

## MANAGEMENT DECISION MAKING

### Spreadsheet modeling, analysis, and application

*Management Decision Making* is a spreadsheet-based introduction to the tools and techniques of modern managerial decision making. The author shows how to formulate models in Microsoft Excel that can be used to analyze complex problems taken from all the functional areas of management, including finance, marketing, operations, and human resources. Throughout the book, the goal is to understand how business decisions are reached, what trade-offs are made, and how outcomes depend on the underlying data.

A broad range of analytical methods is discussed, including linear programming (with an emphasis on post-optimality analysis), integer linear programming, decision analysis, decision trees, queues (including optimization of queues), and Monte Carlo simulation. Included is a CD-ROM that contains Excel files for all examples in the book plus the widely-used decision analysis software applications, TreePlan and Crystal Ball.

The book is aimed at undergraduate and graduate students of business, economics and engineering, including those taking MBA courses. It will also be of great interest to business managers who want to learn more about practical spreadsheet modeling.

**George E. Monahan** received his PhD from the Kellogg Graduate School of Management at Northwestern University and is Professor of Business Administration at the University of Illinois, Urbana-Champaign. He has been a visiting scholar at the London School of Economics and is an Area Editor for the journal *Production and Operations Management*.

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Spreadsheet modeling,  
analysis, and application

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To the people who are the center of my universe—  
my wife Susan and my children Aili and David

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## Preface

*Management Decision Making: Spreadsheet Modeling, Analysis, and Application* is an introduction to the tools, techniques, language, and methods of analysis of modern managerial decision making for students in business, economics, and engineering. The focus is on *translation*, *construction*, and *interpretation*:

- Complex problems in all of the functional areas of management, including finance, marketing, operations, and human resources, are *translated* into decision models. Emphasis is on the art of analytical model building.
- *Construction* is the process of building *spreadsheet models* in Microsoft® EXCEL from the decision models. Skills developed here center on the effective use of the many powerful features of EXCEL. Built-in functions in EXCEL, as well as add-in software that comes bundled with this book, are used to generate “solutions” to spreadsheet models.
- *Interpretation* is the conversion of solutions generated in EXCEL into managerially-relevant terms that are understandable to those familiar with neither analytical tools nor spreadsheet models.

Little attention in this book is devoted to underlying details regarding the computational procedures used by EXCEL. At times, however, some computational details are needed to motivate managerial insight.

### Key emphases and features

1. *A management orientation*

Each of the decision problems presented in the book is motivated from a managerial perspective. The purpose is to glean significant insights into complex managerial problems found in all of the functional areas of the firm.

2. *Development of decision modeling skills*

Detailed, step-by-step approaches are provided for converting complex problem statements into effective decision models, which enhance the