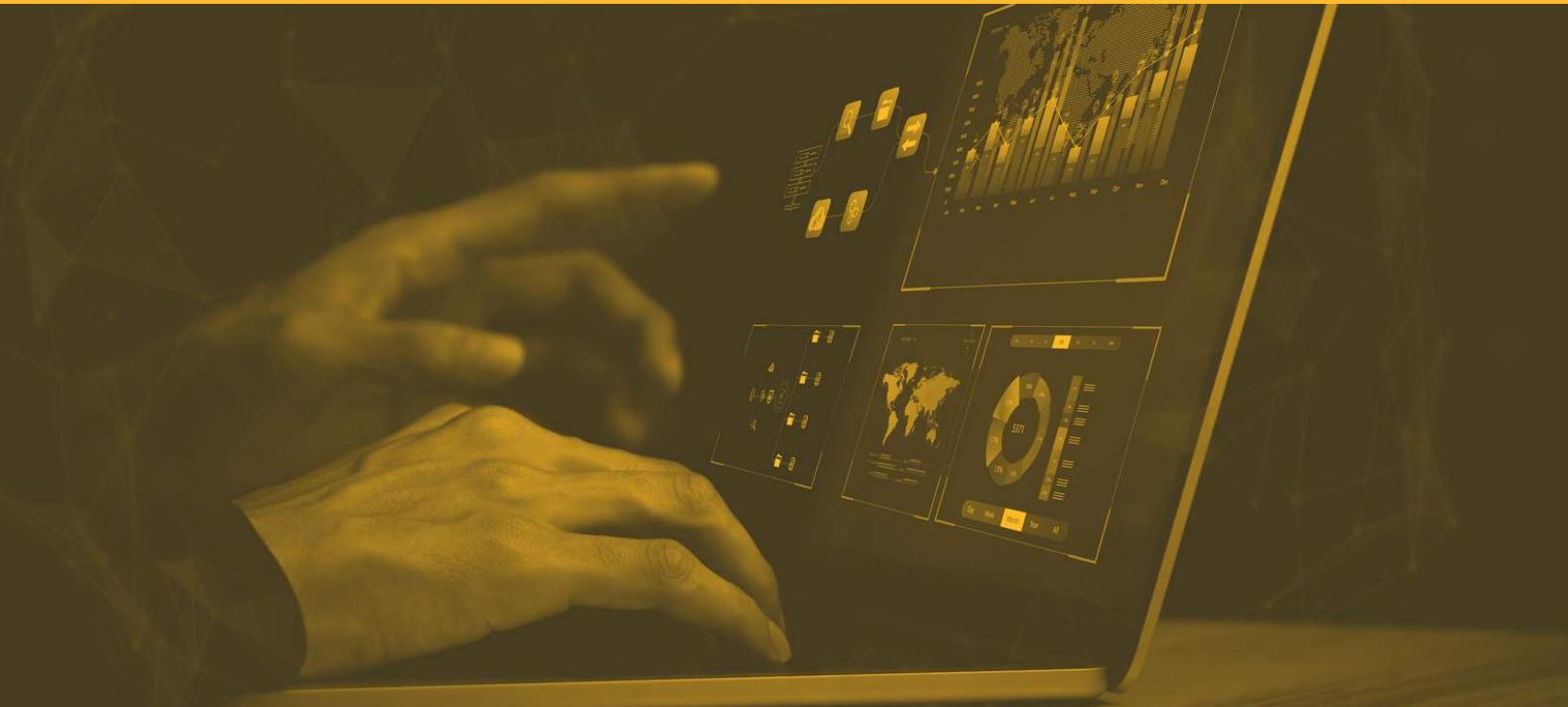




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# MEASURING SUPPLY CHAIN SUCCESS

Why gamble on visibility?



This guide exposes **critical data points** to identify new areas of growth or concern.

# KEY PERFORMANCE INDICATORS

Supply chain success doesn't have to be complicated when you know what details to monitor. To help, Blue Ridge compiled a list of the key supply chain signals that make all the difference when it comes to understanding the health of your business.

With these metrics, you can identify where you're growing and what areas need fixing, so you don't have to gamble for a profitable future.

## FORECAST ACCURACY

A precise, scientific measurement of how close forecasts are to actual demand.

## FORECAST VALUE ADD

Assesses the improvement of forecast quality and its drivers quality over time.

## SERVICE LEVELS

Percentage of customer orders fulfilled on time and in full.

## OVERSTOCK

Excess inventory beyond demand requirements.

## COGS PER PLANNER

Measures scalability of your planning process and tools.

## INVENTORY TURNS

Frequency of inventory being sold to inform better purchasing decisions.

## DAYS OF SUPPLY

Average number of days inventory will last, indicating business gains or losses.

# FORECAST ACCURACY

Forecasting entails examining past demand, lost sales, campaigns and promotions, seasonality, trends, point-of-sale and other external variables to make pertinent decisions on inventory, planning, budgeting, and more. It is a precise science, and the highest level of accuracy is essential. Unfortunately, many organizations test their luck by utilizing outdated methods or relying on formulas in a spreadsheet to make projections. Gut instinct and best guesses also aren't sufficient to ensure forecast accuracy, which is a key indicator in demand planning and one of the most valuable metrics in evaluating your organization's success – hence why it's first on our list.

There are several variations of Forecast Accuracy calculation such as MSE, MAD, MAPE, SMAPE and MASE. Also important are the lag rates and the hierarchical levels at which the variations are computed. Without intelligent forecasting, organizations often end up with warehouses “busting at the seams” with product SKUs they don’t need, and not enough of the product SKUs that they do need. To get a complete picture of each metric that impacts forecast accuracy – and thus see where and how to improve – we must also incorporate our next featured signal, Forecast Value Add.





# FORECAST VALUE ADD

Forecast Value Add (FVA) is a metric used to evaluate the effectiveness of the collaborative forecasting process. FVA analysis helps reduce forecast error and variability by determining which touch points of the forecasting process are helpful in increasing accuracy and which are not. To achieve higher forecast accuracy, organizations must consider different hypothetical scenarios and evaluate several inputs. FVA increases visibility into each said input, which helps determine the proper forecasting models to use and which targets to set to achieve maximum process efficiency. When examined correctly and consistently, FVA provides signals and cues that lower the stakes, making success more attainable.

## SERVICE LEVELS

Service level is a concept that isn't difficult to define, though it is often misunderstood. Simply put, it's a metric measuring a particular service to establish and evaluate service quality. When service quality is unsatisfactory, it must be addressed to avoid negative implications to the bottom line. Standard service level metrics in the supply chain industry include the following:

- **Fill rate:** The percentage of order demand that can be met immediately from stock on hand
- **Ready rate:** The amount of time a business maintains a positive stock balance
- **Shortage cost:** The cost incurred of each stockout

The importance of knowing your service levels has much to do with inventory management. Satisfactory service levels indicate that your business's inventory and procurement processes are working well. On the other hand, if targets are being missed, pinpointing service level gaps can positively influence inventory decisions, such as determining the proper amount of safety stock.

# OVERSTOCK

Safety stock is any excess buffer inventory kept on hand to prevent a stockout, but without a solution to gauge just how safe your business needs to play it (and the appropriate quantities to purchase), it can become a problem. Accurate safety stock levels must consider most accurate lead time, lead time variability, standard deviation of demand and desired service levels for each SKU-Location. When not done correctly over time, **too much safety stock** morphs into a costly scenario: **overstock**.



Overstocking occurs when a business orders more inventory than it can sell, which is detrimental for various reasons. To start, merchandise not being sold takes up valuable storage space and increases storage expense. Secondly, unsold inventory provides less working capital. Lastly, to sell excess inventory, a business often must set sale prices that can diminish profit.

If your business constantly has overstock, it might be a signal of improper inventory management, incorrect seasonal demand forecasting, or other supply chain issues that have been overcorrected. Inventory visibility across your entire supply chain network is one effective way to limit stockouts and eliminate overstocking – a true win-win situation.

# COGS PER PLANNER

Before we cover the final signals on our list, let's take a moment to discuss **Cost of Goods Sold (COGS)**. COGS is an inventory metric that measures the direct cost of producing your business's products. A key word to note in its definition is the term direct cost. Direct costs include:

- Inventory purchased for resale
- Raw materials to assemble products or packaging
- Labor and warehouse transportation costs
- Taxes (including tariffs or duties) that add to the expense of purchasing products

Indirect costs include operational expenses such as warehouse storage fees, marketing, overhead fees, and shipping fees. Monitoring COGS regularly can help optimize operations and increase revenue, and because COGS is used to calculate several supply chain KPIs, it's a supply chain signal that can't be ignored.

$$\text{COGS} = \frac{(\text{BEGINNING INVENTORY IN \$} + \text{PURCHASES IN \$}) - \text{ENDING INVENTORY IN \$}}{}$$

COGS per Planner is a metric that determines the usability and scalability of a planning solution. As companies expand to add more SKU locations, they shouldn't have to add Planners linearly. Intelligent demand forecasting and planning enables sales to increase while planner expense stays flat, resulting in a more efficient COGS per planner outcome.

## INVENTORY TURNS & TURNOVER

Turnover isn't always a sign of losing. In fact, in the realm of inventory, it might be just the opposite! Inventory turnover is the rate that inventory is sold and replenished over a certain amount of time, generally one year. A total inventory turnover indicates that all purchased stock was sold; in essence, one inventory turn was completed.

Inventory turns can be fast, slow, or somewhere in between, and the implications of each scenario vary. A swift turn may pinpoint an increase in a product's demand or a delay somewhere in the supply chain, while a slow turn may indicate decreased demand for a product. By examining the turn rate and calculating the turnover ratio, you can make better decisions on pricing, manufacturing, purchasing, and more.



$$\text{INVENTORY TURNOVER} = \frac{\text{COST OF GOODS SOLD}}{\text{AVERAGE INVENTORY} (\text{BEGINNING INVENTORY} + \text{ENDING INVENTORY}) / 2}$$

Successful companies experience multiple inventory turns per year, though it varies by industry and product category. And don't forget this: to obtain an accurate inventory turnover ratio, you must also have good insight into your inventory on hand.



# DAYS OF SUPPLY

**Days of Supply (DOS)** is also referred to as **Days on Hand (DOH)** and **Days Inventory Outstanding (DIO)**. It is a KPI that measures how long it takes a business to sell its inventory, and it is also a measure of inventory liquidity. DOS is calculated with the following formula:

$$\text{DAYS OF SUPPLY} = \frac{\text{AVERAGE INVENTORY FOR THE YEAR}}{\text{COST OF GOODS SOLD} \times 365}$$

When your supply chain is running efficiently, your inventory management is precise, and your forecasting is effective, a low DOS value is one of the prizes obtained. Adversely, a high DOS value is a sign of poor demand forecasting and underutilized inventory. If your DOS is not where you'd like it to be, finding a solution that can help you plan more effectively (and in turn, drive it lower) will offer major benefits, including:

- Decreasing inventory carry costs, such as storage and transport fees
- Freeing up more capital



# KEY TAKEAWAYS

When the goal is supply chain resilience, clarity is the name of the game. Greater visibility into your business's inventory, operational, and financial health can mean the difference between a coin-toss decision and a concise course of action.

Data science and automation can be used to improve the demand forecasting and planning process, resulting in an increase in sales, reduction of operational headaches, and reduction of business risk.

The key measurements for supply chain planning success we've covered draw attention to the metrics that can help you achieve the favorable outcomes your business deserves – with no luck needed.



## CONNECT WITH US!

We'll show you how to expose and effortlessly monitor the data points covered in this guide.



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BE SUPPLY CHAIN  
INVINCIBLE

Blue Ridge provides supply chain software that improves planning precision with an unmatched partnership so you can eliminate guesswork and maximize inventory performance. We empower distributors, manufacturers, and retailers with predictive insights and precise buying recommendations based on comprehensive details. Our unmatched LifeLine team of industry experts enables you to accelerate software adoption and efficiencies while simplifying buying complexity. We'll stand by you so that you can **be supply chain invincible**.  
For more information, visit [www.blueridgeglobal.com](http://www.blueridgeglobal.com).