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Leveraging Logistics to Drive Performance

How to Optimize Supply Chain KPIs
to Boost your Business

How Supply Chain KPIs Drive Performance

If you're responsible for selling or managing products across e-commerce and retail channels, the success of your business depends on many factors—including how efficiently your supply chain operates. Logistics and fulfillment can make or break success or failure and, when leveraged wisely, can also serve as critical drivers of business performance.

Understanding how to optimize your supply chain involves tracking the right key performance indicators (KPIs). These metrics enable you to monitor the health of your business and find more innovative, efficient ways to manage logistics costs. KPIs unlock your ability to gauge success and identify areas of inefficiency and opportunities for improvement.

Many brands outsource fulfillment to 3PLs or other partners. But if your logistics partner isn't providing you with visibility and support when it comes to monitoring and optimizing these key metrics, it's time to seek a partner that will.

Whether managing fulfillment in-house or outsourcing to a partner, this guide will help you understand and optimize the critical supply chain KPIs that will impact your brand's business.

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Supply Chain KPIs to Leverage for Performance

There are dozens of supply chain KPIs a given brand could track. Some will be more important to specific businesses than others, but each can play a vital role in improving your brand's overall business. Here are some of the top metrics for ecommerce and retail businesses to track, leverage, and optimize.

1 Cost of Fulfillment vs. Average Order Value

What is the number one most critical KPI that determines the success or failure of an operation? Cost of fulfillment vs. average order value (AOV).

AOV is the average total of every order placed over a set period, and is a crucial measurement of success for most businesses. Higher AOVs lead to increased revenue and efficiency and lower customer acquisition costs, as fewer new customers are needed to generate sales. AOV metrics, ideally tracked across every channel and touchpoint, also yield valuable insights into customer habits and purchase patterns.

AOV must be in proportion to fulfillment costs. As a general rule, costs should not exceed 20% of AOV. When this metric is imbalanced, there's no way to achieve profitability. It's simply unsustainable.

Brands achieve balance by optimizing fulfillment operations and storing and shipping inventory close to the customer to reduce shipping costs and delivery time.

KPI Need to Know:
To maintain an equilibrium, look to insights from product affinity reporting you can use to drive basket size.

2 Average Revenue per Unit

Like AOV, Average Revenue per Unit (ARPU) is an important metric as it helps provide insight into product performance and pricing.

ARPU can be used for inventory management, but it's also helpful for:

- Tracking sales when you can't track individual SKUs
- Optimizing pricing strategy
- Pinpointing cost-reduction and revenue-boosting opportunities
- Projecting future revenue growth

To calculate ARPU, divide total revenue by the total units sold:

ARPU = Total Revenue / Total Units Sold

KPI Need to Know:
Your fulfillment partner should provide SKU-level tracking to help you monitor ARPU and other inventory risk factors.

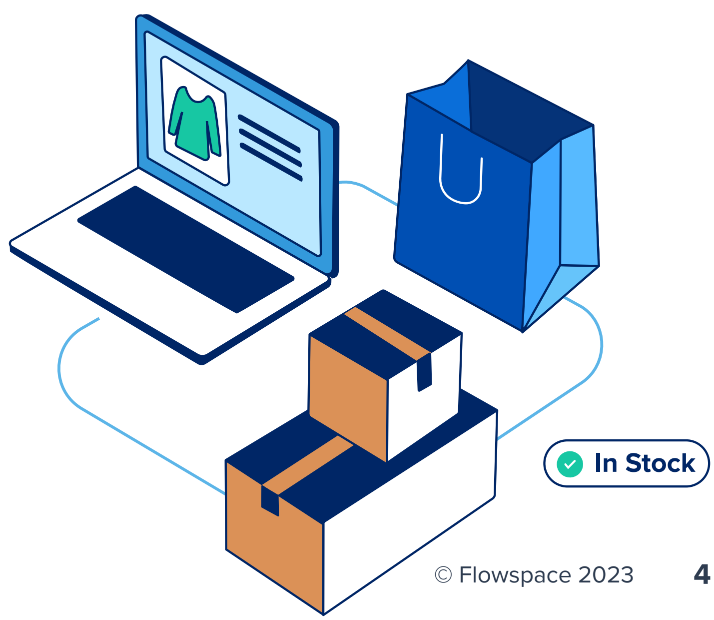
3 Fill Rate

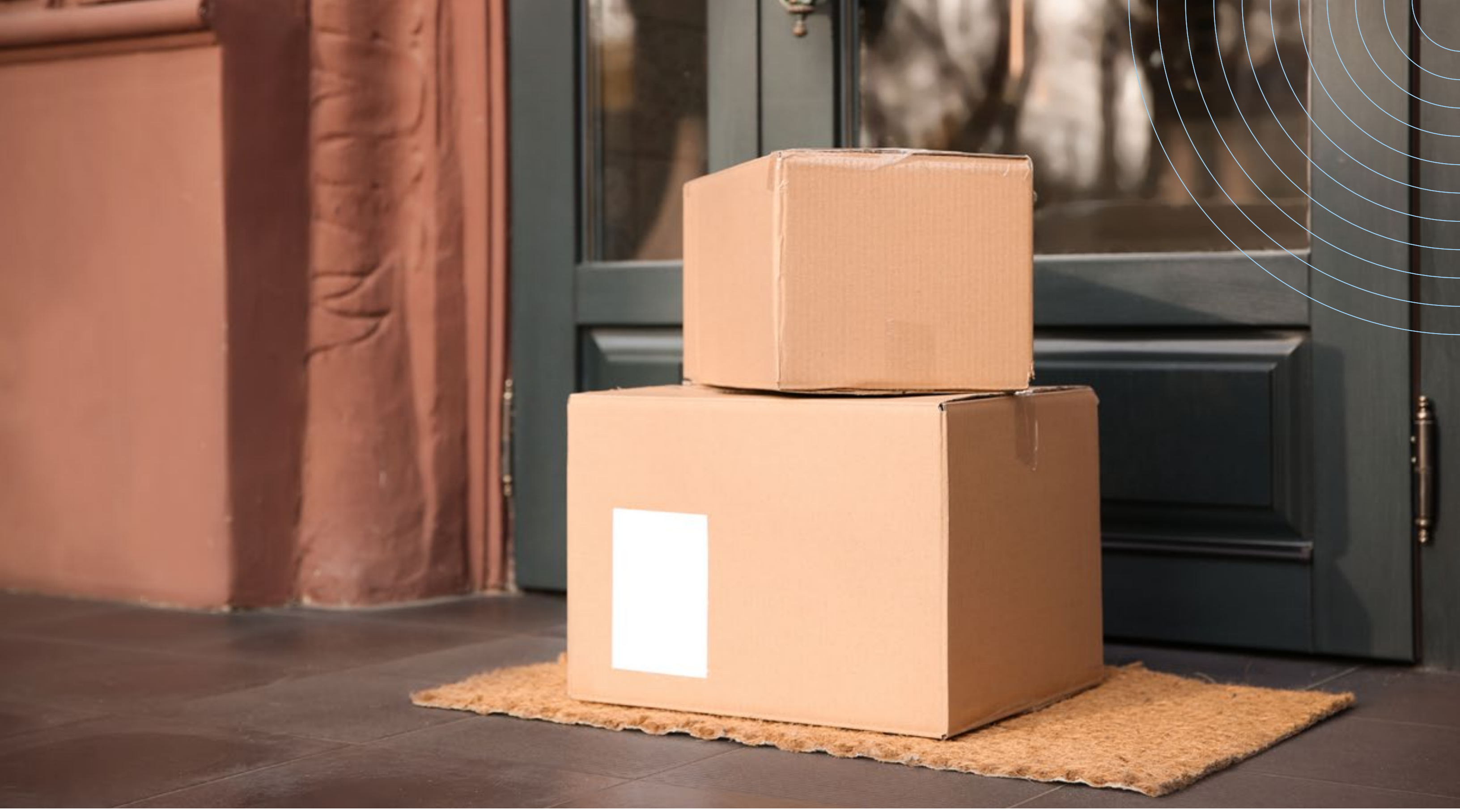
One of the most simple metrics to track and analyze the effectiveness of your fulfillment operation is fill rate.

Fill rate measures the percentage of orders immediately fulfilled by available stock. It's a good indicator of order management and fulfillment efficiency, as well as your ability to meet current customer demand.

When your fill rate is high, you're able to minimize lead times and prevent lost sales to items on backorder. But if fill rate is dropping, take a look at your inventory strategy and KPIs to determine where to adjust. While the theoretically ideal fill rate is 100%, meaning you can fulfill every order received, that's not a realistic goal. The average brand's fill rate is between 85-95% but aim high. 97-99% is the ideal target.

KPI Need to Know:
In addition to providing fill rate SLA calculations, your fulfillment partner should provide inventory insights that will allow you to prevent backorder and other scenarios impacting on-time shipping.





4 Perfect Order Rate

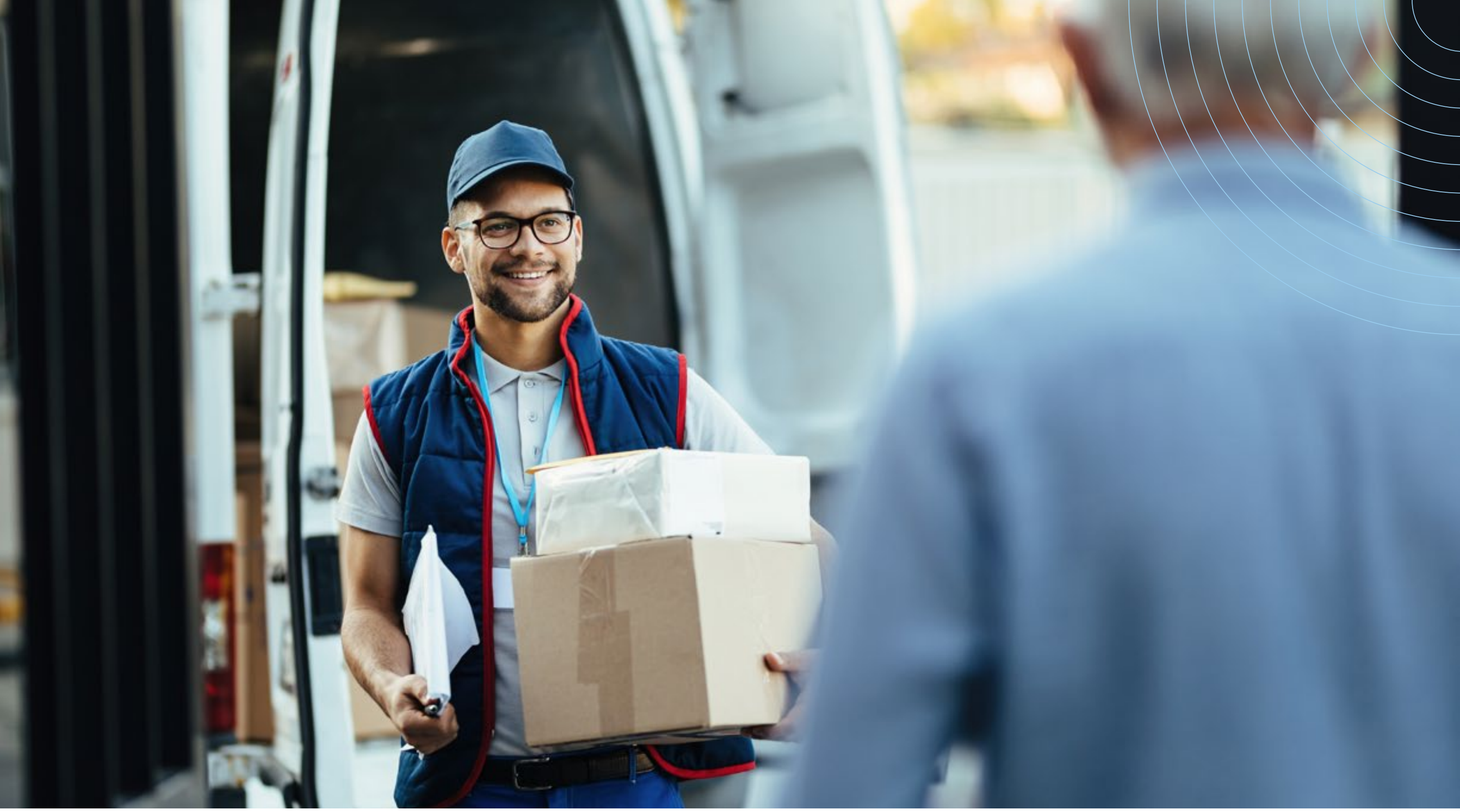
This crucial KPI encompasses many aspects of the supply chain and is a barometer for customer satisfaction.

Perfect order effectively measures the total number of orders processed with no errors, meaning the correct item was shipped, the customer received the item on time, and the item was not damaged—all the components of a positive customer experience.

It's in your best interest to get this KPI right. Customers are satisfied when they receive a perfect order, and making customers happy on a consistent basis is the best way to build satisfaction and drive repeat purchase. Continued delivery of perfect orders only increases satisfaction, because customers know to expect a stellar experience.

This metric can help brands identify weak spots in the supply chain, such as a low rate of on-time delivery. And, more perfect orders leads to reduced returns management costs.

KPI Need to Know:
An experienced fulfillment partner will ensure robust procedures and validation protocols to ensure orders are picked, prepared and labeled consistently and accurately. The perfect order rate should be as close to 100% as possible (generally 99.7%+). To achieve this goal, it's imperative that your fulfillment partner maintains stringent SLA adherence and provides consistently reliable, high-quality service.



5 On-Time In Full Delivery (OTIF)

On-time in-full (OTIF) is similar to the perfect order metric in that it measures performance. It measures the percentage of orders delivered on-time, to the correct location, with the correct specifications and amounts. It is commonly used by major retailers to measure a supplier's ability to meet their standards for fulfillment.

OTIF is an important metric to track because it helps you to understand the efficiency of your fulfillment and delivery process. When aligned with other KPIs and reports, OTIF can be used to gain a bigger picture of how different processes in the supply chain are performing and what could be improved.

For example, a low OTIF score may be a result of stockouts and supply chain disruptions. Even if you have enough inventory on hand, you could still struggle with a low OTIF score due to issues with your fulfillment center, warehousing or storage. Inefficient processes or staff shortages could lead

KPI Need to Know:

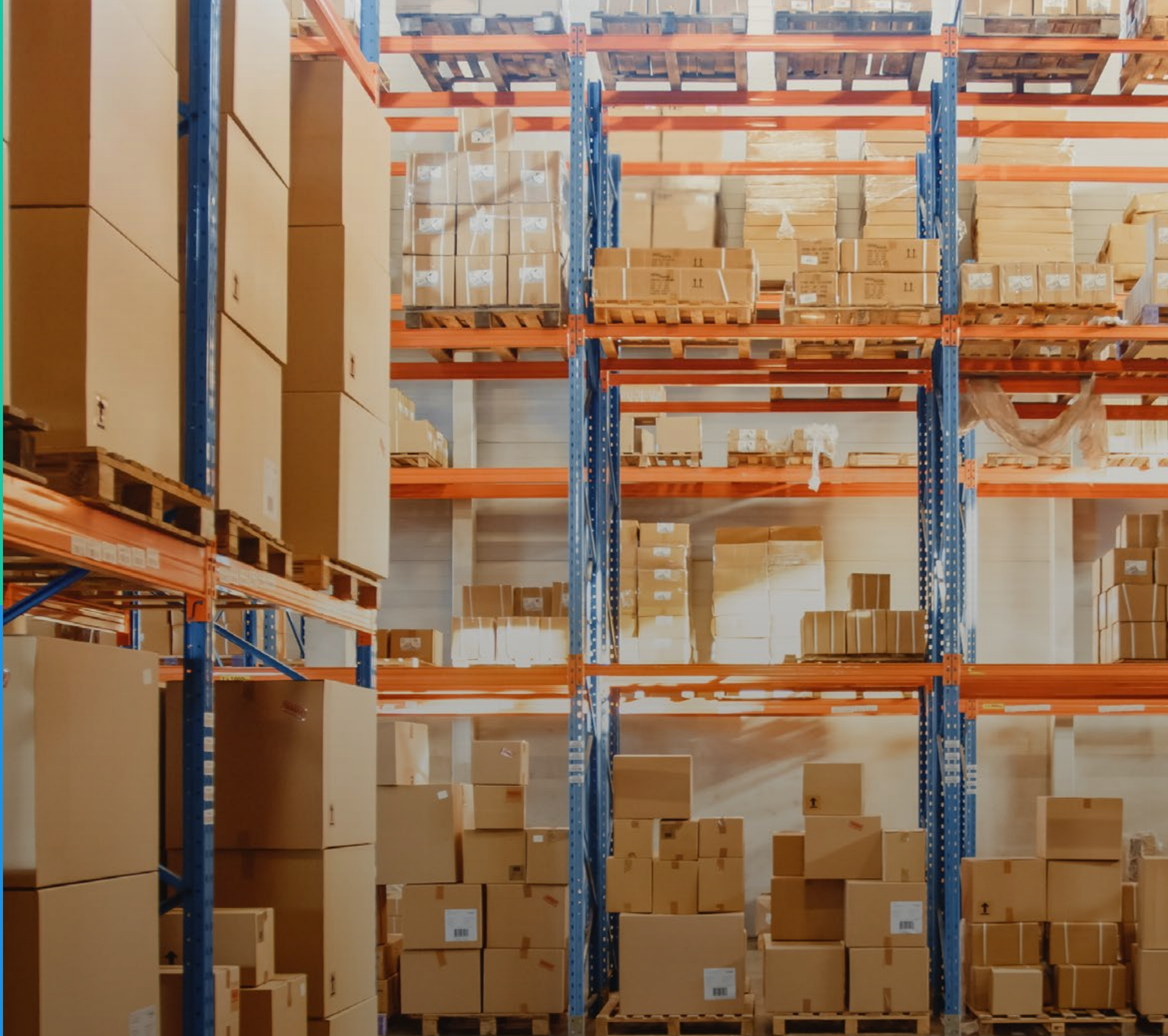
Like Perfect Order, your OTIF rate should be close to 100. Your ability to ensure reliable, efficient fulfillment and delivery can make or break your business in a competitive e-commerce market. Fulfillment partners committed to OTIF compliance will implement systems to proactively monitor OTIF and ensure orders are processed in a manner that supports on-time shipping.

5 Cash-to-Cash Cycle Time

This KPI measures the time between paying for raw materials and getting paid for products you sell. It helps you determine how quickly resources could be turned into cash, and the shorter the cycle, the better.

Moving inventory quickly, with a high turnover ratio, is a primary way to drive profits. It follows that the shorter a cash-to-cash cycle time is, the faster sales are happening and inventory is turning over. This metric is also a good indicator of the efficiency of your brand's supply chain. Taking into account inventory management, sales realization, and payables, the cash-to-cash cycle also includes the time it takes to complete these processes and can offer insight into a business' operating efficiency.
Brands want to have a quick inventory turnover rate, meaning a brand is efficiently using its inventory. It costs money to store merchandise that's not being sold, so brands want to ensure the right inventory levels so they aren't paying excess storage costs but are also able to fill customers' orders.

KPI Need to Know:
When inventory levels are managed efficiently and effective inventory consumption systems are in place, there should be nothing impeding your fulfillment partner's ability to facilitate quick inventory turnover. Fulfillment partners should provide detailed visibility into inventory levels and allocation strategies allowing you to efficiently plan for demand forecasting and maintain optimal inventory levels.



Inventory KPIs

There's nothing more critical than forecasting accuracy. Real-time visibility into inventory levels and demand signals helps brands make more informed, up-to-the-moment forecasting decisions.

Measuring inventory KPIs help brands optimize to improve overall inventory and order management practices. Inventory KPIs fall into three categories: sales inventory, receiving inventory, and operational stock. Here are some of the most critical ones to improve across these buckets.

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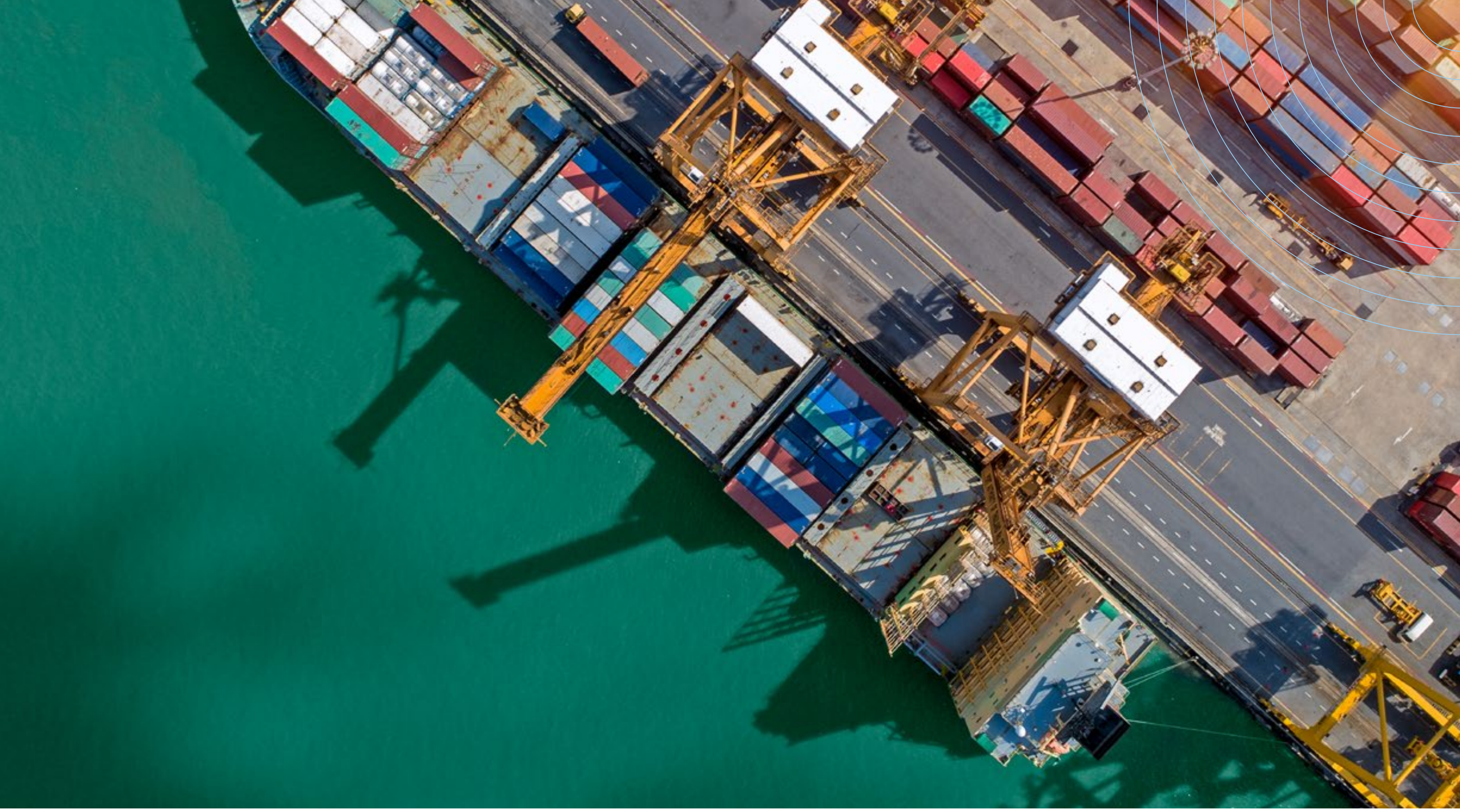


1 Inventory Turnover Ratio

One of the essential inventory KPIs is inventory turnover. This is the ratio of how many times your business has sold then replaced inventory over a set time period, usually a year. Said another way, it measures how efficiently inventory is managed.

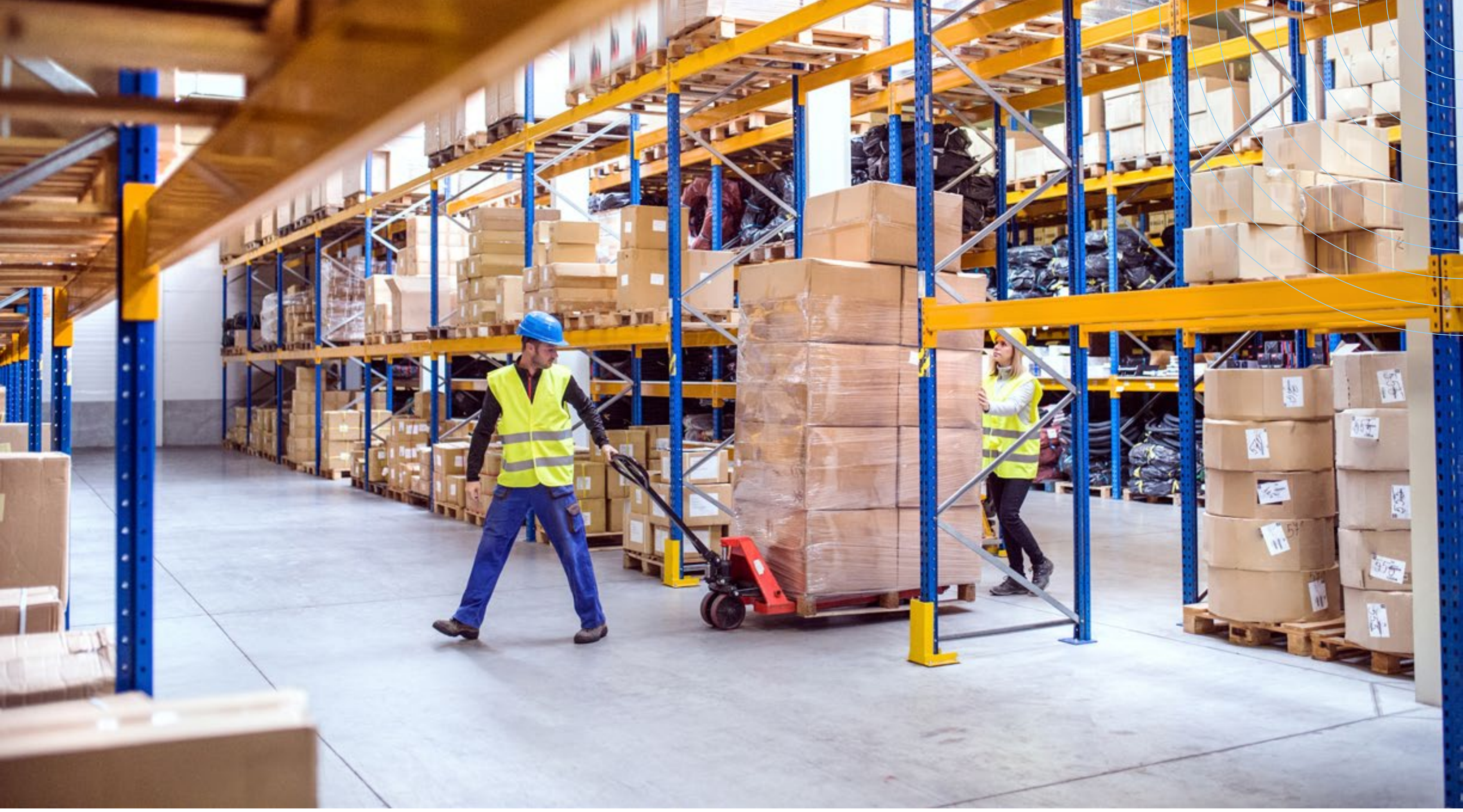
Monitoring inventory turnover – and properly managing inventory – can help you make decisions and answer questions that improve the health of the business, like:

- Should order quantities be increased up or down?
- Are there bulky or slow-moving goods that can be moved to a long-term storage facility?
- Can you retire or certain SKUs to focus on your most profitable products, or offer bundles designed to boost sales??

Low inventory turnover could mean a weak sales ratio or excess inventory, while high turnover could mean strong sales or inadequate inventory levels. Demand forecasting can also help brands and supply chain leaders determine the ideal turnover rate for their specific products.

Costs of Goods Sold / Average Inventory = Inventory Turnover Ratio

KPI Need to Know:
While a high inventory turnover ratio is not always an indicator of success (see: AOV vs fulfillment costs, for instance!) it is usually a sign that your sales are healthy.



2 Days Sales in Inventory

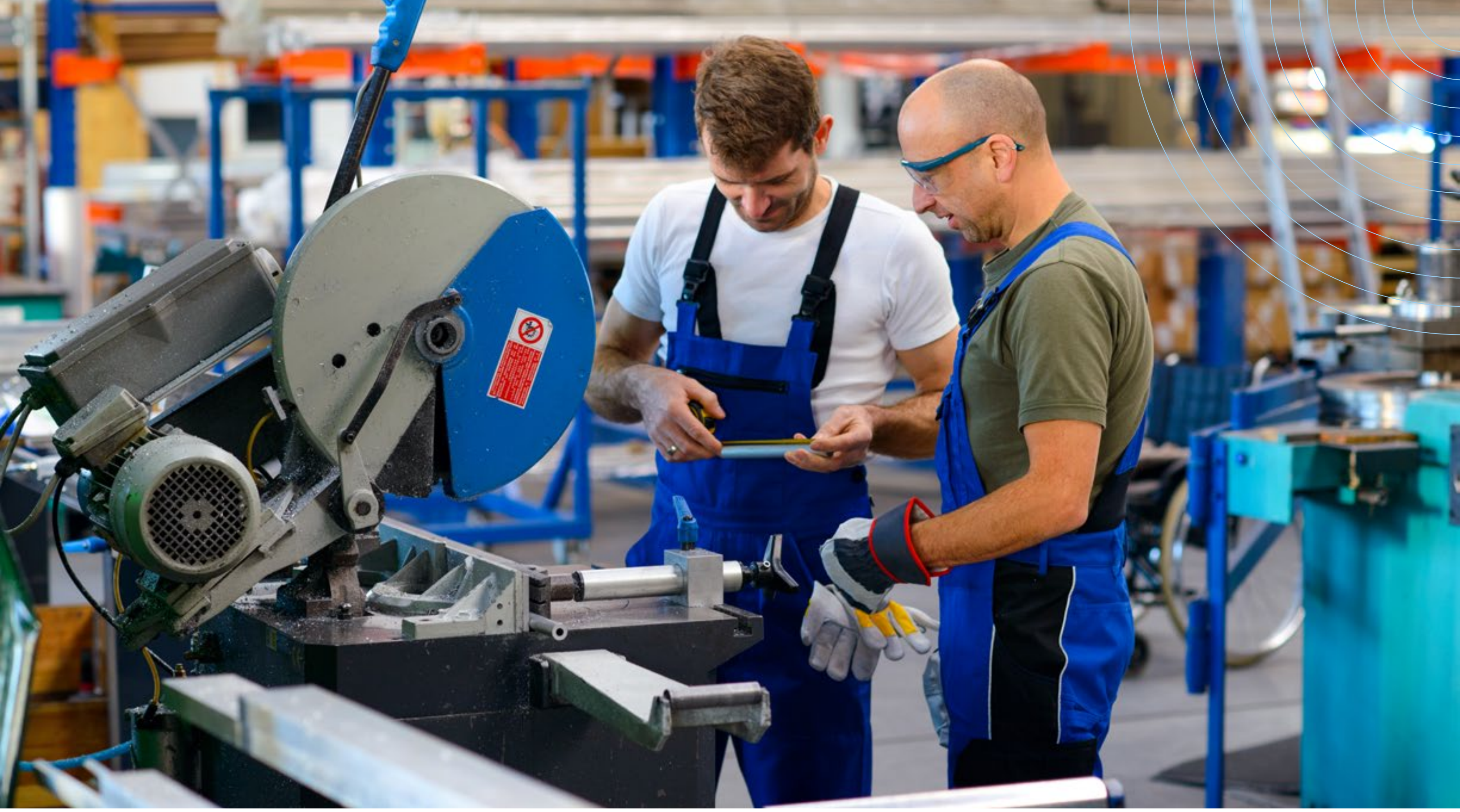
Days sales in inventory (DSI) measures the average number of days it takes you to sell through your inventory. It's also sometimes referred to as inventory days on hand, days inventory outstanding, or days sales of merchandise. The metric can also measure the demand for inventory, the speed of the cash conversion cycle, how effectively a business manages its stock, and a brand's cash flow.

To calculate the formula for days sales in inventory, you must first calculate your inventory turnover ratio. The two metrics are also inversely proportional; when days sales in inventory are low, inventory turnover is high. Alternatively, if days sales in inventory are high, inventory turnover will be low.

Days Sales in Inventory = Number of Days in the Period / Inventory Turnover

You can benchmark your days sales in inventory against others in your category, as well as your historical DSI to determine the correct financial ratio for your operations and your business.

KPI Need to Know:
Monitor inventory carefully and set alerts in your fulfillment platform to ensure you can maintain enough inventory to avoid stockouts while keeping DSI low.



3 Work-in-Process Inventory

Work-in-process inventory is a metric that measures how much inventory in sales is currently in the manufacturing process or unfinished. It's different from raw material in that this metric does not include any finished product, only products that have begun production.

Although the work-in-process inventory isn't on a shelf waiting to sell, the products in process get counted on your business's balance sheet for the given accounting period. Understanding this KPI helps to maintain an accurate tracking of cash flow. It is also essential to keep tabs on these numbers when calculating the inventory-to-sales ratio.

To calculate the work-in-process KPI, you first need to determine your beginning work inventory for the next period. You also need to assess manufacturing costs and the cost of manufactured goods (COGM). Once you've got those metrics, you can calculate the work-in-process inventory with the formula below.

KPI Need to Know:
As with most inventory management KPIs, ensuring an efficient inventory management process is critical to optimizing the work-in-process inventory metric. One of the best ways to do that is to use fulfillment software that integrates all your vendors and sales channels, adding a layer of visibility across all inventory, at every stage.

4 Inventory-to-Sales Ratio

The inventory-to-sales ratio compares the average inventory value to the average sales value. This KPI helps you to strike the correct balance between maintaining enough inventory to prevent stockouts without holding on to too much excess product and, therefore, paying more money to store it. Determining how quickly your brand liquidates stock and how much capital you have invested in inventory is especially critical in the midst of dynamic macroeconomic factors, increasing order volumes, and supply chain disruptions.

You must determine the inventory-to-sales ratio that works for your unique business. Try to strike a balance that can meet consumer demand rather than simply striving for the lowest ratio possible. It's best to track this KPI over a long period to gain insights, optimize stock levels, adjust sales models, and achieve sales growth.

Calculating your inventory-to-sales ratio requires figures that generally be found within an income statement, balance sheet, or similar. The formula for calculating the inventory-to-sales ratio includes both a sales metric and an inventory metric, so if either of those changes—in small or large ways—the inventory-to-sales ratio will also change. The cost of goods sold will also influence the inventory-to-sales ratio because as these change, so will net sales.

The first part of calculating the inventory-to-sales ratio is calculating the average stock value. Brands must add their beginning and ending inventory values together, then divide that sum by 2.

Average Stock Value = (Beginning Inventory + Ending Inventory) / 2

The second step is to calculate net sales. Brands should compute their gross sales valuation (total sales before discounts and returns) and subtract the value of all returned sales from it.

Net Sales = Gross Sales – Sales Returns

Calculate the inventory-to-sales ratio by dividing a brand's average inventory value for a certain period by the net sales from that same period.

Inventory to Sales Ratio = Average Stock Value / Net Sales Value

KPI Need to Know:

A solid inventory management strategy and the technology to back it are critical to maintaining the correct inventory-to-sales ratio. Find a platform – or work with a partner – that allows you real-time access to the data that influences your inventory-to-sales ratio.

Fulfillment Partner KPI Checklist

Here are the key questions to ask yourself and your fulfillment provider when it comes to helping you track and meet or exceed your supply chain KPIs: that integrates all your vendors and sales channels, adding a layer of visibility across all inventory, at every stage.

- [ ] Are you making the most of the metrics at your disposal?
- [ ] Have you identified the correct KPIs to measure for your business?
- [ ] How does your partner track these KPIs?
- [ ] Is your partner reporting on these KPIs frequently enough, and over the proper length of time?
- [ ] What information does your partner share with you, when, and how?
- [ ] Do you review KPI metrics with your partner on a consistent basis?
- [ ] Do you have enough ongoing visibility into your KPIs through your partner? In other words, could you do a spot check of your KPIs on any given day?
- [ ] Do you have the ability to identify both single instances and trends of non-compliance?
- [ ] Can your partner speak to instances on KPI non-compliance?
- [ ] What corrective measures does your partner have in place to improve KPIs that might lag?
- [ ] What is your partner doing to optimize your KPIs on an ongoing basis?
- [ ] Can your partner adjust strategy in the near and longer-term based on fluctuating business and market factors?

More KPIs to Consider

While we've aimed to cover the most critical supply chain KPIs in this guide, there's a whole host of metrics you can track, depending on your specific business and its challenges and goals. Find more suggestions here, and click through for additional detail.

Inbound Logistics KPIs

Learn More ›

- Transportation Cost
- Freight Bill Accuracy
- Loading and Unloading Times
- Receiving Time and Cost
- Lead Times
- Overhead Cost

Outbound Logistics KPIs

Learn More ›

- Order Fill Rate
- Order Accuracy Rate
- Inventory Turnover
- Pack Time
- Shipment Time
- Delivery Time
- Return Rate
- Customer Order Cycle Time

Inventory Management KPIs

Learn More ›

- Days/Weeks on Hand
- Stock to Sales Ratio
- Sell-Through Rate
- Backorder Rate
- Inventory Turnover Rate
- Accuracy of Forecast Demand
- Cost of Receiving Per Line
- Receiving Cycle Time
- Put Away Time
- Time to Receive
- On-Time Orders
- Inventory Shrinkage
- Inventory Carrying Cost
- Customer Satisfaction Score
- Service Level

Conclusion

You could be tracking countless KPIs and myriad ways to measure success. The key is to find the right metrics for your specific business and measure them correctly, consistently, and continuously. This requires a fulfillment partner with the technology, expertise, and customer service chops to provide complete end-to-end execution, visibility, and support for your omnichannel e-commerce operations.

Flowspace leads the supply chain software, service, and SLA adherence industry. We aim to empower brands of all sizes, from DTC startups to full-scale e-commerce companies, to grow their businesses and meet their customers' post-purchase expectations. We do this through an e-commerce command center that centralizes their Order Management, Inventory Planning, and Network Optimization—and all the related KPIs—into one place so goods get to customers correctly and on time while lowering costs for brands.

Whether you're optimizing your operations or looking to outsource fulfillment to a partner, Flowspace can help power your business.

Get in Touch Today

About Flowspace

Flowspace powers independent fulfillment. Its OmniFlow software provides brands with the real-time visibility and insights needed to orchestrate and optimize fulfillment across multiple locations.

Centralizing omnichannel visibility and reporting in a single dashboard, Flowspace empowers brands operating any configuration of locations with the data needed to manage fulfillment from anywhere. Its flexible, distributed network of +150 fulfillment locations enable merchants to expand or enhance existing networks, while ensuring best-in-class fulfillment execution.