Case Study: Supply Chain Modeling

A skincare manufacturer faced inventory problems.

Business Context

A prestige skincare manufacturer is facing excess inventory problems, especially on low demand, slow moving and high volatile SKUs (D and C items). In 2015, 70% of the SKUs were D-items (low runners) which represented 5% of the business, 48% of the excess inventory and 18% of the total inventory. CGN was sought out to evaluate inventory stock options between manufacturing facilities and all global distribution centers for a small scope of D-items (~500 SKUs), and model the global distribution network to evaluate capabilities of Supply Chain Guru and validate the simulation study Model and validate current state single stage network of D-items for global distribution to

- Improve/Optimize network
- Identify and simulate optimal replenishment policies

Objectives & Scope

- CGN worked with the client to establish the following:
  - Simulate and validate baseline model for current state network
  - Evaluate impact on service & inventory levels for reduced batch sizes, centralized distribution strategy and different target service levels
  - Evaluate capabilities of Supply Chain Guru
  - Use results to estimate value proposition for all D-items

Approach

- CGN built a forecast “days of supply” based model for baseline validation output with stakeholders
- Generated inventory and service level outputs based on what-if-scenarios by altering the necessary parameters in the model for each scenario
- Validated every output by performing detailed analysis and explored additional options with support from Llamasoft
- Extrapolated the results for the items in scope to all the D-items to get the estimated value proposition

Results

- Achieved over 98% simulation accuracy (Baseline Model vs. Actuals)
- Recommended a hybrid scenario of centralized distribution strategy and historical demand (Days of Supply) based replenishment. Simulated a $1.1 million inventory reduction with a 3% increase in customer fill rate
- Showcased software capabilities by running several what if scenarios & validating the output in detail
- Estimated a $12 million inventory reduction for all D-items

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