



10 Teknik Manajemen Inventaris Terpenting yang Harus Anda Ketahui

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Berada di tempat yang tepat, dengan barang yang tepat, dalam jumlah yang tepat, dan pada waktu yang tepat bukanlah keberuntungan; itu adalah manajemen inventaris yang cerdas. Dalam kasus lain, produk jadi dapat menumpuk dan memenuhi ruang yang tersedia sepenuhnya ketika tidak terjual.

Jadi, bagaimana Anda hanya mempertahankan stok yang benar-benar diminati? Kehabisan stok berarti tidak mampu memenuhi permintaan pelanggan, sedangkan kelebihan stok akan menjadi bentuk lain dari stok mati, dan sekali lagi, itu akan berarti kerugian besar dari investasi.

Semua bisnis ingin menghasilkan keuntungan sebanyak mungkin dan mencoba mengelola persediaan dengan berbagai cara. Metode tersebut disebut sebagai teknik manajemen persediaan. Dalam blog ini, kami akan menjelaskan teknik manajemen persediaan yang paling bermanfaat, signifikansinya, dan cara kerja teknik tersebut.

Daftar isi:

- [Gambaran Umum Manajemen Inventaris](#)
- [10 Teknik Manajemen Persediaan dalam Manajemen Rantai Pasokan](#)
- [Mengapa Manajemen Persediaan Penting?](#)
- [Manfaat Teknik Manajemen Persediaan](#)
- [Keterbatasan Penggunaan Teknik Manajemen Persediaan](#)
- [Kesimpulan](#)

Gambaran Umum Manajemen Inventaris

Persediaan meliputi bahan baku, barang setengah jadi, dan barang jadi yang dapat dijual di pasar untuk mendapatkan keuntungan. Manajemen persediaan melibatkan proses menjaga persediaan di perusahaan agar tetap terkendali. Ini mencakup seluruh proses yang

melibatkan persediaan mulai dari bahan baku hingga barang jadi, seperti pemesanan, penyimpanan, konsumsi, dan penjualan.

Ini adalah kombinasi dari berbagai metode dan peralatan untuk menyimpan, mengirimkan, memesan, dan memindai inventaris atau stok. [Manajemen inventaris dalam manajemen rantai pasokan](#) melibatkan penanganan dan pengaturan stok perusahaan untuk memastikan barang dagangan yang tepat berada di tempat yang tepat pada waktu yang tepat, dengan biaya terendah.

10 Teknik Manajemen Persediaan dalam Manajemen Rantai Pasokan

Setelah memahami gagasan dasar tentang manajemen persediaan, sekarang kita akan beralih ke pertanyaan berikutnya, yaitu, apa saja teknik manajemen persediaan?

Teknik manajemen persediaan adalah strategi yang diterapkan dalam pengelolaan persediaan secara efektif. Tanpa penerapan metode-metode ini, persediaan akan sulit dikelola.

Prinsip-prinsip metode ini menyederhanakan optimasi stok, minimisasi biaya, dan pengiriman tepat waktu.

Inventory management techniques assist the management of various forms of inventory, such as raw material, work-in-progress, and finished goods, within a business in a good manner.

Here are some common tools and techniques of inventory management. The choice of which ones will be selected and the number of techniques they use all depend on the type of product, seasonal requirements, and other factors that may influence the demand.

1. ABC Analysis

[ABC analysis](#) is simply a tool that involves a breakdown of inventory regarding part value and significance of importance.

- **A Items** are the most valuable. These are fewer in number but contribute the most to the business.
- **B Items** are of medium value and importance.
- **C Items** are the least valuable but are large in number.

This assists companies in concentrating more on relevant products and managing their inventories. A items should be given special attention, whereas C items could be treated in a much easier manner. Many companies use more than three categories if the inventory is larger or more complicated.

The formula for ABC analysis in inventory management is:

$$\text{Annual Usage Value} = \text{Annual Demand} * \text{Unit Cost}$$

Remember, ABC analysis in inventory management is different from the ABC method in cost accounting. The one used in cost accounting allocates the overhead costs, such as salaries and rent, to various products.

How ABC analysis works

ABC analysis is a tool that ranks inventory items in the context of annual value, which is arrived at by multiplying usage by cost. The items are then assigned to one of three groups: A items are of a low quantity that have the largest proportion of the inventory value, B items are moderate in number and value, and C items are many, having the least value.

Businesses pay more attention to the items of type A, which should be under more control and reordered more often than B and C items, which are controlled less carefully. This aids in cutting down expenditure and minimizing a shortage of vital products.

2. Just-in-Time (JIT)

Just-in-Time (JIT) refers to a system in which the inventories are ordered, manufactured, or delivered on an as-needed basis. It seeks to minimize carrying costs, eradicate wastage, and automate operations by keeping in check an inventory with the actual demand. Firms using JIT do not stock and depend on accurate forecasting and coordination of the suppliers.

Let's take an example of one of the global leaders in car manufacturing and sales, Toyota, which implemented the JIT technique. They recognized that the advanced delivery of raw material was one of their main factors affecting inventory management.

After adopting JIT, raw materials are delivered to the production floor only after a customer places an order, making Toyota flexible and responsive to customer needs. With the help of the JIT technique, they were able to reduce excess inventory and cut expenses, and minimize waste.

How JIT Works

The JIT systems do not initiate purchases or manufacture until a specific order or demand triggers it. Raw materials and finished goods are delivered on time when they are needed. There is no buffer stock. Each of the inputs and outputs is well-timed.

JIT relies on proper data on demands, effective processes, quality management, and the certainty of suppliers in order to run successfully. Enterprise Resource Planning (ERP) systems are used by most companies to allow them to keep track of the movement of inventory, schedule purchases, and respond promptly to changes on demand. A good JIT boosts cash flow, cuts down wastage, and makes operations more flexible.

3. Safety Stock

When additional inventory is carried to guard against requirements in the supply chain, against demand turbulence, or incorrect forecasts, it is referred to as safety stock. It works as a cushion that allows you not to run out of stock in case not everything is going your way.

The correct level of safety stock will be determined by your inventory turnover time, the quality of your suppliers, and the foreseeability of demand. It is not meant for daily use, but acts as insurance in the eventuality of something going wrong.

The formula for safety stock in inventory management is:

$$\text{Safety Stock (SS)} = (\text{Max Lead Time} \times \text{Max Sale}) - (\text{Average Lead time} \times \text{Average Sale})$$

How safety stock works

Safety stock takes place in your warehouse until it is demanded. A delayed shipment or an unexpected surge in demand can mean you have to go to this reserve to continue processing orders without any hitch.

It provides your business with greater stability. You have less reason to rely on supplier speed; your supply of product is less likely to be blown away by changing demand or to lose sales/frustrate customers. Deciding on the appropriate safety stock requires some data and subjectivity, and when done properly, it will allow operations to continue even when supply and demand do not match.

4. Economic Order Quantity (EOQ)

Economic Order Quantity, also referred to as EOQ, is the optimum quantity of products that a firm ought to order to satisfy the needs of the customers without incurring excessive overhead costs on stock. It brings a balance among three costs, which are holding inventory, stock out, and ordering.

Normally, EOQ will make assumptions that such costs and demand remain constant even as time changes. However, this may not be true in reality, as demand and cost may vary. The aim is to determine the size of the order that minimizes the overall cost. EOQ applies to any company that purchases and holds inventory. It assists managers on the optimal quantity to order so as not to end up paying excessively to store products or place orders frequently.

The formula for EOQ in inventory management is:

$$EOQ = \sqrt{(2DS / H)}$$

Where:

D = Annual demand

S = Ordering cost per order

H = Holding cost per unit per year

How Does EOQ Work?

The price paid by the company for making an order at a time will be cheaper since there is bulk buying. However, more stock items mean spending additional finances to maintain and store them. EOQ determines the ordering cost-balance with the storage cost balance.

This assists businesses in ordering the perfect quantity that is neither too small nor huge. The cost of ordering this quantity is inexpensive, and the company does not experience shortages when it comes to its products.

5. Dropshipping

[Dropshipping](#) is a retail system in which you do not stock anything. Rather, the products are warehoused and shipped by the suppliers to your clients. The method reduces start-up expenses and eliminates carrying stock, so that you can sell a wide product selection with no warehouse. Your job will primarily be to display the products, accept orders, offer customer care, and handle returns, as suppliers will deliver the products and store them.

How Dropshipping Works

Once one of your customers places an order on your site, you send the information to your supplier. The supplier goes ahead and packages and transports the goods to the customer. Effective communication and sound technology are necessary to allow the tracking of the orders and ensure that they are delivered on time.

6. Material Requirements Planning (MRP)

MRP is a manufacturing enterprise software tool used to assist a manufacturer in planning materials that are required to construct finished products. It obtains the appropriate quantities of raw materials and quantities to be ordered at a given time or manufactured.

This avoids overstock and makes materials available in the form of just-in-time delivery to fulfill the production needs. There is a tendency to expand MRP, thus becoming part of ERP systems to manage all resources.

How MRP Works

The process of MRP starts by analyzing sales orders and demand estimates to forecast the requirements of production. It gets a clear picture of what and how much is required through the bill of materials, i.e., a detailed list of all parts and raw materials required in each product. Based on this, the system automatically sets orders and updates inventory levels as demand changes.

This automation prevents production delays that are occasioned by shortages and saves the cost of stocking excessively or rushing orders. The outcome is more efficient output, reduced costs, and increased deliverability.

7. First In, First Out (FIFO) and Last In, First Out (LIFO)

Let's discuss FIFO and LIFO techniques in detail:

7.1) What is FIFO?

FIFO implies that the first ones that you purchase are the first ones that you will sell. In this approach, stock flow assumes that the stock flow follows the sequence in which it arrives. In companies that deal with perishable commodities or products that expire after a time, FIFO guarantees to sell old products first before they go bad.

In accounting, FIFO assesses the cost of goods sold by the oldest costs of purchase, and the rest of the inventory is assessed at the new costs. Inflation normally leads to a decreased cost of goods sold, and increased profits since old stock that is priced low is initially deemed as being sold.

It may vary in the physical flow of the goods, but the companies have to justify their inventory method of valuation. FIFO links the costs with revenues as the older costs of inventory are always recognized.

How does FIFO work?

- **Receiving Inventory:** New stock is placed behind existing stock.
- **Selling Inventory:** The oldest inventory is sold first to keep stock fresh.
- **Record Keeping:** Accurate tracking helps prioritize selling older items first.

7.2) What is LIFO?

LIFO presupposes that the latest purchases are the first sold. It measures the latest purchase cost against sale, older inventory's cost is still kept in the balance sheet.

When prices are increasing, LIFO tends to produce an increasing cost of goods sold and a decrease in taxable income, which is favorable in the tax characteristics. Nevertheless, it can understate inventory and misrepresent financial statements, particularly in a situation where there are fluctuations in prices.

In India, LIFO is prohibited under Ind AS, which is aligned with IFRS, as IFRS does not allow LIFO. As a result, FIFO is preferred for both financial reporting and compliance.

How does LIFO work?

- **Receiving Inventory:** New stock is placed in front of older stock.

- **Selling Inventory:** The newest inventory is sold first.
- **Record Keeping:** Detailed records ensure recent purchases are recognized as sold first.

8. Demand Forecasting

Demand forecasting involves estimating how much of each product you will need to keep in stock to meet customer demand. If your business has sales history, you use past sales data. If you are new, you rely on general industry information and guesses until you collect your data.

This helps you avoid having too much or too little stock. You set minimum amounts to keep and decide when to reorder. It's important to check and update your forecast every few months to keep it accurate.

How demand forecasting works

Demand forecasting uses two types of information. First, qualitative data from outside and inside the business, like news, customer opinions, and market trends. Second, quantitative data from sales numbers, busy shopping times, and website visits.

Modern tools use smart technology like AI to study this data and give better predictions. This helps businesses keep the right stock and avoid waste or lost sales.

9. Consignment Inventory

Consignment inventory is a model where a retailer stocks products but does not own them until they sell. The supplier keeps ownership until a customer buys the item. This means the retailer can return unsold goods without losing money. It's often used for seasonal or perishable products like holiday items and fresh produce.

How Consignment Inventory Works

The supplier (consignor) and retailer (consignee) agree on terms covering pricing, shipping, returns, and responsibility for damages. The supplier sends the inventory to the retailer, who only pays for items after they sell.

The retailer sets the sale price and keeps the profit. Unsold products can be returned to the supplier without penalty. Ownership stays with the supplier until the sale happens and payment is made.

10. VED Analysis

VED analysis is a technique used in inventory management to categorize items based on their importance to the business. The acronym VED stands for Vital, Essential, and Desirable. This method helps organizations prioritize inventory control by identifying which items are critical for smooth operations and which are less urgent. By sorting inventory into these three groups, businesses can focus their resources and attention where it matters most.

How VED Analysis Works

- **Vital items** are those that are crucial for the business to function. Running out of these would cause significant disruption. Examples include key raw materials, critical components, or finished goods that have high demand.
- **Essential items** are important but not as critical as vital ones. These could be maintenance supplies, spare parts, or everyday office materials.
- **Desirable items** are useful to keep in stock but are not critical for operations. This group might include promotional materials, seasonal products, or items with low usage rates.

Using VED analysis, a company can ensure that vital items are always available, manage essential items carefully, and optimize inventory levels for desirable items, reducing waste and improving efficiency.

Why is Inventory Management Important?

Management of the inventory plays a very significant role in ensuring the efficiency of businesses that deal with [supply chain management](#) and their performance in satisfying the consumers and eventually achieving business success.

Here is why it matters:

1. Avoid Stockouts and Overstocking

One should know how much stock is available and two costly errors can be avoided:

- The shortage of products damages customer satisfaction and sales.
- Over-ordering binds up cash and ends up with stock.

2. Efficient Use of Capital

Inventory ties up a significant portion of a company's funds. When you plan inventory poorly, it is either too much or too little to satisfy demand, and that is damaging to the economy.

3. Storage and Holding Costs

Inventory does not come free to hold. You are paying the warehousing (rent, utilities, security), insurance and shrinkage, and tax on the stored goods in certain areas

4. Labor and Operational Time

Inventory must be regularly managed, which includes regular stock audits, stock counts, and [reconciliations](#). That is time and salaries. Seasonal items may only require a one-time count during the year, due to low turnover, but high-velocity products may require monitoring on a weekly basis.

5. Risk of Wasting Effort and Resources

All the time, money, and energy spent on sourcing and inventory management can be wasted if systems are not in place. Excess stocks may get outdated. Undersupplied products can lose you some loyal customers.

6. Strategic Advantage When Done Right

Smart inventory management lets businesses:

- Respond faster to demand shifts
- Reduce excess and waste
- Improve cash flow
- Make better purchasing decisions

Benefits of Inventory Management Techniques

Here are some of the key benefits of using inventory management techniques:

1. Saves Money

Good inventory management helps you avoid buying too much stock or running out of it. This cuts down on storage costs and reduces waste.

2. Prevents Stockouts

You can keep popular items available for customers by knowing when to reorder and how much you need.

3. Improves Order Accuracy

With better tracking, it's easier to send the right products to the right customers, which means fewer mistakes and returns.

4. Keeps the Warehouse Organized

Inventory techniques help arrange products in a smarter way so staff can find and ship them faster.

5. Helps You Make Better Decisions

When you have clear data on what's selling and what's not, you can plan better, order smarter, and grow your business with more data-driven planning.

Limitations of Using Inventory Management Techniques

While using different techniques for managing inventory is beneficial, there are some limitations to using these techniques, too.

Here are some of the following:

1. Overstocking and Understocking

Inventory balancing is not as easy as it sounds. Overstocking ties up cash, consumes margins, and takes up warehouse space. Understocking causes delays in shipping, gives rise to customer dissatisfaction, and sales loss. The demands that vary in real-time cannot be predicted by most systems, particularly when the market is volatile.

2. Inaccurate or Delayed Data

The quality of inventory systems is based on the quality of the data inputted. Errors in records, wrong orders, and ineffective planning choices are caused by inaccurate manual entries, failures to update, and omissions. Even the finest tools cannot help you make smart calls without clean, real-time data.

3. Lack of Real-Time Visibility

With multi-warehouse operations or even omni-channel, the location of stock or the velocity can easily get lost. Costs of delay in visibility are an issue of duplicate orders, failure in fulfillment, and failure to capture the opportunities. This is resolved by real-time tracking systems, which are costly and require time to install in the appropriate way.

4. Warehouse Inefficiencies

Even with the right stock levels, a poor warehouse layout slows down operations. All of these cause inefficient picking routes, misplaced items not having appropriate categorization, and also increase labor cost and therefore reduce dispatch speed. A great number of inventory systems fail to take into consideration physical layout difficulties.

5. Supply Chain Complexity

In the modern supply chains, there are numerous vendors, geographies, and modes of transport. One delay can grow into a supply chain disaster. The majority of inventory methods presuppose a constant lead time and do not comply with the unpredictability of the world too well.

Conclusion

Finally, inventory management techniques differ according to business size, product, and growth plan. Techniques range from basic manual checks to software-driven systems that use data to determine the requirements and automate processes. Tracking stock levels reduces waste and lowers storage costs, and enhances order accuracy. However, if inventory data is wrong, it leads to over-storing, working capital problems, and disrupted workflows. If not checked on time, these issues spread across the supply chain, reducing sales and affecting relationships with customers. Therefore, making it essential for successful business operations.

Inventory Management Techniques – FAQs

1. What are the four types of inventory?

The four types of inventory most commonly used are Raw Materials, Work-In-Process (WIP), Finished Goods, and Maintenance, Repair, and Overhaul (MRO).

2. What does FSN analysis mean in inventory management?

FSN analysis refers to an inventory management technique that divides goods into three categories: fast-moving, slow-moving, and non-moving. Fast-moving items sell quickly and need regular restocking. Slow-moving

items have lower turnover rates. Lastly, non-moving items usually sell very slowly or not at all. Different manufacturing businesses can adjust their management strategies by arranging inventory this way.

3. What is the reorder point in inventory?

Reorder point (ROP) is the inventory level at which you need to place a new order to avoid stockouts. When stock falls to this level, it acts as a trigger to reorder, ensuring you don't run out while waiting for the next delivery. ROP isn't fixed. It changes based on lead times, sales patterns, and seasonality, so it should be reviewed regularly.

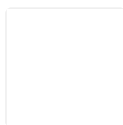
4. What is the difference between EOQ and MOQ?

Economic Order Quantity (EOQ) is a formula used by companies to determine the optimal order quantity that minimizes the total costs associated with ordering and holding inventory. This includes warehousing costs, order processing fees, and the cost of goods. On the other hand, Minimum Order Quantity (MOQ) is the minimum quantity that a supplier is willing to sell, ensuring that they can operate profitably while covering their production costs.

5. Why are simple spreadsheets not effective for inventory management?

Spreadsheets offer limited access to current data, leading to potential delays. They're prone to human error during manual entry. Furthermore, they cannot seamlessly integrate with other operational systems. This makes for an inefficient inventory control system.

About the Author



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Chinnappa is an experienced Supply Chain associate with immense expertise in logistics optimisation, inventory management, and procurement strategies. He is skilled in streamlining operations, demand forecasting, and supplier relationship management.

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