Inventory Management KPIs to Track

Do your inventory management practices and processes contribute to profitability — or harm it? Track these KPIs to find out, then start maximizing returns on your inventory.

Inventory is one of the largest expenses for products-based companies, so it’s an area of the business you’re likely watching closely. There are countless KPIs you can use to track inventory performance, but we’ve highlighted some of the most important ones below. Once you choose and start tracking the metrics most relevant to your business — more on that later — they’ll help you:

1. **Inventory Turnover Rate**
   The inventory turnover rate, which can also be calculated as inventory turnover ratio, is the number of times a company sells and replaces its stock in a certain period, usually one year. A high inventory turnover rate indicates strong sales and efficient use of inventory.

   ![Image]

   Some of the metrics below mention cost of goods sold (COGS) or average inventory, so here’s a quick refresher on how to calculate those:

   \[
   \text{COGS} = \left( \frac{\text{Cost of beginning inventory} + \text{Purchases}}{\text{Average inventory value}} \right) - \frac{\text{Cost of ending inventory}}{\text{Average inventory value}}
   \]

   \[
   \frac{\text{Average Inventory}}{2} = \frac{(\text{Beginning inventory} + \text{Ending inventory})}{2}
   \]

2. **Days on Hand (DOH)**
   Days on hand measures the average number of days a company takes to sell through available inventory. A healthy, profitable company should have a low DOH, indicating that inventory is selling fast. In the formula below, the result will be in number of days.

   \[
   \text{Days of Inventory on Hand} = \left( \frac{\text{Average inventory value for period}}{\text{COGS for period}} \right) \times 365
   \]

3. **Stock to Sales Ratio**
   Stock to sales ratio, aka inventory to sales ratio, measures the value of your inventory against the value of sales. A high stock to sales ratio indicates you may be overstocked, and a very low ratio can indicate that you’re frequently out of stock.

   \[
   \frac{\text{Stock to Sales Ratio}}{\text{Average inventory value}} = \frac{\text{Value of net sales}}{\text{Value of net sales}}
   \]

4. **Sell-Through Rate (STR)**
   The sell-through rate compares the amount of inventory sold with the amount received during a specific timeframe. A high STR indicates strong sales performance and accurate inventory planning.

   \[
   \text{Sell-Through Rate} = \left( \frac{\text{Number of units sold}}{\text{Number of units received}} \right) \times 100
   \]
5. Backorder Rate
The backorder rate measures the number of backorders as a percentage of total orders during a given week or month. A low backorder rate signals an ability to fill orders right after customers place them, creating a more positive customer experience.

\[
\text{Backorder Rate} = \left( \frac{\text{Number of delayed orders due to backorders}}{\text{Total number of orders placed}} \right) \times 100
\]

6. Demand Forecast Accuracy
Demand forecast accuracy is a way to measure the difference between actual and forecasted demand. The lower this number, the better your business is at meeting demand without carrying excess inventory.

\[
\text{Demand Forecast Accuracy} = \left( \frac{\text{Actual demand} - \text{Forecasted demand}}{\text{Actual}} \right) \times 100
\]

7. Return on Investment (ROI)
The return on investment, sometimes called rate of return, shows the profit on an investment like a specific item or category of items, often over one year. Companies use ROI to direct decisions about what products to invest in or pull back on.

\[
\text{ROI} = \left( \frac{\text{Final value} - \text{Initial value}}{\text{Cost of investment}} \right) \times 100
\]

8. Cost per Unit
Cost per unit is how much a single product unit costs a company to produce or buy. Companies use cost per unit calculations to guide pricing and track profitability.

\[
\text{Cost per Unit} = \frac{\text{(Fixed costs + Variable costs)}}{\text{Total number of units produced}}
\]

9. Gross Margin by Product
Gross margin by product is the amount of money a company keeps per dollar for each sale of a certain product without consideration of other company expenses. This KPI helps companies measure the profitability of individual products.

\[
\text{Gross Margin by Product} = \frac{\text{(Net sales of product - COGS of product)}}{\text{Net sales of product}}
\]

10. Gross Margin Return on Investment (GMROI)
Gross margin return on investment shows how much a company earned compared to how much it spent on inventory. The higher your GMROI, the more profitable your inventory investments.

\[
\text{Gross Margin Return on Investment} = \frac{\text{Gross margin}}{\text{Average inventory cost}}
\]

How to Choose the Right KPIs
You don't need to track all the KPIs on this list — choose metrics that move your business toward its specific strategic goals. Other tips:

- Select KPIs for areas in obvious need of improvement.
- Introduce a few KPIs at a time to avoid overwhelming your team.
- Explain to employees how the KPIs relate to overarching business goals to increase buy-in.
- Stick with the initial inventory KPIs you choose for at least a few months to get a sense of how your performance is trending.
- Revisit KPIs regularly to make sure they’re still tracking what you need to know.

Inventory Receiving KPIs

11. Time to Receive
Time to receive or receiving time measures the time it takes to bring in new stock and prepare it for sale. If your time to receive is higher than what’s typical in your industry — it will vary based on the size and type of goods — you should carefully evaluate your receiving processes.

\[
\text{Time to Receive} = \text{Time for stock validation} + \text{Time to add stock to records} + \text{Time to prep stock for storage}
\]

12. Supplier Quality Index (SQI)
The supplier quality index measures a vendor’s performance in various areas. Companies use SQI to evaluate and compare vendors, usually monthly or annually. The criteria and weight of scores should be based on what matters most to a business. Scores are often assigned every month and used for a monthly SQI or added up at year’s end for an annual average.

\[
\text{Supplier Quality Index} = (\text{Material quality} \times 45\%) + (\text{Corrective action} \times 10\%) + (\text{Prompt reply} \times 10\%) + (\text{Delivery quality} \times 20\%) + (\text{Quality systems} \times 5\%) + (\text{Commercial posture} \times 10\%)
\]

*Percentages and criteria measured will vary based on business priorities.
Inventory Operations KPIs

13. Inventory Shrinkage
Inventory shrinkage occurs when a company's actual inventory on hand is less than what was initially recorded. Shrinkage is a sign of products being stolen, damaged, miscounted, or misplaced.

\[
\text{Inventory Shrinkage} = \frac{\text{Ending inventory value} - \text{Physically counted inventory value}}{\text{Physically counted inventory value}}
\]

14. Inventory Carrying Costs
Inventory carrying costs, also called holding costs, are the total of all expenses related to purchasing and storing unsold goods, including rent, insurance, utilities, and labor. This KPI gives companies a full picture of the costs associated with having inventory.

\[
\text{Inventory Carrying Costs} = \text{Capital costs} + \text{Storage costs} + \text{Inventory service costs} + \text{Inventory risk costs}
\]

\[
\text{Inventory Carrying Costs as Percentage of Total Inventory Value} = \left(\frac{\text{Inventory carrying costs}}{\text{Total inventory value}}\right) \times 100
\]

15. Fill Rate
Fill rate is the percentage of orders fulfilled without running into issues with stock availability. A high fill rate means more satisfied customers, while a low fill rate indicates issues with stock levels and a higher percentage of unhappy customers.

\[
\text{Fill Rate} = \left(\frac{\text{Number of items shipped}}{\text{Total items ordered}}\right) \times 100
\]

16. Lead Time
Lead time is the time it takes for a business to receive a product after ordering it from a supplier. Lead time includes all steps in the procurement process, from putting in the purchase order through delivery.

\[
\text{Lead Time} = \text{Order process time} + \text{Production time} + \text{Delivery time}
\]

17. Dead Stock Rate
Dead stock rate is the percentage of inventory a company cannot sell. Companies with a high dead stock rate (generally considered anything above 25%) are at a competitive disadvantage due to poor purchasing decisions.

\[
\text{Dead Stock Rate} = \left(\frac{\text{Amount of unsellable stock}}{\text{Amount of available stock}}\right) \times 100
\]

18. Available Inventory Accuracy
Available inventory accuracy measures the difference between recorded stock and actual inventory. If available inventory accuracy is more than a few points below 100%, the difference is likely due to poor inventory tracking methods, theft, breakage, fraud, or human error. While similar to inventory shrinkage, available inventory accuracy is a percentage that expresses the overall reliability of your inventory records while shrinkage is usually expressed as a dollar value and compared to sales.

\[
\text{Available Inventory Accuracy} = \left(\frac{\text{Number of counted items}}{\text{Number of items on record}}\right) \times 100
\]

19. Perfect Order Rate
Perfect order rate measures how many orders a company ships without delays, damage, or inaccuracies. A number close to 100% indicates reliable processes and is a strong indicator of high customer satisfaction.

\[
\text{Perfect Order Rate} = \left(\frac{\text{Number of orders delivered on time}}{\text{Total orders}}\right) \times \left(\frac{\text{Number of orders complete}}{\text{Total orders}}\right) \times \left(\frac{\text{Number of orders damage-free}}{\text{Total orders}}\right) \times \left(\frac{\text{Number of orders with accurate documentation}}{\text{Total orders}}\right) \times 100
\]
Employee-Related Inventory KPIs

20. Labor Cost per Item
Labor cost per item, or unit labor cost, is how much a company pays its workers to produce one unit of a product. Variables like hourly compensation and labor productivity impact the labor cost per item.

\[
\text{Labor Cost per Item} = \frac{\text{Total labor expense}}{\text{Total number of units}}
\]

21. Labor Cost per Hour
Labor cost per hour is how much an employee costs a company on an hourly basis. For a more complete picture, you should include benefits and payroll tax expenses. Companies use labor cost per hour calculations to make decisions about how to best use employees’ time.

\[
\text{Labor Cost per Hour} = \frac{\text{Total payroll costs}}{\text{Total payroll hours}}
\]

How to Track Inventory Management KPIs
The only practical way to consistently track inventory KPIs is with inventory management software. An inventory system will track all the data needed for these metrics and automate the calculations. The best systems will automatically refresh these metrics based on the latest data.

Inventory management software that’s part of a unified ERP system, like NetSuite Inventory Management, is the ideal solution. Operations and purchasing managers can select from a list of popular KPIs or easily set up their own metrics, putting that data into customizable dashboards that allow each team member to see the numbers most critical to them. NetSuite centralizes not only your inventory information, but related data on financials, orders, and customers to expand your reporting capabilities. Beyond metrics, NetSuite Inventory Management also helps you keep inventory costs down and exceed customer expectations with these features:

- Automated tracking of every item that’s in your possession across locations.
- Automatic reminders for replenishment orders based on sales, lead times, and remaining supplies.
- A real-time view of inventory across all sites — stores, warehouses, 3PLs, drop shippers — and sales channels, which helps you optimize stock levels, support “buy anywhere, fulfill anywhere” customer preferences, and avoid lost sales.
- NetSuite Smart Count, which alerts employees to items they need to count and guides them through the cycle counting process.

Track Inventory Costs and Optimize Inventory Levels with NetSuite Inventory Management