Distribution and Inventory Strategy Effectiveness

The goal of an inventory strategy is to minimize overall inventory costs such as transportation, distribution and inventory carrying, and to maximize revenue for a given service level. The ability to reach an optimal point of both revenue and inventory is dependent upon four basic—but dynamic and interdependent—elements: supply quantity, supply timing, demand quantity and demand timing.

To reach the goal of providing maximum revenue with minimum needed inventory, a review of each element's current value should be conducted to provide a basis for prioritization.

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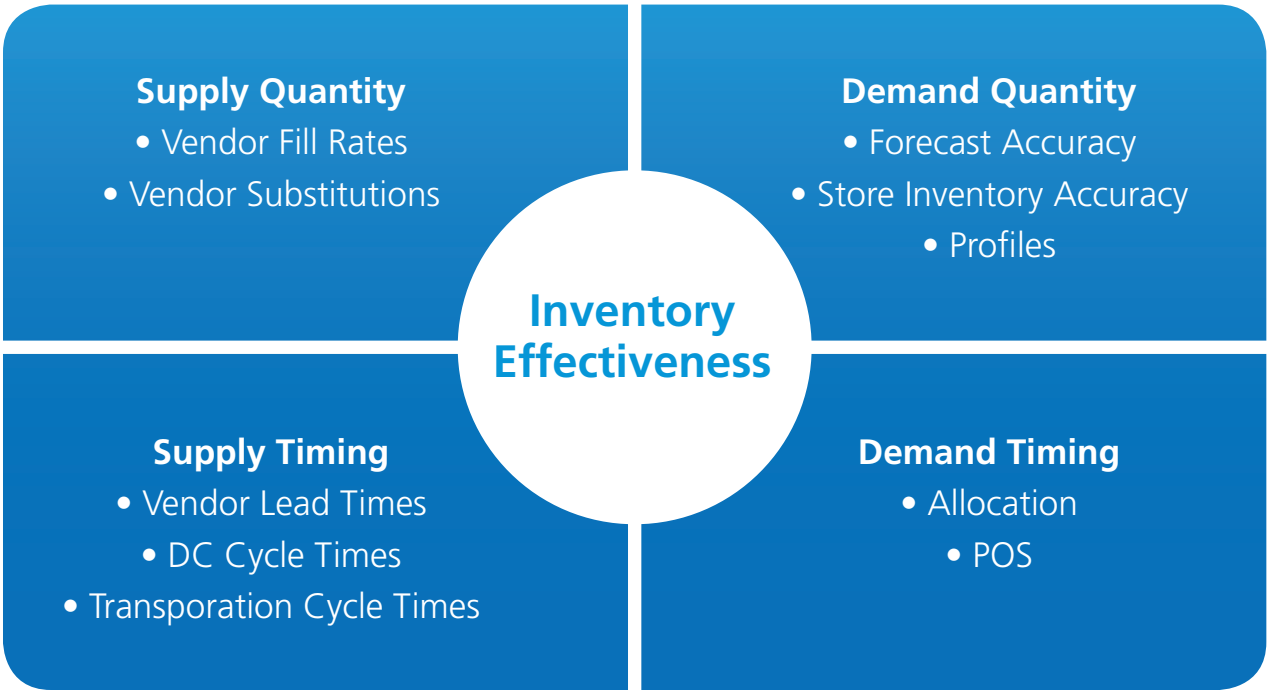
Listed in the graph below are four quadrants representing the drivers of inventory optimization. Within each of these quadrants are a number of key indicators that dictate the relative strengths or weaknesses in execution of the strategy. These indicators should be the basis for developing an initial concept for item level stocking priorities within a limited centralized distribution environment.



Supply Quantity

A large part of effectively coordinating inventory revolves around service level. By setting aggressive service level goals on the most important items (high volume, high margin, high visibility), the replenishment process can be refined to flow more safety stock to those items. Making certain that these key products are more consistently made available to the consumer improves overall company performance as well as consumer perception of performance. And although it is necessary to have a broad assortment of less important items (low volume, low margin, low visibility), they should have lower service level goals. If an "out" at a location is not a critical issue, it makes sense to carry less safety stock and use those funds for more important items.

Other questions to ask about supply quantity:

- Are poor and erratic vendor fill rates negatively impacting sales?
- Are there substitutions that can fill in when vendor availability is limited?
- Are there opportunities to capitalize on inventory reductions associated with aggregation and consolidation of inventory closer to the point of demand (reserve storage)?

Demand Quantity

Demand forecasting is perhaps the most critical, and most difficult, task necessary to inventory effectiveness. At a high level, it's important to forecast at the right cadence, at the right level of aggregation, and using the right methodology.

Here are some questions to ask about demand quantity:

- Is the demand inconsistent, in which case monthly or even quarterly forecasting would be better than weekly?
- Is there enough volume to forecast at the most granular level (sku by location) or is it better to move to a higher level (class by location, subclass by district, etc.) and allocate forecasts down?
- Is the demand highly erratic, necessitating a dynamic forecasting engine? Are there years of very stable history, better suited to a statistical approach?
- Are there identifiable yearly patterns which require seasonal profiles?

Supply Timing

There are a number of supply timing variables to consider, but they fall into two clear categories: internal and external. An example of an external variable is the lead time performance of the vendor. Even if the vendor routinely ships everything on the order, if the product is late (or early), then inventory isn't where it should be when it's needed. Evaluation of vendor average performance can lead to added (or reduced) safety stock where needed.

Internal variables are those managed directly by the company. Examples include:

- How often are products picked from DCs for store delivery?
- How often are trucks from a national DC shipped to a regional hub?
- How often are trucks running to stores?

Analysis can find the optimal cadence for each of these periodic actions, balancing the costs of carrying inventory (larger inventories for longer order cycles) against the costs of handling (more labor costs picking items often).

Demand Timing

Much like supply timing, demand timing can affect inventory drastically. Here are factors to consider:

- How often should purchase orders be placed to vendors for optimal inventory carrying?
- Are vendor minimums forcing too much inventory into the system? Can they be negotiated to be lower?
- For a variety of low volume vendors in close geographical proximity, could a combined truck save on inventory by allowing shared trucks, rather than full trucks with overstock?