevitably cost you money whether through increased administration costs or worse, lost customers and business opportunities.

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What currently happens when you receive an unexpected, abnormally large order for a popular item? Chances are that you scramble to order more product to avoid future stock-outs. Often, your primary vendor will charge a rush fee for faster turn-around or you may have to find an alternative, higher-priced source to meet your short-term needs.

Inventory analysis requirements will also vary widely among distributors. One of the most highly customized areas of any business system is in sales reporting. Often, custom sales analysis reports do not leverage real-time information and do not provide flexibility such as the ability to sort and filter data (for example, reporting on top ten items by sales rep by month). Almost all distributors are used to incurring high costs to develop and maintain these critical customized reports.

The Sage MAS 500 Solution

Sage MAS 500 includes several built-in business intelligence tools designed to provide distributors with flexible, up-to-date reporting and data analysis. Three of the more popular business intelligence tools are the Vendor Performance Report, data alerts, and extensive reporting capabilities.

Vendor Performance Report

During receipt of goods, your staff can identify when goods are received with improper labeling or packaging, if the vendor sent an unauthorized substitute item, or if the goods were damaged in shipping. The Sage MAS 500 Vendor Performance Report combines system-calculated metrics such as on-time delivery, accurate order fulfillment quantities, and cost variances with the additional vendor metrics captured during receipt of goods to provide a virtual *report card* of each vendor's performance. This report is a valuable tool for distributors to accurately assess vendors that perform well and those that do not. Insights gained from the report can help distributors negotiate new vendor contracts.

Data Alerts

Sage MAS 500 provides proactive business management tools to help distributors effectively manage inventory. However, exceptions such as unexpected orders or late shipments from vendors happen occasionally—disrupting your inventory plan. Sage MAS 500 provides built-in data alerts technology to assist purchasing and inventory management when exceptions occur within the database. For example, a data alert can be set up to send an e-mail alert to management when inventory levels for a particular item fall below the designated safety stock at a particular warehouse location. Management can then proactively address the issue by transferring stock from another warehouse or finding an alternative supplier. Some of the most frequently used inventory alerts in Sage MAS 500 include:

- Item is out of stock at a warehouse
- Item is below its safety and/or minimum stock level at a warehouse
- Item is late shipping from a warehouse by a user-defined number of days
- An item on a purchase order is late by a specified number of days
- Backordered inventory is received into a particular warehouse

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Reporting & Analysis

Sage MAS 500 provides a powerful report definition front-end for all business reports. Users can build and save countless report settings to define which data to include in reports and how that data should be sorted in the report. For example, the Inventory Stock Status Report can be sorted by warehouse, item, purchasing unit of measure, and purchase product line with optional subtotals and page breaks by section. Further, filters can be established based on warehouse, item, item type, item status, hazardous material indicator, cost of goods sold rank, or gross margin rank using multiple filter definitions including: Is equal to, Is not equal to, Is between, Is not between, Is greater than, Is less than, Begins with, Does not begin with, Ends with, Does not end with, Contains, and Does not contain. For example, the report front-end could be used to create custom report settings such as:

- Warehouse Is Equal to “Tampa” or “Rialto”
- Item Contains “Modem”

The corresponding report would include only items containing the word “modem” from the Tampa or Rialto warehouses.

Further, most reports provide additional options. For example, the Stock Status report allows you to define whether to include the stock status or the stock status with replenishment information; whether or not to include zero and negative inventory values in the report; whether to include in-transit warehouses; and which costing method to use for the valuation (average, landed, standard, replacement, or last cost).

The Business Insights Analyzer is shipped free with Sage MAS 500 and provides tools for multi-dimensional analysis. The sales history and purchase history data views can be used to quickly group, sort, and filter data or to analyze data in a pivot table. This is invaluable as distributors now have built-in tools to look at data in virtually any format that they need. A report wizard is available to generate on-the-fly custom reports from the Business Insights Analyzer view. These new reports can be linked to the
Sage MAS 500 menu and reused as they are linked to the Sage MAS 500 database and will refresh with updated information each time the report is run.

To find out more about what Sage MAS 500 can do for your business, please contact us at 800-854-3415.

Summary: The Value of Sage MAS 500

Sage MAS 500 provides accurate, timely business intelligence information in an easy-to-use format for busy executives and management. The business intelligence tools can save weeks for businesses by eliminating the need to write complex custom reports. With Sage MAS 500, distributors are armed with the insights they need to improve customer service, streamline their supply chain, and identify potential cost savings and revenue opportunities.

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