

Supply Chain Metrics and Measurements

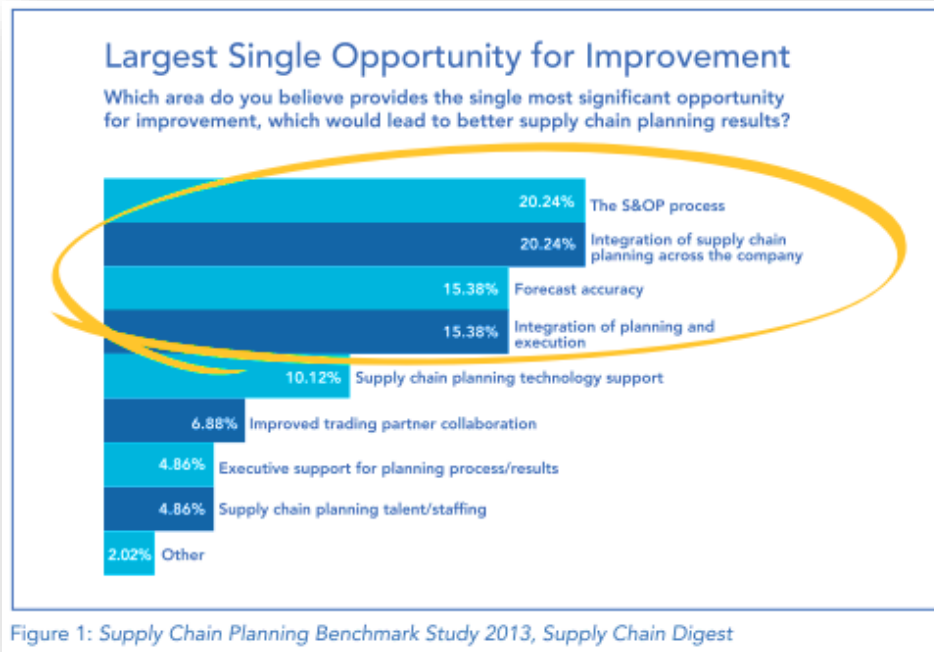
“We must improve our supply chain to ensure success.”

Sound familiar? It should; according to a recent Supply Chain Digest benchmark study, surveyed business leaders identified two areas as the greatest opportunity for improvement:

- 1) The Sales & Operations Planning (S&OP) process
- 2) Integration of supply chain planning across the company

The survey results make perfect sense: the supply chain is how the company delivers its goods to its customers. Its construction determines how effectively you can operate. Executives usually realize that company-wide coordination around an effective plan and process is central to driving higher levels of performance, but how can you tell if your efforts and investments are achieving results?

The answer lies in understanding the metrics of supply chain performance – *and using them.*



There is seldom a “Supply Chain Department” that truly reflects what supply chains are and what supply chains do. Supply chain management is a cross functional *discipline* that touches almost every function within the business including: Sales, Marketing, Planning, Production, Procurement, Distribution, Warehousing, and Finance. Furthermore, your supply chain extends beyond your company to connect suppliers, and customers. The cross-functional and inter-company nature of supply chains provide a challenge that typical metrics are not equipped to handle; as traditional metrics and dashboards tend to focus on individual departments or companies. They are not designed to measure end to end performance across organizations.

Measuring supply chain performance must squarely address the *three things* that the supply chain does for your company:

- Deliver your products to customers *when needed*
- Deliver at the *lowest possible cost*
- Deliver while *managing risks* within the supply chain

The top-level metrics of supply chain performance must speak to all of these objectives to provide the



holistic perspective your organization needs to take an enterprise approach as opposed to driving departmental improvements. Therefore, what measures provide reliable indicators?

Serve Customer Demand

There are many metrics that address efforts to be demand-driven. Examples include:

- On-Time Delivery to Request Date
- On-Time Delivery to Commit Date
- Fill Rate
- Stock Outs

Deciding which metrics to use and how to use them is a function of strategy. For example, should a customer be able to call or visit your location and buy product right away? If so, Stock Outs would be a great measure to use. If not, what is your desired lead time strategy? It could be customer specific. There may be some customers that you would like to fill on demand, whereas others would need to place their orders two weeks in advance. In that situation, it would not be right to measure every customer to their request date. The metrics that you choose need to align with your overall customer fulfillment strategy, and should reflect understanding of how your customers perceive your performance.

Reduce Supply Chain Operational Cost

A key focus of effective supply chain management is to minimize “cost-to-serve.” A simple way to measure cost is to break down the various costs of fulfilling a customer demand and looking at them as a percentage of revenue in comparison to industry benchmarks.

Examples include:

- Production Costs
- Material Costs
- Transportation Costs
- Cost of Goods Sold

Improvement can be measured by reducing the percentage of revenue of each cost component. This method works well if your company has large outlier costs such as high material cost, or high cost of transportation. However, if that is not the case, this method could make it difficult to pinpoint improvement activities.

There is one constant among all companies, including yours: working capital is expensive. A major component of this is in inventory carrying costs. Carrying costs are minimized when your supply chain builds the right product at the right time. Contributing processes that directly impact carrying costs therefore include demand forecasting, production planning, inventory planning, and procurement planning. The key questions you would typically ask include:

- Did I properly predict what my customers were going to order in time to do something about it?
- Did I do the right things with my forecasting information (i.e. did I line up necessary material and capacity to fill my forecast)?

The first question leads us to a great metric:

- Forecast accuracy – There are a few ways to effectively measure forecast accuracy, but the most important decision is what to use as the “lag.” In other words, how far out are you measuring accuracy? If your planning function was 95% accurate forecasting one month in advance, that’s great—unless it takes you two months to order materials and build the product.

The other question is important: What did I do with the forecast information? In order to measure these activities, we look at the following metrics:

- Production plan accuracy – How good was my production plan? Did it meet my forecast? Did it meet what was actually ordered?
- Production plan compliance – Regardless of how good my plan was, did I follow it? Compare what was produced vs. what was planned to produce.

Manage Supply Chain Risk

A key focus of managing supply chain risks is your organization’s ability to repeat good performance. The biggest tool used to manage supply chain risk is safety stock or buffer stock.

What is safety stock? The obvious answer is that it is additional supply, on top of demand that is used to hedge against supply chain risk. The real answer is that it is working capital. These are real dollars, and every company needs to manage safety stock the same way they would manage any cash investment. When looking at working capital, there are two key questions to ask: Where? And how much?

“Where?” refers to what products are consuming your working capital dollars. Typically these products should have the following characteristics:

- Demand volatility – very difficult to predict
- Low forecast accuracy – we do a very poor job of forecasting this product (goes hand in hand with volatility)

- Importance to my product/customer portfolio – It should either be some type of strategic product, or be ordered by a strategic customer that you would be very scared to anger or disappoint.

The third point is the most subjective. Most companies do not want to anger or disappoint any of their customers. However, it is important to look at the need to hold safety stock as a drag on margins. There are certain customers to do this for, and others where it is just not worth it. A great metric to use in order to manage supply chain risk follows:

- Demand Variability vs. Contribution Margin – This metric allows you identify to which products are the most difficult to forecast, and how much those products are contributing to your bottom line.

Use Supply Chain Metrics

It's easy (and common) for investments in supply chain measurement to be wasted, letting the metrics exist in a vacuum with neither process nor action built around them. Just as important as defining metrics, therefore, is creating a venue for reviewing, interpreting, and acting upon the signals metrics provide. The venue for reviewing supply chain metrics must be cross-functional and holistically incorporate the entire enterprise. For most companies, the right place to do this is within Sales & Operations Planning (S&OP) itself.

S&OP is where departmental perspectives give way to the enterprise view. S&OP is action- and decision-driven and should operate according to the yardsticks of your supply chain metrics. A common misconception is that the S&OP process is represented by the “S&OP Meeting”, but in fact the essential process activities revolve around preparing for it and executing post-meeting actions.

Truly impactful S&OP processes are driven by a concise set of well-defined metrics. Process activities are focused on analyzing metric results and developing initiatives to improve performance. Dashboards and meetings are used as decision making tools, once again, driven by metrics and performance improvement.

If You Don't Measure, You're Flying Blind

Measurements are the key to improving any function. The supply chain is no exception to this rule. However, two questions always arise:

- What do I measure?
- What do I do with the information?

The first question cannot be answered by a single person, department or function. It requires someone with a bird's eye view of the entire supply chain, and the experience necessary to know what to look for.

The second question can be even more complex. It takes a blend of the bird's eye view and people familiar with individual functions within the organization to know which “levers” to pull in order to achieve desired results.

Your organization has plenty of people that know the details for your organization and their individual functions. However, the chances that you have an effective person with a bird's eye view of the supply chain are extremely slim. Even if your organization has such a person, their bird's eye view has been jaded by years of working within a single organization. Your organization will need to bring in experienced help to provide an unbiased, bird's eye view of the supply chain. This resource works with various functions in your organization in order to answer the two questions listed above. The good news is that when those two questions are answered correctly, your organization will have something extremely valuable:

“An actionable improvement strategy that will drive your organization for the next 3-5 years”.


If those two questions are not answered properly, or not even addressed, then there is no telling if the actions being taken within your supply chain are beneficial or detrimental to the overall objectives of your business.

We hope you found this information to be helpful. To access more Spinnaker thought leadership [click here](#), or to learn more about our services [click here](#).

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