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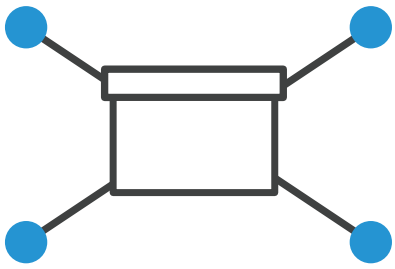
Four Strategies for Smarter Inventory Control



Section 01

Synopsis

This paper is provided for retailers that carry inventory and want to better manage their inventory availability while reducing ordering and carrying costs. This paper will present four seemingly simple – but proven – strategies for smarter inventory control.

Section 02

The importance of inventory control and reduction

Introduction

Every retailer has inventory, often making up a significant investment and considered a key factor in operating strategy. Because of its value and visibility, inventory is often the focus of costcutting efforts and a key measure of the health of a retail business.

Does inventory deserve this prominence? Yes, of course it does. Inventory truly represents a large investment and therefore should be closely managed. More importantly, inventory serves a critical operational function, and that is its role as a substitute for time in being able to satisfy customer demand.

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It is important to manage such a critical resource to make the most of your investment in your business and to assure that the inventory you need is available when you need it. There are only two basic parts of inventory management: knowing what you have, and managing acquisition (replenishment).

Keeping track

Inventory tracking can and should be very simple—it's just a matter of keeping a running count of what comes in and what goes out (and therefore what's left).

Retail chains call for the use of inventory management software that does exactly the same thing—keeps a running count of additions (receipts) and subtractions (issues) and the resulting balance. But management software can do much more, including accurate tracking of multiple quantities of a specific item in multiple locations, tracking lots and serial numbers, recording and enforcing expiration dates and FIFO/LIFO (first-in-first-out, last -in-firstout) picking, inventory valuation, automated data collection, usage analysis and replenishment management, and much more.

Replenishment

The amount of inventory on-hand is the result of receipts (inventory coming in) and issues (inventory going out). Inventory goes out in response to demand—purchases, customer orders, inter-warehouse orders, etc. The inventory manager controls replenishment (receipts).

In simpler situations, replenishment can be managed through some form of "order point" management, either formal or informal. Order point can be as simple and informal as walking through the warehouse or stockroom from time to time and looking for empty spaces or bins with smaller than usual quantities. Another approach is called "two-bin order point" Where the items are stored in two containers: one is used as the main supply and the other is in reserve. When the main

supply is exhausted, the reserve supply is moved up to the main supply position and the empty container serves as the re-order signal. As long as the replenishment is completed before the reserve (now main supply) is used up, you won't run out. Two-bin order point is actually a primitive form of kanban (a common inventory control technique that uses physical tags or containers to trigger replenishment).

Order point can also be computerized and is embedded in many inventory management software products. Computerized order point uses product sales statistics and replenishment lead times to calculate the best order point and replenishment recommendations for each item, or it can work with manually entered reorder points and safety stock requirements to recommend replenishment orders.

Inventory management benefits

Knowing how much inventory you have and managing replenishment are fundamental requirements for having the inventory you need to satisfy customers and avoid disruption caused by shortages. Without good information and controls, you will likely have more inventory than you really need and still suffer from unnecessary shortages. Good inventory management pays off in higher customer service and satisfaction, lower overall inventory investment, fewer backorders and lost business.

Section 03

Maintain accurate inventory records

Strategy #1

It is difficult, if not impossible, to effectively manage inventory without an accurate record of what you have. You make promises to your customers that they will find what they need in your store based on what you know is in stock. If the reality is different from the records, you may not be able to keep those promises, resulting in disappointed customers and lost business.

The accuracy of any inventory tracking system, whether manual, spreadsheet or software depends on timely and accurate transaction reporting. Any inventory movement must be reported to the tracking system promptly and accurately.

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While this is a simple requirement, it is not necessarily easy. Any human based procedure is subject to error, delays, lost transactions, bad math, and misidentification. Timely and accurate transactions only occur when the people reporting the transactions understand the importance and are properly motivated to do a good job. There's no magic here, it all depends on motivation and management.

Some data collection can be automated, most often through bar-code scans. Most inventory software will produce bar-coded lists and labels, interface with scanners, and manage the data collection effort. Not only is automated data collection more timely (data goes right into the inventory records, doesn't have to be keyed in), but it also eliminates a lot of the sources of error that are part of manual data collection.

Whether automated, manual or a combination of both, inventory records are error-prone. You might complete an annual physical count and learn that your records are only a few percent off, but that is a false measurement. It is likely that as many as half of your inventory balances are inaccurate but the physical count only looks at total value and the plusses and minuses balance each other out to give you a misleading total difference.

A much more telling measure of accuracy is to count 100 items and see how many are correct and how many are not. Most retailers are shocked to learn that, by this measure, accuracy is less than 50%. The solution is to implement the cycle counting process to improve accuracy by eliminating the cause of errors, which are part of the transaction reporting process.

Cycle counting involves a process of counting a certain number of items every day or week such that groups of items 'cycle' through the counting scheme so that they are all counted according to their importance--more important items are counted more frequently.

Section 04

Proactive planning

Strategy #2

Replenishment describes the process where new inventory is new to replace inventory which is used or sold. The most efficient replenishment will plan for the new supply to arrive just before it is needed, in other words, just before the supply runs out (just in time). Order point (mentioned above) does that based on average or assumed sales and typical lead time, but there are other approaches.

Regardless of the approach that you choose to take, the point is that while inventory is costly, shortages can be devastating to the retailer. Simple management approaches like order point may not deliver the combination of low inventory and high availability that you need. Inventory management, planning, and optimization systems offer a wide array of tools that allow you to be proactive in managing inventory.

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No replenishment planning approach is perfect—because we cannot know the future (demand) exactly, and because demand will vary from day-to-day and week-to-week. In order to protect the availability from these variations, retailers carry a little extra inventory, called safety stock. More safety stock will reduce the risk of a "stock-out", of course, but more safety stock also adds to your inventory investment. The same holds true for other safety measures like shrinkage factor, yield allowance, padded lead times (telling the supplier to deliver before you expect to need the items just in case they deliver late)—they all add inventory.

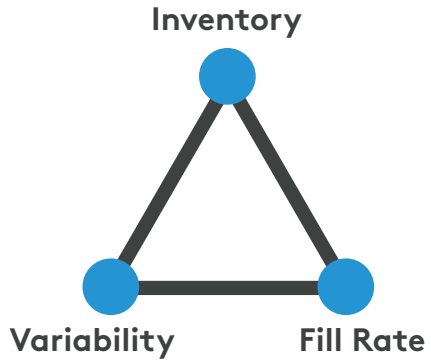
Section 05

Focus on improvement

Strategy #3

With any inventory planning and control strategy, the objective is to avoid shortages while minimizing the amount of inventory. The easy way to reduce or avoid shortages is to have more inventory. Reducing inventory is likely to increase the risk of shortages. There is a way to change this relationship because there is a third factor involved—and that is variability. As mentioned at the end of the previous section, safety stock is the customary way to compensate for variation including swings in demand (otherwise known as forecast error) and other unexpected changes in demand or supply (including inventory accuracy errors).

Since the future is unknown, it is impossible to cover all possible variation.



If you can reduce variability, however, you can increase fill rate without increasing inventory. Alternatively, reducing variability would allow you to reduce inventory (safety stock) without reducing fill rate. Simply put, to reduce inventory while maintaining or improving fill rate, reduce variation.

How can you reduce variation? The most obvious ways are:

- Improve inventory accuracy (use cycle counting)
- Improve forecast accuracy (collaborate with customers, distributors)
- Reduce lead time (improves forecast accuracy, see below)
- Consider implementing integrated systems like ERP, warehouse management systems, automated data collection and other technologies that will improve accuracy

Section 06

Reduce lead times and lot sizes

Strategy #4

If lead time was zero, you wouldn't need inventory. The longer the lead time, the more inventory you'll need, and the more safety stock because variability is a time-sensitive phenomenon. There is more risk of variation over the course of a week than there is over one day. Forecasts are also more accurate in the near term than they are further out. Replenishment planning is focused on replenishment lead time. With shorter lead time, replenishment quantities can be smaller, meaning that less inventory is brought in at a time and used up more quickly—so overall inventory level is reduced.

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Replenishment lot size is usually determined through the general concept of economic order quantity or EOQ. EOQ balances ordering costs (fixed costs associated with purchasing or making an item regardless of quantity) and carrying cost (larger order quantity means higher inventory and therefore higher carrying cost). EOQ finds the lowest cost replenishment order quantity.

The key to reducing the "economic" replenishment order size (thereby reducing inventory) is to reduce the fixed ordering cost (there isn't a lot you can do to reduce carrying cost, unit cost or usage—the other major factors). For purchased items, ordering cost includes the operating cost and efficiency of the purchasing department, receiving and inspection, and material handling (put-away).

Section 07

Simple but proven strategies for smarter inventory control

Summary

Inventory is a major investment for most retailers and lower inventory is often an important management objective. Simply lowering inventory without a plan, however, is likely to increase the incidence of shortages, expediting, disappointed customers and lost business. There are smart ways to reduce inventory that won't increase the risk of shortages. To manage (and reduce) inventory, one basic requirement is to know what you have. A good inventory tracking system does not have to be sophisticated or expensive. More than anything else, it takes discipline in reporting activities (transactions) in a timely and accurate manner. Software can help with inventory tracking and add many tools for measuring and improving accuracy.

Inventory control, and the ability to reduce inventory to the amount needed to assure desired availability, depends on effective replenishment planning. There are a number of approaches for triggering and managing replenishment and there is software available to help, ranging from simple order-point systems embedded in basic inventory software to fully integrated enterprise-wide software suites.

Even with good software and processes in place, the level of inventory is always dictated to some extent by the amount of variability that exists. Variability refers to the unknowns, including demand that doesn't exactly match the forecast and varies from day-to-day even within the forecast; surprises of all sorts including late deliveries from suppliers, inaccurate records, and much more.

We customarily add extra inventory (safety stock) to compensate for this variability. The more variability, the more inventory is required to maintain service levels (fill rate). Because of this, a good improvement strategy focuses on reducing variability through more accurate recordkeeping, better forecasting, reducing lead times, and adding procedural discipline.

Inventory can be considered a "necessary evil", but you don't have to simply accept the level of inventory you have. By understanding the reasons why you have inventory and addressing the underlying causes, you can reduce inventory without raising the risk of shortages—a true win-win for operations managers, the company, and your customers.

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