

**The Sixteenth Triennial Conference of the
International Federation of Operational Research Societies**

Conference theme:

**OR in a globalised,
networked world economy**

FINAL PROGRAMME

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Customer satisfaction measurement offers a quantitative measure for performance, while it gives the ability of benchmarking by determining the strong and the weak points of any business organisation compared to the competition. A variation of the MUSA methodology for satisfaction benchmarking analysis and an application to the Greek airline industry are presented through this paper. The main objectives of the methodology are the planning and implementation of improvement actions, the adoption of best practices and the inspection of satisfaction evolution. Besides customer behaviour analysis and satisfaction analysis for each airline company, provided results are focused on the performance comparison, globally and per service characteristic. Furthermore, combining these results with financial performance indicators, the industry satisfaction barometer and the level of customer loyalty can be evaluated.

FB9 Forecasting I

Contributed session

Venue: MS-3

Chair: **Angusamy, Ajitha**
Malaysia

1) *Forecasting the population of Kuwait*, **Alkhatrash, Seham A.**, University of Salford, United Kingdom; **Baker, Rose D.**

We forecast the population of Kuwait to the year 2020. Such forecasting is needed for Government planning, as the birthrate in Kuwait is much higher than in the UK. The analysis is unusual in that it uses comprehensive fertility, mortality and population data collected in Kuwait and not previously available, and in that a model is fitted to data by maximum-likelihood methods. This enables confidence intervals on the forecasts to be computed. A sensitivity analysis is also carried out.

2) *Location Assessment of Outlet Networks*, **Mendes, Armando B.**, Azores University, Portugal; **Themido, Isabel Hall**

Location Assessment of Outlet Networks is a complex decision. The complexity derives mainly from the enormous amount of data that should be considered. Variables of geographical nature are used to evaluate the accessibility of the several locations, while the demographic ones allow the store's trade area evaluation. Socioeconomic variables are indispensable in the potential customers' characterization, and competition ones are used for the evaluation of the new store market share. The methods are multiple, varying from simple analogy forecast models to very complex ones, which can incorporate causal models in a gravitational or logit structure. More recent developments as the use of meta-heuristics such as genetic algorithms for the global problem of the multi outlet chain configuration, or the use of Voronoi tessellations in store trade area delimitation, are also presented. Finally the Geographical Information Systems' role on the decision support process is equally explored.

3) *Forecasting The Demand Of Speciality Chemical Products*, **Omar, Mohamed khaled**, Dr, Malaysia; **Rahman, Noor Lela** ; **Angusamy, Ajitha**

Integrating planning and forecasting activities is the main theme of this research. Many researcher addressing planning problem has treated forecasting as a separate activities from the planning and scheduling. A hierarchical framework, which comprises of forecasting module, an aggregate planning module and disaggregate planning module has been developed and tested for a speciality chemical firm. The proposed architecture framework, through proof-of-concept implementation, has improved the quality of decisions. This study is concerned with managing demand uncertainty and report on the impact of forecasts accuracy on managing demand uncertainty.

FB10 Case Studies III

Invited session

Venue: MS-4

Organizer: **Ranyard, John**
Lancaster University, United Kingdom

Chair: **Ranyard, John**
Lancaster University, United Kingdom

1) *Redesigning a freight company network in 8 weeks!*, **Hubert, Iain**, United Kingdom

As part of Cap Gemini, Ernst & Youngs OR group, I was asked to join a project that we were undertaking with a UK freight company. The brief was to model their network and find some improvements in 8 weeks. In that time I managed to produce a model of the network that could be understood by not only the client, but also by my fellow consultants, and then through the application of optimisation, was able to show that they could save up to 2 million pounds a year, just by changing which depots served which areas.

2) *Electricity Demand Forecasting in the New Trading Environment*, **Duncan, Stephen John**, Cap Gemini Ernst and Young, United Kingdom

In 2001, the rules in the Electricity market changed from the old pool system to one based on Trading just like any other commodity. Suppliers need to forecast demand from their customers and agree contracts to purchase the appropriate amount. Any difference between the demand and the amount purchased - whether positive or negative - results in added cost for the company. It is therefore important for accurate demand forecasting. This case study covers the background of the Trading environment and a forecasting system used by an electricity supplier.

3) *Streamlining Engineering Support*, **Parkin, Jane**, Huddersfield University, United Kingdom; **Rice, Stephen**

A major engineering company services approximately 25000 pieces of equipment ranging from pallet trucks to sophisticated cranes on both a regular maintenance and emergency call-out basis and operates through 12 service managers, 30 fleet

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