



Lean on MEIO

Adexa, Inc.

Lean is all about having the right level of inventory to meet customer demand in a timely manner.

Adexa MEIO or Multi echelon Inventory Optimization, delivers all the components of lean and more.

- Value: Customer demand and service requirement is the basis for optimization
- Value Stream: the foundation of MEIO is based on a stream or chain of related inventory levels
- Flow: Allows all activities to be product centric
- Pull: The inventory model is assumed to be a pull inventory model
- Perfection: The level of optimization delivered is the best that one can achieve enabling the current and future states to be modeled and adjusted to the actual needs.
- Most importantly Minimizes cost for a given service level

To make the last point above clear, consider the following myth:

- ❖ “Inventory increases with service level” –Not True!
- ❖ “Cost goes up with service level” –Not True!
- ❖ “Cost goes up with higher inventory” – Not True!

The key is to have the right *mix* of inventory. Different products have different demand characteristics and “averages” don’t work for all. By increasing the hot selling products inventory and lowering those in lower demand, or by looking at the cycle times of fast moving products vs long ones, inventory can be placed in strategic locations so that enough time is available to deliver the product at the right time. By simply moving the appropriate amount of inventory from FG stage to the stage before, there is potential savings of 10-25%. Much more can be accomplished if other possibilities are considered in earlier stages.

It is mind bugling that so many companies decide on their inventory levels using spread-sheets and simply depend on a few individuals’ past experience to decide on such an expensive and crucial operational issue. MEIO uses very advanced optimization techniques and stochastic probability functions in order to determine the optimal balance between cost and delivery performance. As you know, there are many uncertainties in demand, in supply, and in the manufacturing processes and lead-times. By taking into account such uncertainties, MEIO calculates the “right” level of inventory at every level of the supply chain so that *your* requirement of the service *level* is met at the *lowest cost*. The figure below shows the relationship between cost and service level and how MEIO minimizes the cost for the same desired service level.

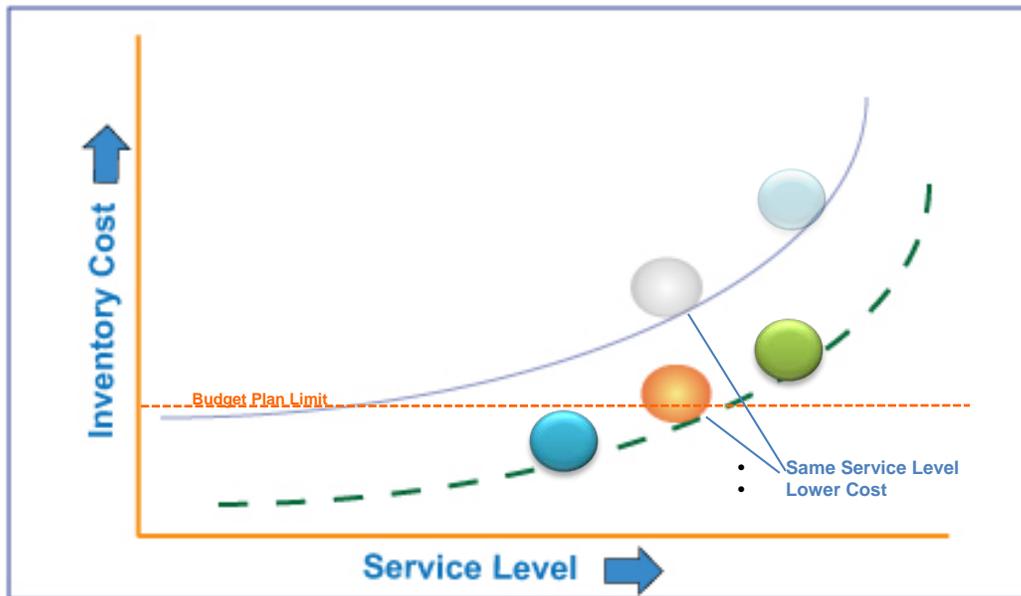


Figure 1-Relationship between Cost and Service Level

It is interesting to note that companies generally achieve 70% of their on-time delivery goals, however they only reach 25% of their inventory targets. Like fat in humans, inventory is an essential component of every company. The question is how much is enough and how much is too much? Inventory is reduced by addressing the “drivers” of the inventory:

- Wait time
- Set-up time
- Transport time
- Yield
- Push planning
- Making it too early or too late
- Keeping it in the right location

MEIO enables you to evaluate the trade-offs between service and cost of inventory, understand the drivers of inventory related costs, understand impact of uncertainty in supply chain and finally move to lean manufacturing to reduce/eliminate bullwhip effect.