

# Demystifying Supply Chain Planning

Developing and publishing plans for an organization’s supply chain to execute against is often a fractured and siloed process. Leaders are often challenged with producing plans despite lacking what optimal data to use, a clear process to follow and what role they do or should play collaboratively across the entire Supply Chain. Furthermore, the mixed results of these plans cut in both directions from keeping frontline managers reactive in how they execute to taxing executives with questions like, “Why are these plans so inaccurate? Are we missing something? Is this even worth all the effort it’s taking us?” There are often several factors that contribute to the accuracy of supply chain plans, which is why following a structured approach is imperative to execute these plans successfully. This document outlines a framework that your organization can not only control, but expand your planning practice into consistent, actionable insights your supply chain can execute against.

## What is Supply Chain Planning?

The Supply Chain Planning structure is represented by four collaborative planning activities: Network Planning, Supply & Demand Planning, Sales & Operations Planning (S&OP) and Sales & Operations Execution (S&OE). As your organization executes against these plans, data is generated that can be further modelled and measured as KPI’s; this data will serve as inputs back into the planning process when replicated, creating a consistent and scalable mechanism to plan in the future. Supply Chain Planning implemented in this fashion creates the best chance for balancing supply levels with demand signals and delivering value consistently to your customers.



# Network Planning



The Network Plan is the highest level and most strategic within the Supply Chain and serves as the basis for all other subsequent plans. It establishes the warehouse and transportation design to support your organization's vendors and customers. Inputs to this Plan often come from historical execution data providing insights on costs and service levels impacting the Network. Another data source can come from the executive level regarding broader company goals, portfolio planning and/or any pre-S&OP designs. A common pitfall to avoid in defining a Network Plan is not establishing the right depth of detail in your capabilities to plan against. It's important to document the right amount of detail to allow for this plan to be consumable for subsequent efforts. Conversely, the result should still be at a higher strategic level, so balance is key. Trying to define a Network Plan transactional creates significant risk to downstream efforts. **Here's some questions to consider when going through this process:**

1. What regions or markets are you serving?
2. How many nodes will you have and what capacity levels can they support?
3. What transportation modes or services are required?
4. What can your warehouses or facilities do to support your customers? Can they all do the same things or are capabilities distributed?
5. Do you need any redundancy in capabilities or processes? What happens if something is unavailable or fails?

Creation and review of the Network Plan is typically an annual to bi-annual exercise depending on your business. The output of this planning process is a multi-year roadmap document that is evaluated and enhanced based on your preferred frequency. The Plan will outline what regions or markets the supply chain will support via facilities, what services they'll support and how freight will move between vendors, nodes and customers.

# Supply & Demand Planning

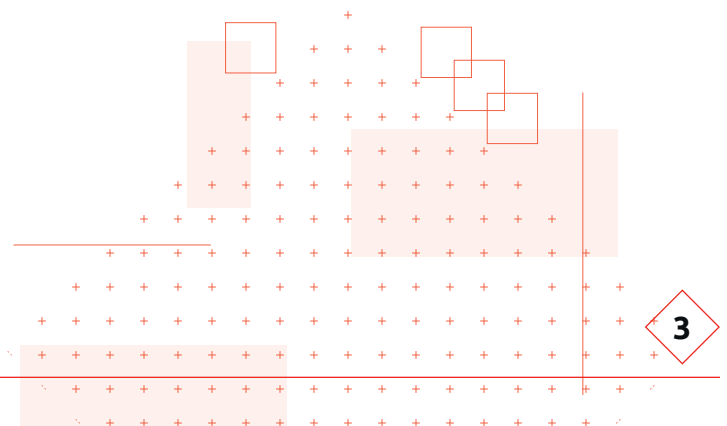


With the Network Plan in hand, Teams can now proceed to defining the next two required plans to execute against: Supply & Demand Planning. The Supply & Demand Planning exercise will be comprised of a Demand Forecast plan and a Supply Plan. While these are two distinct planning activities, they will need to closely complement each other to be effective. Defining these plans collaboratively is the best practice that Forerunners often see.

## DEMAND FORECASTING

Demand Forecasting is likely the most recognizable planning tool within this document used by organizations today. That being said, Demand Forecasting is also hindered in many organizations by an “always wrong” stigma and being trapped within a sales and finance bias. Simply put, Demand Forecasting should seek to define the demand for what you sell in a specific place and time. Before you step into this effort, you’ll want to consider two points: 1) What is the right level of forecast (SKU/Time/Location) to support your business, and 2) Do you have the right amount of data to support your forecast? Once you’ve established these, data (as indicated by point 2) can come from a variety of internal and external sources. Internal sources are commonly your transactional systems for financial, procurement, sales, transportation and fulfillment data. External systems market data, industry insights and any consumable customer behavior should also be considered. Here are a few forecasting axioms to help support your development effort:

- + Try to avoid fixating on an exact point or value within the Forecast. Demand as a market force is always moving. Instead, utilize a range to express demand to reduce risk and provide directional accuracy. Support this with a set of forecast metrics to track errors over time and make corrections.
- + If you aggregate your forecasts by common variables, you can reduce your overall risk. Forecast aggregation is commonly by SKU or Item, time and location in that order.
- + Minimize bias from subjective data sources by focusing on accuracy with objective data sources. While not always avoidable, subjective data from judgment based or experimental approaches (surveys, focus groups, etc.) can increase your forecast risk through miss-direction and/or disaggregation. Objective sources from your transactional systems will emphasis quantifiable results from causal, relational, and time series data.



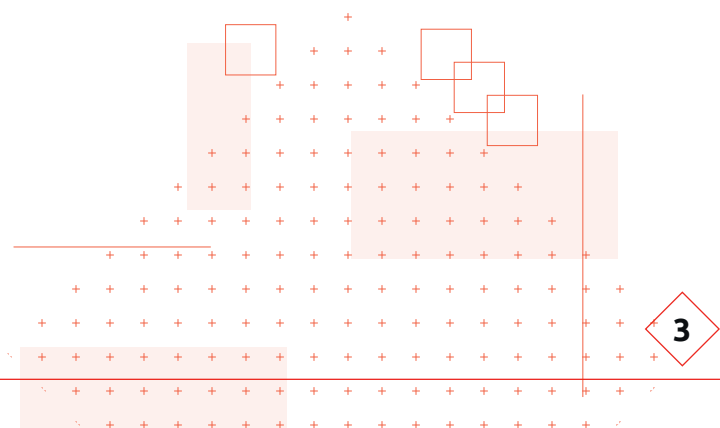


## SUPPLY PLANNING

As we develop an understanding of what our demand will look like through our forecasting, we will need to also plan and prepare for what we will need to act on this demand when it materializes. Supply Planning brings in the viewpoint of supply and inventory to understand what our Supply Chain has and/or will need to fulfill demand. The two views to consider for this plan are inventory and capacity. Inventory is observed here as what your customer consumes. An important pitfall to avoid is it's not always what you will sell to your customer (Example: cups and lids from a coffee shop or packaging from a CPG manufacturer). Work closely with the forecasters to ensure you have the right viewpoint of demand to plan all your inventory against. Capacity is how you will fulfill that demand. Per your Network Plan, can your facilities process the amount of inventory expected? Do you have enough trucks to deliver when needed? Do you have enough warehouse labor or drivers ready to act?

In addition to establishing what your inventory and capability needs will need to be to meet demand, supply planning should also establish how safety or buffer stock you should maintain. Safety stock is simply the extra inventory you should maintain to support any unforeseen changes in your demand. While you build your demand forecasts, and over/under risk value should be calculated along with your supply forecasts. Using that risk value, you can calculate how much safety stock to have in the event of changes. There are several ways to calculate safety stock statistically that you can use to align with your business using either maximum and average values of either usage or inventory turn and sales.

The optimal frequency for producing both forecasting and planning should stick to the quarterly to monthly range depending on your business. While there are synergies between these two efforts, the output should still be to produce two defined plans. The Demand Forecast should indicate expected sales by SKU/item by market/region (aligned with Network Plan) for the designated timeframe. Supply Planning should offer insights into your current inventory position (what you have on-hand and what is inbound) and what you'll need to fill any gaps in demand. Inventory is typically the focus of these demands with capacity as an included factor for any gaps in fulfillment.





## ■ Sales & Operations Planning (S&OP)

Sales & Operations Planning, typically referred to as S&OP, is the culmination of all the previous plans that manifests into a near-term (monthly to weekly), actionable plan. This plan outlines what sales demand is going to be and how the entire supply chain is going to execute against those predictions. An important callout to this planning effort is engagement. Previous plans (Network and Demand Plans) have largely existed at higher strategic levels within the organization. S&OP is the strike point where heavy involvement starts with individual supply chain partners like Transportation, Operations, and Procurement/Merchandising, etc....) Your organization should collaborate with these partners on both the larger corporate S&OP and localized plans.

The goal should be to produce and review your S&OP, as stated above, on a monthly to weekly timeline. The documented plan should emphasize the target demand by channel, usually at a week-by-week interval, and the required supply chain targets needed to fulfill the demand.

## ■ Sales & Operations Execution (S&OE)

Sales & Operations Execution or S&OE is the localized, tactical activity to S&OP where the developed plans are further refined to short-term goals and objectives. These plans are not only timebound with a shorter horizon, but also individualized to focus on one supply chain partner at a time. For instance, Operations would have a specific S&OE that would ladder to the near-term S&OP and would define planned targets for receiving inventory, value added services, order picking and sortation, etc.... While serving its intended purpose, defining your S&OE also allow for a gateway into further Network and localized planning such as staffing / labor projections, freight capacity, and engineering capability unlocks (Example: automation, process enhancements, improve system capabilities, etc....).

The frequency your organization revisits this effort should live within whatever your timeline expectations are for defining and reviewing your S&OP. Generally, you should be looking at your S&OE weekly to daily with leaders and managers.

### *HOW KPI'S PERPETUATE YOUR SUPPLY CHAIN PLANNING*

When supply chain organizations execute against their plans, it is critical to have a core set of Key Performance Indicators (KPI's) to capture and measure against those plans it is important not only for the health and engagement of day-to-day activities, but as a feedback loop for the planning process on what may have been missed previously, or what opportunities lie ahead. **On the next page are some example KPI's seen in successful supply chains across multiple industries.**



- + **Total Supply Chain Costs:** This is an amalgamation of freight, logistics, and operations costs typically at an item or SKU level. This KPI could be visualized as-is or as an adjusted figure to try to remove some of the noise caused by uncontrollable or unforecastable factors.
- + **Impact To Gross Profit:** This KPI assesses how the supply chain is performing against EBITA and top line revenue.
- + **Customer Service Performance:** This metric is usually captured as several smaller KPI's such as Click to Ship, Perfect Order, and On-Time-In-Full (OTIF).
- + **Inventory Performance:** Like Customer Service Performance, measuring the effectiveness of inventory can come from sources such as Dock to Stock, Inventory Turn and Inventory Aging.

## *HOW TO GET THE MOST OUT OF YOUR SUPPLY CHAIN PLANNING*

Most organizations have some form of planning process in use today but are either at too high a level to be actionable or too siloed to be cross-functionally effective. Here are some considerations when deciding whether to implement an overhaul of your planning processes, or enhance what's currently being utilized:

- + Scrutinize your master data sources, especially your item data. Having a strong Master Data Management (MDM) and Product Information Management (PIM) practice can often prove the linchpin to both greater plan accuracy and faster engagement.
- + Your integration strategy and approach to how you communicate data back and forth should be front and center in how you plan. Regardless of how you will build your plans, time spent moving or cleaning data is time wasted and unnecessary costs added into your planning before any valuable decisions can be rendered.
- + Speaking of execution systems (ERP, TMS, WMS, OMS, etc...), if your organization is capable, consider a visibility or strategic planning tool to sit on top of your execution systems to support the planning process. While a supply chain planning application will not totally remove other systems or reporting / business intelligence tools, these apps can provide considerable value at both the Network and S&OP levels. Some examples of these apps are Anaplan, Kinaxis and Logility.



- + While the scope and focus of this document is rooted in Supply Chain Planning, there is another broader flavor of these same planning disciplines called Collaborate Planning, Forecasting and Replenishment or CPFR. CPFR scales these same planning approaches with greater integration into up-stream procurement and merchandising planning and downstream customer, store or e-commerce operations. Once you've achieved your optimal degree of value and clarity in Supply Chain Planning, evolving into CPFR would be a meaningful next step.
- + The frequencies presented above are general timeframes and are not meant to be adhered to strictly. Take into consideration your business and what markets you operate within to see what the optimal planning lead times need to be for maximum effectiveness
- + Consider, if you don't already have one, a Center of Excellence (COE) for your supply chain planning. Double or triple dipping into leaders and managers time away from operating the business to not only provide inputs into the planning processes but own the planning itself can create significant change management challenges. Furthermore, a planning COE can unlock business continuity opportunities and mitigate risk in knowledge transfer and data governance while your organization grows and changes over time.

## **About Forerunners**

Forerunners Consulting delivers specialized and focused consulting to solve today's most challenging supply chain and logistics operations. Our differentiated and targeted approach is what sets us apart. We deliver strategy, analysis, and implementation with an energy that inspires and builds momentum for our clients and trust in our ability to execute. We are made up of a team of strategic, experienced consultants that are skilled in delivering value and quick return on investment. The way we approach problems is a mindset, and we challenge our clients to think critically based on what we can help them achieve. To learn more about Forerunners, visit [www.forerunnersconsulting.com](http://www.forerunnersconsulting.com).