*Practical Management Science*, 4e

Albright, Winston

1. Introduction to Modeling
	1. Introduction
	2. A Waiting-Line Example
	3. Modeling Versus Models
	4. The Seven-Step Modeling Process
	5. A Great Source for Management Science Applications: *Interfaces*
	6. Why Study Management Science?
	7. Software Included in this Book
	8. Conclusion
2. Introductory Spreadsheet Modeling
	1. Introduction
	2. Basic Spreadsheet Modeling: Concepts and Best Practices
	3. Cost Projections
	4. Breakeven Analysis
	5. Ordering with Quantity Discounts and Demand Uncertainty
	6. Estimating the Relationship Between Price and Demand
	7. Decisions Involving the Time Value of Money
	8. Conclusion

Appendix: Tips for Editing and Documenting Spreadsheets

1. Introduction to Optimization Modeling
	1. Introduction
	2. Introduction to Optimization
	3. A Two-Variable Product Mix Model
	4. Sensitivity Analysis
	5. Properties of Linear Models
	6. Infeasibility and Unboundedness
	7. A Larger Product Mix Model
	8. A Multiperiod Production Model
	9. A Comparison of Algebraic and Spreadsheet Models
	10. A Decision Support System
	11. Conclusion

Appendix: Information on Solvers

1. Linear Programming Models
	1. Introduction
	2. Advertising Models
	3. Worker Scheduling Models
	4. Aggregate Planning Models
	5. Blending Models
	6. Production Process Models
	7. Financial Models
	8. Data Envelopment Analysis (DEA)
	9. Conclusion
2. Network Models
	1. Introduction
	2. Transportation Models
	3. Assignment Models
	4. Other Logistics Models
	5. Shortest Path Models
	6. Network Models in the Airline Industry
	7. Conclusion
3. Optimization Models with Integer Variables
	1. Introduction
	2. Overview of Optimization with Integer Variables
	3. Capital Budgeting Models
	4. Fixed-Cost Models
	5. Set Covering Models and Location–Assignment Models
	6. Cutting Stock Models
	7. Conclusion
4. Nonlinear Optimization Models
	1. Introduction
	2. Basic Ideas of Nonlinear Optimization
	3. Pricing Models
	4. Advertising Response and Selection Models
	5. Facility Location Models
	6. Models for Rating Sports Teams
	7. Portfolio Optimization Models
	8. Estimating the Beta of a Stock
	9. Conclusion
5. Evolutionary Solver: An Alternative Optimization Procedure
	1. Introduction
	2. Introduction to Genetic Algorithms
	3. Introduction to Evolutionary Solver
	4. Nonlinear Pricing Models
	5. Combinatorial Models
	6. Fitting an S-Shaped Curve
	7. Portfolio Optimization
	8. Cluster Analysis
	9. Discriminant Analysis
	10. The Traveling Salesperson Problem
	11. Conclusion
6. Decision Making Under Uncertainty
	1. Introduction
	2. Elements of Decision Analysis
	3. The PrecisionTree Add-In
	4. Bayes’ Rule
	5. Multistage Decision Problems
	6. Incorporating Attitudes Toward Risk
	7. Conclusion
7. Introduction to Simulation Modeling
	1. Introduction
	2. Probability Distributions for Input Variables
	3. Simulation and the Flaw of Averages
	4. Simulation with Built-In Excel Tools
	5. Introduction to @RISK
	6. The Effects of Input Distributions on Results
	7. Conclusion
8. Simulation Models
	1. Introduction
	2. Operations Models
	3. Financial Models
	4. Marketing Models
	5. Simulating Games of Chance
	6. An Automated Template for @RISK Models
	7. Using TopRank with @RISK for Powerful Modeling
	8. Conclusion
9. Inventory Models
	1. Introduction
	2. Categories of Inventory Models
	3. Types of Costs in Inventory Models
	4. Economic Order Quantity (EOQ) Models
	5. Probabilistic Inventory Models
	6. Ordering Simulation Models
	7. Supply Chain Models
	8. Conclusion
10. Queueing Models
	1. Introduction
	2. Elements of Queueing Models
	3. The Exponential Distribution
	4. Important Queueing Relationships
	5. Analytical Steady-State Queueing Models
	6. Approximating Short-Run Behavior Analytically
	7. Queueing Simulation Models
	8. Conclusion
11. Regression and Forecasting Models
	1. Introduction
	2. Overview of Regression Models
	3. Simple Regression Models
	4. Multiple Regression Models
	5. Overview of Time Series Models
	6. Moving Averages Models
	7. Exponential Smoothing Models
	8. Conclusion

Online Chapters

1. Project Scheduling Models
	1. Introduction
	2. The Basic CPM Model
	3. Modeling Allocation of Resources
	4. Models with Uncertain Activity Times
	5. A Brief Look at Microsoft Project
	6. Conclusion
2. Multi-Objective Decision Making
	1. Introduction
	2. Goal Programming
	3. Pareto Optimality and Trade-off Curves
	4. The Analytic Hierarchy Process (AHP)
	5. Conclusion

Visit the [Cengage](http://www.cengage.com/decisionsciences/albright) site for our books.

Send e-mail to albright@indiana.edu

Albright is retired from the [Kelley School of Business, Indiana University, Bloomington](http://www.kelley.indiana.edu/) and now works as a consultant for [Palisade Corp](http://www.palisade.com/).

Back to [home page](file:///C%3A%5CUsers%5Cchris%5CDropbox%5CMy%20Books%5CWeb%20Site%5Cdefault.htm)

Updated: 1/13/2015