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ARKIEVA

MULTI ECHELON INVENTORY OPTIMIZER

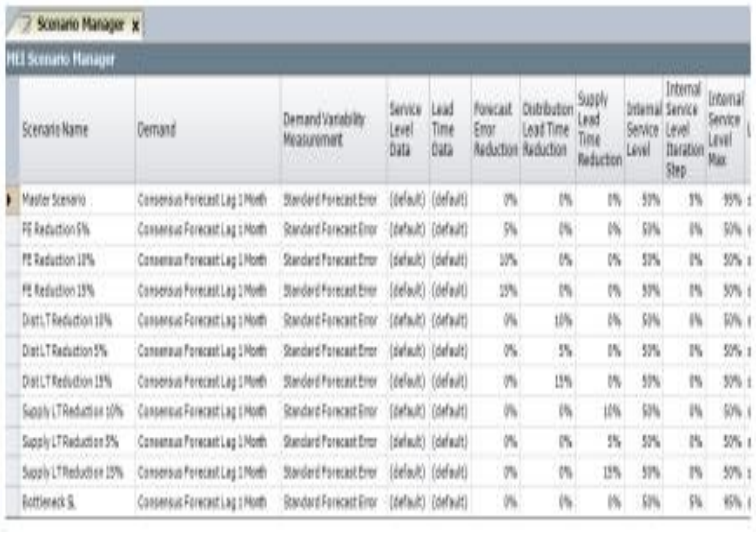
Arkieva Multi Echelon Inventory Optimizer

Arkieva has designed its Multi-Echelon Inventory Optimization (MEIO) module as a comprehensive tool to optimize safety stock targets. It takes into account demand and supply uncertainty at each echelon and node and uses a sophisticated algorithm to optimize the targets across the network in a multi-echelon way. It also enables scenarios and allows comparison of these scenarios with each other. This module combines advanced MEI capabilities with the data management, analytics, and reporting engine within the Arkieva Software.

Businesses can use this module to significantly reduce inventory while maximizing service. In addition, the calculated targets can be used in the Arkieva supply planning module to manage optimal planning according to these targets.

MEIO Key Capabilities

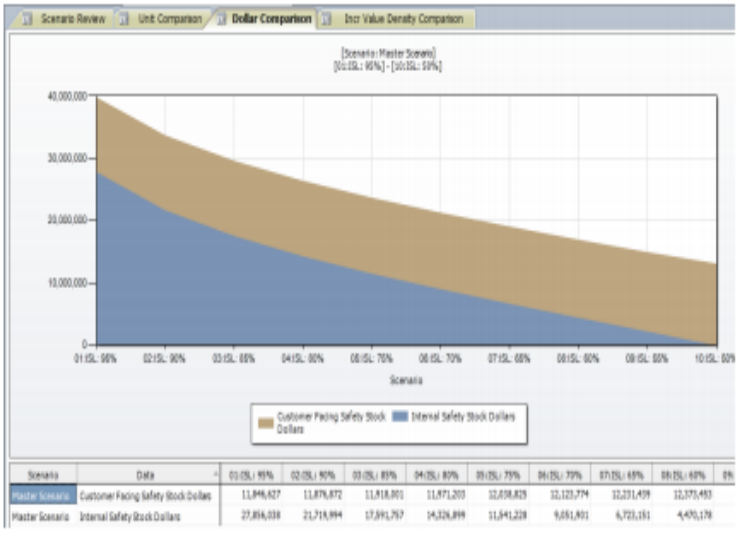
- Optimize inventory targets for all materials and locations across a multi echelon network
- Flexible settings for service level definition and service level differentiation
- Scenario capabilities to measure impact of different assumptions/settings
- Evaluate both the distribution network (Bill of Distribution (BOD based) and production network (Bill of Distribution (BOD based)
- Extensive analytics and reporting capabilities



Summary Report detailing the SS investment for each echelon in a distribution system

MEIO User Benefits

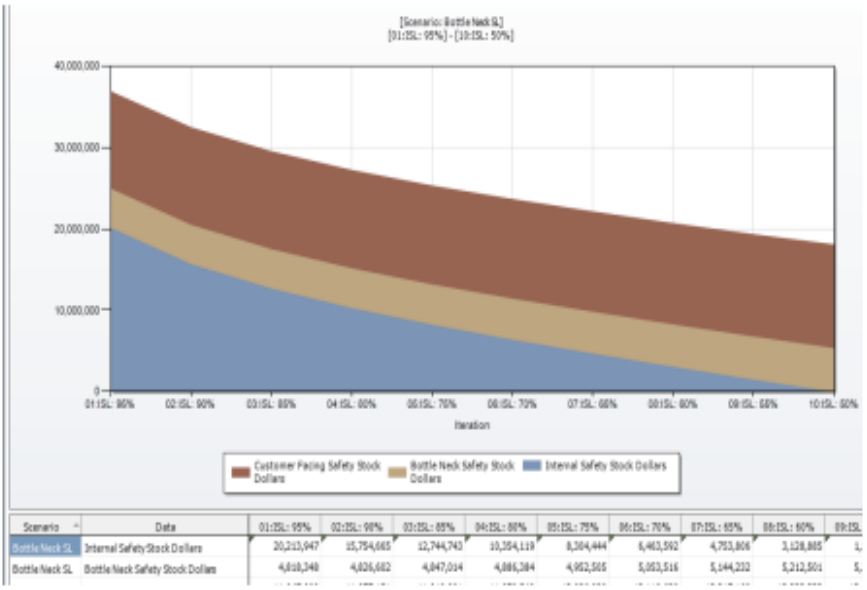
- Quickly calculate inventory targets across the network
- Evaluate tradeoffs between different service levels strategies
- Tie the results into Supply Planner or Replenishment Planner
- Significant savings by way of inventory reductions (Typically 30%)
- Configurability and adaptability over time



Single Echelon vs Multi Echelon System

Managing Inventory effectively across a multiple–echelon supply chain network is a key requirement facing all global companies. While traditional safety stock methods have provided a good mechanism to determine inventory targets for single echelon settings, multi echelon networks require special treatment.

In a single-echelon network, an individual material-location combination is not affected by any other material or location. If a business was selling products from a single location, then it would rightly be categorized as a single-echelon system. All traditional safety stock methodologies assume a single echelon.

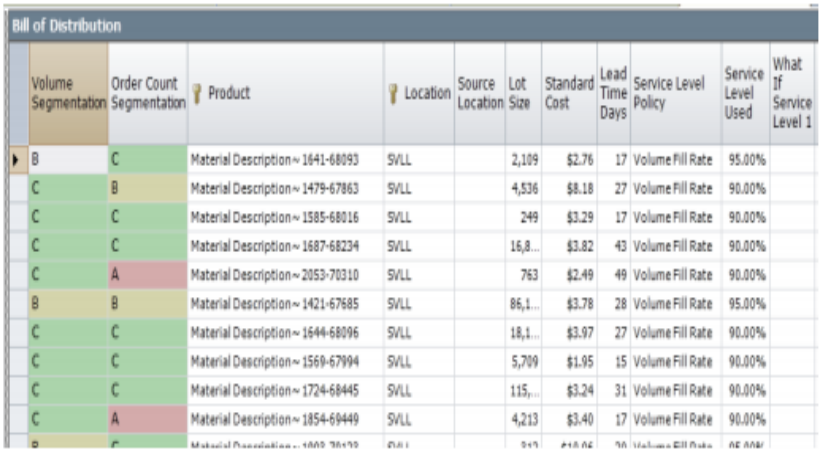


Summary reports detailing the SS investment for each echelon in generic system with a bill of materials

However, most businesses usually operate through a distribution network (Plant/DC/Warehouse) as well as a manufacturing network (via production stages and BOM). The inventory levels at each of these levels have an impact on the required inventory at other levels. For example, a business might keep its inventory entirely at the component (or bulk) level and only make the final product at the very last stage (postponement). Conversely, a business might choose to push the entire inventory to the final distribution point, indicating a strategy that is highly responsive to customer orders (Make to Stock). And of course, there can be various shades in the middle.

The Key Questions Are:

- How much inventory should be kept where?
- Show we practice postponement or risk pooling strategies and risk customer service, or should we load the forward warehouses?
- How to distribute the inventory so the overall investment is minimized without jeopardizing the service level?


Bill of Distribution

Volume Segmentation	Order Count Segmentation	Product	Location	Source Location	Lot Size	Standard Cost	Lead Time Days	Service Level Policy	Service Level Used	What If Service Level 1
B	C	Material Description~1641-68093	SVLL		2,109	$2.76	17	Volume Fill Rate	95.00%	
C	B	Material Description~1479-67863	SVLL		4,536	$8.18	27	Volume Fill Rate	90.00%	
C	C	Material Description~1585-68016	SVLL		249	$3.29	17	Volume Fill Rate	90.00%	
C	C	Material Description~1687-68234	SVLL		16,8...	$3.82	43	Volume Fill Rate	90.00%	
C	A	Material Description~2053-70310	SVLL		763	$2.49	49	Volume Fill Rate	90.00%	
B	B	Material Description~1421-67685	SVLL		86,1...	$3.78	28	Volume Fill Rate	95.00%	
C	C	Material Description~1644-68096	SVLL		18,1...	$3.97	27	Volume Fill Rate	90.00%	
C	C	Material Description~1569-67994	SVLL		5,709	$1.95	15	Volume Fill Rate	90.00%	
C	C	Material Description~1724-68445	SVLL		115,...	$3.24	31	Volume Fill Rate	90.00%	
C	A	Material Description~1854-69449	SVLL		4,213	$3.40	17	Volume Fill Rate	90.00%	

When a business begins to ask these questions, they are essentially thinking of a multi-echelon inventory problem. On the other hand, if they treat each node independently to calculate the target inventory, then they are treating a multi-echelon problem in a single-echelon, sub-optimal way.

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ABOUT US

Since 1993, Arkieva tools have been used in more than 200 unique applications around the globe, and most of our clients leverage Arkieva software to support collaborative planning teams in North America, Europe, and in Asia.