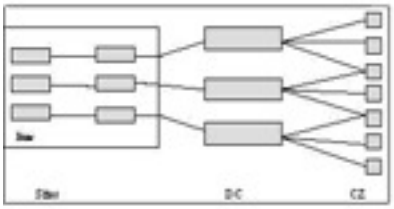
Schumann: Supply Chain Optimisation in an Uncertain World

Client: European Commission: Framework IV Program

Project Scope: The Schumann strategic model is a cutting-edge software tool that focuses on the optimization of network design over a long-term time frame, typically in excess of five years. It is empowered to handle both inbound and outbound supply flows taking into account a wealth of different scenarios relating to the future realization of uncertain parameters, such as demand patterns and tariffs. The Schumann tactical modeling package is a software system that assists in the optimization of resources across a supply network.



Project Achievement: The strategic model proved to be especially useful in developing capital budgeting plans. It can be exploited to analyse the current state of a supply network, and make resource allocation decision which are particularly robust in respect of scenarios. The Optimisation systems could be implemented in any industrial manufacturing, assembly and distribution environment. At the prototype stage, it has proven effective in improving the logistics operations of automotive supply chains but there are no sectoral limitations. The model is used in a wide variety of supply chains and activities, such as central planning, scheduling, network development and cost control. Successful tests and implementation have shown that the model could generate the best mix of assets to support cost effective growth/contraction, assess the impact of merger & acquisitions, or identifies the lowest risk strategy in uncertain environments. The Schumann system simultaneously generates double-figure improvements in capacity, reduction in lead-time and in total costs.

Client Feedback: "The Schumann model has given us a tool to better understand our supply chain, including the potential effects of scheduling variations" R Alonso, Ford.

References

1 G Mitra CARISMA, C Poojari CARISMA, S Sen Univ. of Arizona, Strategic and tactical planning models for supplychain: an application of stochastic mixed integer programming, CARISMA Ref CTR/25/04

2 C Lucas, S A MirHassani, G Mitra, C Poojari, Journal of the Operational Research Society, 52 (2001) pp 1256-1266.