**Required Metrics and Analysis:**

1. **Inventory Analysis:**
   * ABC Analysis
   * VED Analysis
   * HML Analysis
   * Economic Order Quantity (EOQ)
   * Fast, Slow, and Non-moving (FSN) Analysis
   * Custom Par Levels
   * Inventory Turnover Rate
   * Days on Hand
   * Weeks on Hand
   * Stock to Sales Ratio
   * Sell-through Rate
   * Backorder Rate
   * Accuracy of Forecast Demand
   * Rate of Return
2. **Sales KPIs:**
   * Inventory Turnover Rate
   * Days on Hand
   * Sell-through Rate
   * Backorder Rate
   * Accuracy of Forecast Demand
   * Rate of Return
   * Product Sales
   * Revenue per Unit
   * Cost per Unit
   * Gross Margin by Product
   * Gross Margin Return on Investment (GMROI)
3. **Operational KPIs:**
   * Lost Sales Ratio
   * Average Inventory
   * Fill Rate
   * Gross Margin Percent
   * Order Cycle Time
   * Stock-Outs
   * Lead Time
4. **Inventory Management Methods for Retailers:**
   * Economic Order Quantity (EOQ)
   * Open to Buy (OTB)
   * Safety Stock and Par Level
   * Reorder Point

**Inventory Analysis Techniques.**

There are several methods you can use to perform your inventory analysis. The best way to do it depends on your industry and your inventory type. Here are the most common techniques or methods and the industries that use them:

* **ABC Analysis:**  
  ABC Analysis is the most popular inventory analysis method (especially for retail) ranks inventory from the highest revenue and profit margins to the lowest using three buckets: A, B and C.
* **VED Analysis:**This method is based on how vital it is to have an inventory item in stock. Manufacturing companies use this technique to assess the components and parts they must have on hand. With this analysis, they measure inventory based on:
  + **Vital:** Inventory that must always be in stock at sufficient levels
  + **Essential:** Have at least a small number of these items in inventory
  + **Desirable:** It’s not critical to always have these items on hand
* **HML Analysis:**  
  Often used in manufacturing, this analysis measures the inventory based on high, medium and low cost.

The accounting cost of inventory also depends on whether a company uses Last in, First Out (**LIFO**) or First in First Out (**FIFO**) accounting. LIFO companies sell the inventory first that they bought last. **FIFO** companies sell the inventory first that they bought first. In First Expire, First Out (**FEFO**), expiration dates drive the sales, with companies exhausting the stock with the earliest expiration date first. To learn more about LIFO, FIFO and other cost accounting methods, read [The Key to Using Inventory Cost Accounting Methods in Your Business](https://www.netsuite.com/portal/resource/articles/inventory-management/inventory-cost-accounting-methods-examples.shtml).

* **Economic Order Quantity (EOQ):**  
  This method assesses the sales rate for an item, along with its ordering costs and storage costs. Using these three variables, **EOQ** determines how often and how much the company should order. The goal is to keep the ordering and storage costs as low as possible while still meeting all customer orders. Learn more about **EOQ** in our [inventory forecasting guide](https://www.netsuite.com/portal/resource/articles/inventory-management/inventory-forecasting.shtml).
* **Fast, Slow and Non-moving (FSN):**  
  In this approach, the company categorizes inventory into three buckets: fast-moving, slow-moving and non-moving inventory. Managers assess the inventory and make new stock purchases based on the category. Companies using **FSN** re-order fast-moving inventory most often.
* **Custom Par Levels:**  
  This analysis sets an inventory amount at which the company must re-order each item. This technique requires extra work at the beginning of the process but can ensure an organization rarely runs out of stock.

**How Do You Choose Which Inventory Analysis Technique to Use?**

The inventory analysis technique that works best for your company depends on your industry and type of work. Some [methods are ideal for retail sales](https://www.netsuite.com/portal/resource/articles/inventory-management/retail-inventory-management.shtml), for example. Others are better for manufacturing.

**Inventory Metrics: Sales KPIs.**

You can use sales metrics to better compete in the marketplace and help your sales team to win deals and collaborate. Set up these KPIs to mesh with organizational goals and use them to optimize the sales teams’ performance.

**Inventory Turnover Rate**

Also known as inventory turnover ratio or inventory turn, inventory turnover rate is the number of times a company sells and replaces its stock in a period, usually one year.

You can use the inventory rate to determine if a business has too much inventory compared to how much of its stock is selling. Inventory rate measures how well a company makes sales from its inventory. Use this formula to calculate inventory turnover rate:

**Inventory turnover rate** = cost of goods sold / average inventory

**Days on Hand**

Days on hand (DOH), also known as the average days to sell inventory (DSI) or average age of inventory, is the rate of inventory turns by day. This daily interval is the most common timeframe after an annual range.

Use this formula to calculate days on hand:

**Days of inventory on hand** = (average inventory for period / cost of sales for period) x 365

**Weeks on Hand**

Weeks on hand demonstrates the average amount of time inventory sells per week: a high weeks on hand measure shows inefficient movement, while a low weeks on hand rate shows efficient inventory movement.

Use this formula:

**Weeks on hand** = (average inventory for period / cost of sales for period) x 52

**Stock to Sales Ratio**

Stock to sales ratio is the measure of the inventory amount in storage versus the number of sales. This broad calculation can be used to adjust the stock to maintain high margins.

Use this formula:

**Stock to sales ratio** = $ inventory value / $ sales value

**Sell-through Rate**

Sell-through rate is a comparison of the inventory amount sold and the amount of inventory received from a manufacturer. This helps demonstrate the efficiency of a supply chain.

Here is the formula to calculate sell-through rate:

**Sell-through rate** = (# units sold / # units received) x 100

**Backorder Rate**

Backorder rate is a measurement of the number of orders a company cannot fulfill when a customer places an order. It shows how well a company stocks in-demand products.

Calculate the backorder rate with this formula:

**Backorder Rate** = (# delayed orders due to backorders / total # orders placed) x 100

**Accuracy of Forecast Demand**

Accuracy of forecast demand, also known as the demand, forecast accuracy, is a percent of how close the actual on-hand quantity is to the forecast. It checks on what a company forecasted, ordered and sold in the prior period.

Use this formula to calculate the accuracy of forecast demand:

**Accuracy of Forecast Demand** = [(actual – forecast) / actual] x 100

**Rate of Return**

Rate of return (ROR), also called the return on investment (ROI), is a percentage that shows the profit on an investment over a period. This percentage is a proportion of the original investment and usually expressed for a year.

Calculate the rate of return with this formula:

**Rate of return (ROR)** = [(final value – initial value) / initial value] x 100

**Product Sales**

Product sales, also known as sales revenue, is the income from customer purchases minus any returns or canceled sales. This metric is normally reported for a standard period, such as a month or year.

Use this formula to calculate product sales:

**Product sales** = gross sales revenue – sales returns – discounts – allowances

**Revenue per Unit**

Revenue per unit is how much one unit of product is worth. This metric is particularly helpful for subscription-based businesses.

Calculate revenue per unit with this formula:

**Revenue per unit** = total revenue for period / average units sold for period

**Cost per Unit**

Cost per unit is how much a single unit of product costs a company to produce or buy. It is best used in companies that manufacture or sell large amounts of the same product.

Use this formula to calculate cost per unit:

**Cost per unit** = (fixed costs + variable costs)/ # units produced

**Gross Margin by Product**

Gross margin by product is the amount of money a company keeps per dollar of sales. This metric removes any costs from producing the item.

Calculate gross margin with this formula:

**Gross margin** = [(net sales – cost of goods sold) / net sales] x 100

**Gross Margin Return on Investment**

Gross margin return on investment (GMROI) shows how much a company made compared to how much it invested in stock purchases. This metric measures how efficiently a company buys and sells its products.

Use this formula to calculate gross margin return on investment:

**Gross margins return on investment** = gross margin / average inventory cost

**Inventory Metrics: Operational KPIs.**

Operational KPIs show how well your business is running. Improved internal business processes and metrics lead to more satisfied customers.

**Lost Sales Ratio**

A lost sales ratio is the number of days a specific product is out of stock compared to the expected rate of sales for that product. It indicates when a company runs too lean on its stock.

Use this formula to calculate the lost sales ratio:

**Lost sales ratio** = (# days product is out of stock / 365) x 100

**Average Inventory**

Average inventory is the amount of inventory a company has on-hand during a period. The goal is for companies to keep their average inventory consistent over the course of a year.

Calculate average inventory with this formula:

**Average inventory** = (beginning inventory + ending inventory) / 2

**Fill Rate**

Fill rate, also called line fill rate, is a measure of all portions of the supply chain, including the order fill, line fill and unit fill. This important metric helps companies monitor order fills and line fills.

Use this formula to calculate fill rate:

**Fill rate** = [(# total items – # shipped items) / # total items] x 100

**Gross Margin Percent**

Gross margin percent is the portion of the selling price that is gross profit. This metric describes the level of profits. Calculate gross margin percent with this formula:

**Gross margin percent** = [(total revenue – cost of goods sold) / total revenue] x 100

**Order Cycle Time**

Order cycle time (OCT), also known as order timeliness, is the average time it takes for a company to fulfill an order for the Vendor. It demonstrates how well companies meet demand, including shipping readiness, shipping and delivery. Calculate order cycle time with this formula:

**Order cycle time** = (time customer received order – time customer placed order) / # total shipped orders

**Stock-Outs**

Stock-outs, also known as out-of-stock items, is the percentage of items not available in inventory when a customer places an order. This metric shows a company’s ability to meet customer demand. Companies hope to keep this percent low. Use this formula to calculate stock-out rates:

**Stock-outs** = (# items out of stock / # items shipped) x 100

**Lead Time**

Lead time is the time it takes for a customer to receive a product after they order it. This KPI measures the efficiency of the entire supply chain or business. Use this formula to calculate lead time:

**Lead time** = order process time + production lead time + delivery lead time

**Inventory Management Methods for Retailers.**

Inventory management methods help retailers generate maximum profits by reducing costs, improving efficiency and understanding sales drivers. These methods optimize quantities purchased from suppliers, fine-tune fulfillment processes, strategically locate products, account for inventory and analyze demand and sales patterns.

The following are some of the key inventory management methods for retailers, organized by category. You can learn more about many of these in the “[Essential Guide to Inventory Control](https://www.netsuite.com/portal/resource/articles/inventory-management/what-are-inventory-management-controls.shtml).”

**Inventory Ordering Techniques for Retailers**

These methods will help you determine demand. Inventory management software can automate this planning.

* **Economic Order Quantity (EOQ):**  
  Use this formula to calculate the ideal order amount. The equation considers demand, ordering costs and carrying costs. Where D is demand in units, S represents ordering costs per order such as shipping, and H represents holding costs such as storage expense, the formula is:

**EOQ** = **√ (2 × D × S / H)**

* **Open to Buy (OTB):**  
  This plan-ahead technique tells a retailer how much merchandise to buy in dollar terms for a fixed period. The goal is to ensure there’s adequate supply and to generate positive cash flow. The formula is:

Planned sales **+** projected end-of-period inventory on hand, in transit and on order **-** planned beginning of period inventory = **OTB at retail cost**

* **Safety Stock and Par Level:**  
  Safety stock is the amount of inventory you order to serve as a buffer to prevent running out of stock. You carry this additional quantity in case of incorrect sales forecasts or unexpected consumer demand.

**Par level** = safety stock **+** the minimum inventory required to meet customer demand

If inventory falls below par level, it is time to reorder.

* **Reorder Point:**  
  Using sales data and the lead time for new merchandise to arrive from vendors, retailers can calculate the reorder point, or the inventory threshold that should trigger reorder. The formula is:

**(**Average daily unit sales **x** average lead time in days**) +** safety stock in units = **reorder point in units**