SAUDER
School of Business
UNIVERSITY OF BRITISH COLUMBIA

COE CENTRE FOR
OPERATIONS
EXCELLENCE

Centre for Operations Excellence

Logistic Planning and Optimization for a Beverage Manufacturing and Distribution Company

Client Profile

A private Canadian beverage manufacturing and distribution company launched a new and instantly popular brand two years ago. The company has production facilities and warehouses across North America.

Business Challenge

The company's recent expansion into the US market involved setting up a manufacturing, logistics and distribution system in the US. They approached the Centre for Operations Excellence (COE) to find ways to enhance this system. The COE worked with the company to determine the optimal production levels, optimal distribution of products and optimal inventory levels. The COE also proposed the development of a tool to be used by company planners for operational and tactical level decisions such as production, transportation and inventory levels, and inventory capacity expansion, warehouse reallocation, and price negotiation for raw material.
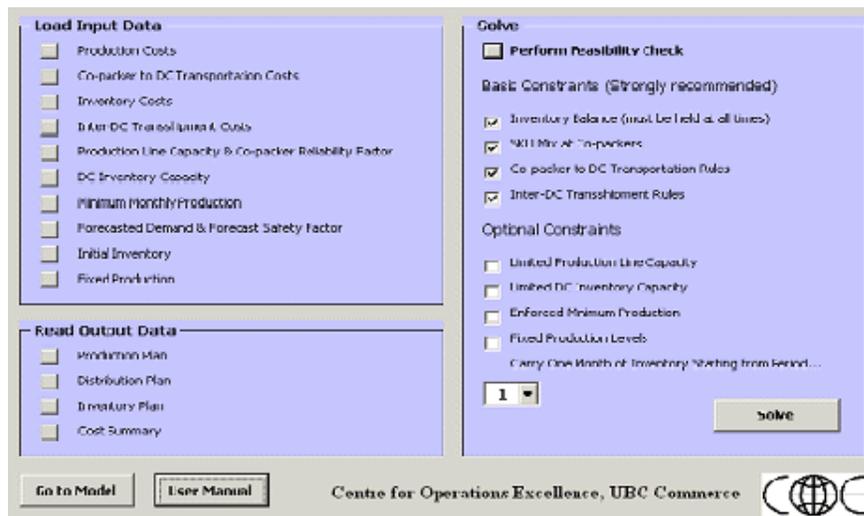
Value Delivered

The COE developed a computer-based planning tool called the Aggregate Logistics Optimization Tool (ALOT). For each product, ALOT could find:

- The optimal production level of each production facility
- The optimal distribution from production facility to warehouse, and an optimal transshipment plan between warehouses
- Optimal warehouse inventory levels

The tool enabled company planners to explore the tradeoff between the different decision-making parameters. The COE designed the tool with a user-friendly input screen (see below). ALOT has been used for tactical and operational decisions and was expected to produce significant cost savings for the client.

The COE Approach

The company provided the COE with necessary data and information to create a model – production, inventory and transportation costs, production and warehouse capacities, forecasts and business details. The COE developed a software tool that used linear programming to create a model to minimize the total costs and to produce a logistics and distribution plan while obtaining the necessary business constraints.