



Modeling Supply Chain Responsiveness

Project Overview

A heavy equipment manufacturer was lagging behind the competition in product availability to customers. The product line was producing low volume, highly customized equipment with over 100 possible configurations. It had a complex supply chain comprising more than 250 suppliers and customers and over 30 dealers.

Aiming to meet market expectations, the client engaged CGN Global (CGN) to assess and redesign its supply chain network to support faster product availability.

Business Objectives

CGN's objectives were to assess the current state performance of the manufacturer's supply chain network from suppliers to customers, identify inventory reduction opportunities (quick wins), simulate and optimize network performance under different product requirements and study the impact of reduced supplier response times.

Supply Chain Challenges

- Long supplier response times for high value parts
- Lack of visibility of true customer demand and network inventory levels and coordination between manufacturer and dealers
- Long processing times at dealer facilities
- 45 week product availability (competition @ 14 weeks)

CGN's Approach

CGN developed and used the following approach to solve the problem:

- Simulate and validate the current state network
- Optimize the current state network and determine optimal product flows, inventory levels and replenishment policies
- Brainstorm future state scenarios based on different product availability requirements and postponement ideas and optimize the network for each scenario
- Compare performance, inventory levels and total network costs for all scenarios

Results & Conclusions

- Optimized replenishment policies for high value parts (top 10 opportunity parts) yielded **\$1.6M** in inventory reduction
- Optimized future state model yielded **\$9.6M (44%)** reduction in network inventory and **\$1.7M (25%)** reduction in freight cost when compared with the current state
- The study enabled the client to redesign its supply chain network to offer **14 week** product availability to customers - a **69% reduction** from the baseline

Our Expertise

The problem solving methodology used at CGN Global is a proven approach towards improving operational performance regardless of the issue causing the problem or the solution needed to fix it. Most organizational problems have unnoticed ripple effects across the company thereby affecting operations, end products and eventually customer satisfaction. Our 20+ years of problem solving experience enables us to quickly and accurately identify key problems, detect causes at the most foundational level and provide solutions to improve overall organizational effectiveness.

CGN Global's problem solving methodology is based upon 4 fundamental constructs that must fit within any problem solving process. These constructs have been defined and forged through years of practical experience and thought leadership:

- Problem Definition
- Fault Isolation
- Root Cause Analysis
- Correction and Error Proofing

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