K.Sight COST2SERV

Supply chain insights for efficient change

Flogas: Powerful network and supply chain tool

The existing network maze

Flogas is one of the UK's largest suppliers of Liquefied Petroleum Gas (LPG) to homes and businesses throughout the UK. When the company's steady organic growth was compounded by the acquisition of two other, major suppliers, Flogas's distribution network quadrupled in just 12 months. The company now had thousands of customers across the country, many in dispersed areas beyond the National Grid, and a distribution network that comprised third-party supply facilities, its own teams and the legacy of acquired depots.

The Flogas primary supply chain involved the collection of propane and butane from refineries for delivery into depots, which varied in terms of what they could handle. Once bottled, the cylinders passed into the secondary supply chain, either going direct to customers or onto another depot. The demands on the distribution network were complicated by a number of factors. Chief amongst these was the sheer scale of the operation, especially in winter, with vehicles typically making 10-12 deliveries each day across wide geographies, often involving small volumes per drop to customers with differing service contracts.

Quick facts: Flogas

- **Headquarters:** Leicester, England
- **Market:** Britain, Republic of Ireland, Northern Ireland, Sweden, Norway, Belgium and the Netherlands
- **Solution:** K.Sight COST2SERV

At a glance:

- A powerful network modelling and simulation tool providing vital and objective evidence
- Enables users to validate strategies for network change
- Discloses options for reductions in cost-to-serve within existing constraints
- Enables total supply chain costs to be considered
- Identifies the optimal distribution network using mathematical optimisation techniques
- The tool's complex algorithms allow wide ranging questions to be answered down to individual customer level
- A tool that may be used independently or with the support of Körber
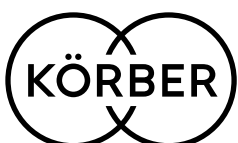
Mapping out a new approach

Flogas management was well aware that the distribution network spawned by the growth of the business was not as they would have designed it, had they been able to start from scratch, and it was therefore under constant review in an effort to increase service levels and manage costs. However, the challenges remained of objectively validating ideas for change to the shareholders and of ensuring that the company's approach to modeling the true cost/benefit of network alterations was as effective as it could be. As a result, the decision was taken to find a problem solving partner with a deep understanding of supply chain modeling, logistics expertise and a sophisticated software tool that would facilitate the process of evidence-based decision-making.

Defining the present

Körber was invited by Flogas to undertake the project using its COST2SERV Network Strategy tool, which was developed by Cirrus specifically to enable organisations with complex distribution networks to reduce their total cost-to-serve and maximise margin. In the course of a four-month exercise, a base case model was built up using different sets of data to reflect winter and summer demand levels and taking full account of all the constraints. The total supply chain costs, including product source costs at the refineries, primary transport costs, cylinder filling costs and secondary transport costs, were all entered into the model to enable the cost for the total supply chain to be minimised using 'mathematical programming' techniques.

By running a series of 'What if?' scenarios with depots allowed to close one at a time, the relative savings were identified and the team was able to progress towards the best possible distribution network in the real world. For Körber, this work involved the creation of a powerful new "clustering" algorithm, bringing individual customers together in small groups based on their purchasing profile and geography.

Planning the future

The project provided a raft of validated information which has become the basis for change in the Flogas network. The depots that are not required within the network, as well as the transfer of drivers between depots to make best use of the network, have been identified together with the cost benefit of addressing these issues. Flogas also intends to use the data to help decide which customer segments should be targeted for growth and increased profitability and which do not fit the business plan. The full value of the first exercise in reducing distribution network costs has yet to be realised but the confidence generated by the experience means that Flogas already has further plans to use K.Sight COST2SERV Network Strategy, both in partnership with Körber for specific modeling exercises and independently to support on-going distribution operations.

"Payback has been rapid and, while it is early days yet, I believe we will go on to achieve some 5% reduction in our total distribution costs as the result of undertaking this first project with Körber."

- James Rudman, business development director at Flogas