



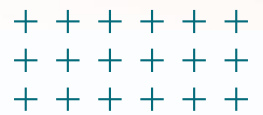
# CASE STUDY

## **Simulation-based optimization to minimize stock obsolescence for a multi-echelon supply chain network**

The client is an American multinational manufacturer and marketer of branded consumer foods sold through retail stores.

### **Executive Summary**

The manufacturer experienced unpredictability in inventory management and the inability to find a balance between inventory & service level.



## Client Challenges

- Hyper unpredictability in inventory management and the inability to find the right balance between inventory and service level
- Need to find the correct internal shelf-life factor, that was done based on thumb rule thus far and no science/ analytics behind the rule
- Inability to arrive at decisions on what, how much, where, and when to stock products, across the global supply chain impacting the profitability
- Holding more inventory to ensure customer availability was leading to increased inventory costs and obsolescence while holding too less inventory was leading to low service levels and lost sales



## Our Solution

- Developed a digital twin of supply chain using a leading simulation modelling software that facilitated the decision-making process to keep the right inventory in the right place
- A simulation-based optimization model was developed to find the optimal production policy to maximize fill rate and minimize wastage
- Product segmentation to define the inventory strategy based on different product parameters
- Developed inventory policy to identify the best service levels achievable within the budget constraint



## Results

30% reduction in inventory wastage with better network planning

13% improvement in the service level resulting in higher demand fulfillment with minimum obsolescence

Optimized pre-build decisions by using shelf-life factor

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