

OPTIMIZATION METHODS IN BUSINESS DECISION MAKING USING SPREADSHEETS

Duration : 1 Day

Introduction:

Optimisation technologies have become key tools in making important business decisions that increase competitive advantage.

The logistical problems of World War II led to the development of the fields of operations research, decision analysis and management science. Following the end of the war, advances in computer technology allowed teams of specialists to apply the techniques developed in these fields to industrial problems as diverse as

Production, transportation and financial portfolio optimization. However, the high cost of computer time and an "algebraic curtain" of mathematical formulas separated most managers from management science for about four decades. In the 90's there was a revolution in decision technology. Desktop computer speeds improved dramatically. Enormous memory capacity was placed at the disposal of the common user.

This revolution empowered the decision makers directly through implementation of proven mathematical techniques using spread sheets and other user-friendly software tools. Spreadsheets today enable anyone to perform advanced optimization and analytical procedures that were once the exclusive province of Ph.D.-holding experts in applied mathematics.

Optimisation, through the use of advanced mathematics and computer science techniques, is used to assist organisations with solving their complex business problems in areas such as manufacturing, distribution, finance and scheduling. The success of optimisation projects depends on many different factors such as which modelling tools are used, integration with corporate data and the selection of the most efficient solution algorithms available for the problem.

The purpose of this optimisation workshop is to provide participants with an insightful overview and give step-by-step instructions for successfully building optimisation applications.

In today's age of information overload, analysis of information for appropriate decision making is extremely important. One of the simplest tools for effective decision making is spreadsheets. Infact, companies from all domains expect managers to develop and use spreadsheet based models for decision making. The MDP is to provide an introduction to the use of spreadsheets based models in decision making.

Coverage :

We introduce optimisation modelling using an algebraic modelling system and help delegates develop an understanding of how to formulate real-world optimisation models.

We also guide participants to learn the tools and methods used for embedding optimisation into business applications including Microsoft Excel.

The emphasis is on models that are widely used in diverse industries and functional areas, including finance, accounting, operations, and marketing. Applications will include advertising planning, blending, revenue management & asset-liability management.

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Topics:

1.Linear Programming Problems(Maximization & Minimization) using Excel Solver

2.Transportation Models using Excel Solver

3..Assignment Model using Excel Solver

Applications covered:

- **Product mix decisions for marketing**
- **Make-buy decisions for Operations Managers**
- **Media selection/planning. Decisions for Marketing**
- **Labour /Salesforce Management**
- **Portfolio selection Decisions for Finance professionals**
- **Logistics and Shipping Decisions**
- **Salesforce allocation Decisions**

Methodology:

- Enabling managers to understand and apply:
- Problem Solving and decision Making using Excel.

- Managing a spreadsheet development project.
- The emphasis of this one day workshop would be on giving participants hands on experience on Excel Solver.
- Excel Solver or optimizers, is software tool that help users find the best way to allocate scarce resources. The resources may be raw materials, machine time or people time, money, or anything else in limited supply. The "best" or optimal solution may mean maximizing profits, minimizing costs, or achieving the best possible quality.

Key Take Aways:

This programme is designed to benefit all those individuals who are actively involved in the decision making process of their organizations. This includes those who actually take decisions and those who provide analytical support to the decision maker. The former comprises all mid to senior level executives, while the latter includes consultants and analysts - financial analysts, operations analysts, marketing analyst, etc.

At the end of the workshop, the participants will be able to develop their own optimisation models, link them to datasources and solve the model using state-of-the-art commercial solvers.

Participants will also acquire a good knowledge on how to embed optimisation models into applications.

By attending this workshop participants will be able to:

- Build their own optimisation applications.
- Identify the best use of optimisation techniques and how to deploy them for your purposes.
- Gain an insightful and realistic view on the use of optimisation in business applications.
- Prepare and consolidate data from disparate sources for optimisation applications.
- Identify solving and fine-tuning requirements in your optimisation applications.

Software Used: The program is designed to give participants hands on experience on

1.LPOPT(Open Source solver)

2.Microsoft Excel

Each participant is expected to preferably carry Lap top or Net books for the session. They are also expected to install Open Office .Org on their syStem or should have already installed Solver Add in and data analysis add in their excel.

Target Audience :

1.OR Professionals

This workshop series will help you to get up-to-date on the latest methodologies and receive exposure to the wide range of technologies and software now available in the field of optimisation.

2.Quantitative/Risk Analysts

This workshop series gives you an overview of the wide range of the technologies available allowing you to define and conceptualise your business problem in terms of an optimisation problem.

Academics and Students

Take advantage of our application focused examples to view optimisation from a business perspective, as well as receive hands-on experience with leading optimisation software

Senior and functional managers of Manufacturing and Service organizations in following functional areas:

- Marketing,
- Sales & Distribution
- Planning & Control

Profile of Instructor

Jasdeep Chadha has over 19 years of teaching experience at Post Graduate Level in B Schools. Currently he is working as Associate Professor (Operations) in one of the Premier B Schools of the India **BHAVAN'S USHA & LAKSHMI MITTAL INSTITUTE OF MANAGEMENT(BULMIM),NEW DELHI** Prior to joining BULMIM, he has been associated with IILM INSTITUTE FOR BUSINESS & MANAGEMENT,GURGAON . His areas of interest include Operation Research, Operation Management,Spreadsheet Modelling & Supply Chain Management.

Conducted various MDP's at PHD Chamber of Commerce and Industry,RADICO KHAITAN,IBM and GENPACT,Gurgaon