



National Bottled Water Distribution Company Case Study

Benefits

- A new optimization application allowed management to analyze and make strategic and tactical decisions with accuracy and confidence.
- The client can push a button to obtain a “best cost” solution for the scenario at hand.
- The client can quickly analyze the placement and location of production facilities, distribution centers and warehouses over a multi-period planning horizon.
- The client can solve detailed supply chain network design problems in a few days with optimal results.
- Cost savings of 10% of supply chain costs and 25% of supply chain cycle time are typical for these types of solutions.

Background

Managing the process for truck delivery of bottled water to residential and commercial customers throughout the US is a full time job. With 120 + distribution centers and 1.7 million customers nationwide, it requires more than 2000 trucks to make the more than 2.5 million visits each month. Managing all this in the fast-paced world of home water delivery takes some special skills, special processes, and special software.

Objectives

DS Waters Enterprises was created from the North American Water operations of Groupe Danone and Suntory Limited. The combination creates a home and office water delivery service with 1.7 million customers in the US. Brands offered by the company include Sparkletts, Crystal Springs, and Alhambra. The merger of these operations created opportunities to consolidate facilities and improve customer service.

Together these merged companies could potentially serve a much larger geographical area. They wanted to measure the supply chain benefits associated with increased production and distribution capabilities. They needed to analyze the placement and location of production facilities, distribution centers and warehouses over a multi-period planning horizon. All this while they were experiencing production increases in a period of rapid growth.



Our Solution

Profit Point designed and built network planning optimization tool in MS Access to help them restructure their supply chains for their geographic market. Major Inputs Included:

- Product information (finished goods with purchase and fixed costs)
- Distribution centers and warehouses with facility handling and fixed costs
- Customer locations with their demand forecasts by product
- Transport costs from point to point
- Manufacturing plants, with production and fixed costs
- Raw material source data

The tool allowed the user to input the data directly into MS Access tables, or import the data from MS Excel spreadsheets. The application takes user data and sets up and solves a mixed integer-programming problem to find the minimum cost set of facilities within given constraints.