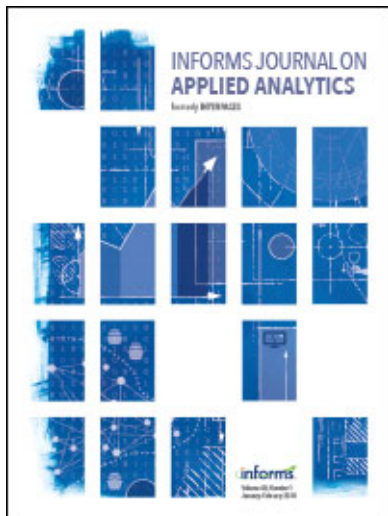




Interfaces

Publication details, including instructions for authors and subscription information:
<http://pubsonline.informs.org>

Book Reviews

Benjamin Lev,

To cite this article:

Benjamin Lev, (1990) Book Reviews. Interfaces 20(6):110-115. <https://doi.org/10.1287/inte.20.6.110>

Full terms and conditions of use: <https://pubsonline.informs.org/Publications/Librarians-Portal/PubsOnLine-Terms-and-Conditions>

This article may be used only for the purposes of research, teaching, and/or private study. Commercial use or systematic downloading (by robots or other automatic processes) is prohibited without explicit Publisher approval, unless otherwise noted. For more information, contact permissions@informs.org.

The Publisher does not warrant or guarantee the article's accuracy, completeness, merchantability, fitness for a particular purpose, or non-infringement. Descriptions of, or references to, products or publications, or inclusion of an advertisement in this article, neither constitutes nor implies a guarantee, endorsement, or support of claims made of that product, publication, or service.

© 1990 INFORMS

Please scroll down for article—it is on subsequent pages



With 12,500 members from nearly 90 countries, INFORMS is the largest international association of operations research (O.R.) and analytics professionals and students. INFORMS provides unique networking and learning opportunities for individual professionals, and organizations of all types and sizes, to better understand and use O.R. and analytics tools and methods to transform strategic visions and achieve better outcomes. For more information on INFORMS, its publications, membership, or meetings visit <http://www.informs.org>

Book Reviews

BENJAMIN LEV

School of Management
The University of Michigan-Dearborn
4901 Evergreen Road
Dearborn, Michigan 48128-1491

$$\beta \wedge \alpha \approx * \div \neg \beta \mu = \iota \rho \setminus + \sigma \cdot x \mu \omega \cdot \& \mu ? \lambda \uparrow \epsilon < \mu \cap \zeta \pi \wedge \rho$$

$$\beta \Sigma \wedge \div \lambda \pi \epsilon) \sigma \leq \lambda \approx + \circ \lambda \S \Sigma \lambda \Gamma \alpha \iota \epsilon \cdot \cap \iota \omega \phi \Delta \epsilon \cdot \beta \mu \div \setminus ? \rho \approx$$

The range of books reviewed is wide, covering theory and applications in operations research, statistics, econometrics, mathematics, computers, and information systems (no software is reviewed). In addition, we include books in other fields that emphasize technical applications. Publishers who wish to have their books and proceedings reviewed should send them to Benjamin Lev. We list the books and proceedings received; not all books received can be reviewed because space and time are limited. Those who would like to review books are urged to send me their names, addresses, and specific areas of expertise. We commission all reviews and do not accept unsolicited book reviews. Readers are encouraged to suggest books that might be reviewed or to ask publishers to send me copies of such books.

SAMSON, DANNY 1988, *Managerial Decision Analysis*, Richard D. Irwin, Homewood, Illinois, 743 pp., \$47.50.

This book attempts to compile what is known about all facets of decision analysis concerning managerial problems. The author sees decision analysis techniques as both a conceptual framework and a set of tools for dealing with complex problems and makes the usefulness of decision analysis clear. Samson's book is both a traditional classroom type of textbook and a computer-assisted instructional guide. The numerous problem exercises ending each

chapter are designed for manual or computer solution.

The book contains 15 chapters. Chapter 1 describes managerial problems and the decision-making process. Chapter 2 defines decision analysis as both a decision-making philosophy and set of procedures. Chapters 3 to 15 discuss individual aspects of decision analysis, including decision model structuring, probability assessment, multi-attribute utility functions, simulation, behavioral aspects of decision analysis, and decision support systems.

After covering basic probability theory,

Copyright © 1990, The Institute of Management Sciences
0091-2102/90/2006/0110\$01 25

INTERFACES 20: 6 November–December 1990 (pp. 110-115)

BOOK REVIEWS

Samson focuses on modeling and implementation issues in decision analysis intended to improve the quality of decisions. The book also discusses more recent developments, such as decision support systems and the analytic hierarchy process. The reader does not need extensive knowledge of mathematics. This book is fairly easy reading, and it is filled with an abundance of figures that enhance the verbal and mathematical descriptions.

Provided with the book is ARBORIST, a decision analysis software program to be run on IBM or compatible computers; it requires DOS 2.1 or higher. The software is designed to formulate and solve decision-tree problems. It is quite limited; it would have been nice if it had been designed to solve more kinds of problems.

This book as a whole is very useful and well written. It might be well suited for such courses as quantitative methods for business research or managerial decision making for either undergraduates or graduate students. In addition, it should prove valuable to both researchers and managers.

Ha Jin Hwang

Department of Management, College of Business, Mankato State University, Mankato, Minnesota 56001

HARMON, ROY AND PETERSON, LEROY 1990, *Reinventing the Factory: Productivity Breakthroughs in Manufacturing Today*, The Free Press, A Division of Macmillan Inc., New York, 303 pp., \$35.00.

As indicated by the title *Reinventing the Factory*, most of the concepts and techniques on productivity improvements that are discussed in this book are not new but have been known for many years among

industry practitioners. Some of the common ones include goal-oriented management, reduction of setup times and inventories, just-in-time, cell layout/modular layout, focused plants, and supplier program. However, this book makes its own unique contribution.

Many other books on productivity improvements are decorated with many catchwords or merely list successful stories of various companies that accomplished remarkable productivity improvements. But few provide a clear road map guiding you from a mediocre manufacturer suffering from low productivity to a superior manufacturer achieving high productivity. This book offers a nuts-and-bolts approach to myriad detailed improvements that, when taken together, make the difference between being a mediocre manufacturer and being a superior manufacturer.

The first three chapters of the book cover topics of primary importance to executive management: a management perspective on productivity and the profit motive, focused factory organization, and a plantwide plan. These chapters address global issues and long-term goals. The next four chapters are more specific and discuss concepts and techniques for improving productivity in assembly, machining, material/product storage, and changeover (reduction of setup time and costs). Chapter 9 provides a step-by-step approach to successfully launching and managing a productivity improvement project. The appendix lists more than 100 companies (giving their names, products, improvements achieved, and contact persons) that have implemented the type of productivity improvements defined in this book. Through-

out the book, the authors have included case examples from some of these companies that show how the concepts and techniques discussed were applied in the real world and what improvements were achieved.

The authors' shrewdness and experience as consultants are reflected in this book. They emphasize that the key to productivity improvements is not in lavish investment in automation but rather in continuing commitment by management, simplification of product and process design, and low-cost automation. They demonstrate the competitive leverage of their practical recommendations through numerous case examples.

There are a couple of minor flaws: First, some of the case examples (for instance, the Messier-Hispano-Bugatti project on p. 92 and Brunswick Corporation's pin plant project on p. 142) are treated too briefly to substantiate how the techniques being applied brought about such high productivity improvements. Second, such subjects as Conbon (Kanban) or cell layouts are treated redundantly.

I recommend this book to all plant managers and to professors or graduate students in the field of production management who are fed up with complex equations and proofs. This book also can be used as a good reference book for case study courses in business schools or industrial engineering. Students can be given case examples selected from this book and asked to provide their own solutions for productivity improvements. Later, they can compare their solutions with the ones discussed in this book. Most case study books (for example, Aggarwal and Khera [1979])

do not provide benchmark solutions against which students' solutions can be evaluated.

Reference

Aggarwal, R. and Khera, I. 1979, *Management Science: Cases and Applications*, Holden Day, San Francisco, California.

Heungsoon Felix Lee

Department of Industrial Engineering, Southern Illinois University-Edwardsville, Edwardsville, Illinois 62026-1802

HOOVER, STEWART V. AND PERRY, RONALD F. 1989, *Simulation: A Problem-Solving Approach*, Addison-Wesley Publishing Company, Reading, Massachusetts, 400 pp., \$43.96.

The objective of this book is to introduce the principles of discrete event simulation and its applications to undergraduate as well as graduate students in business, engineering, and computer science. In addition to simulation language primers for GPSS, SIMAN, and SIMSCRIPT, the book consists of four major parts: simulation in brief, modeling and simulation, building and validating simulation models, and the use of simulation models.

The text is organized into eleven chapters that cover the major subjects sought by readers in the area. The first part discusses the importance of simulation as a decision-making tool and the advantages and disadvantages of simulation analysis and introduces its basic elements. These elements are divided into six steps: problem formulation, data collection and analysis, model development, model verification and validation, model experimentation, and optimization and implementation of results. The presentation incorporates examples illustrating these elements and

BOOK REVIEWS

their physical meaning. These examples are practical and are drawn from today's environment.

The following chapters address model development and the different simulation languages. The authors' treatment of the subject matter in this part is commendable. They discuss simulation using FORTRAN, most of the popular simulation languages and their structures, and they compare analytical models and simulation results. I was pleased with both the level and the rigor of the analysis of the M/M/1 queuing model in chapter 5. The reader could see the birth-death equation analysis of such a system and its limited ability to depict transient state behavior.

The rest of the book covers data collection, different probability distributions, random number generators, and model verification and validation (different approaches are presented.) It competes very well with such other popular texts in the area as Payne [1982] and Taha [1988]. Moreover, the book introduces the use of simulation in systems optimization.

Although the authors' purpose is to discuss discrete event simulation, it would have been valuable to provide a section about simulation of continuous systems. Also, including answers for some selected problems could have been quite helpful to the reader.

The book meets its goals. It provides a comprehensive treatment of discrete event simulation at the introductory level well suited to students in their senior year or first graduate year as well as professionals in the field.

References

Payne, James 1982, *Introduction to Simulation*

Programming Techniques and Methods of Analysis, McGraw Hill, New York.

Taha, Hamdy 1988, *Simulation Modeling and Simnet*, Prentice Hall, Englewood Cliffs, New Jersey.

Layek Abdel-Malek

Department of Mechanical and Industrial Engineering, New Jersey Institute of Technology, University Heights, Newark, New Jersey 07102

TABUCANON, MARIO T. 1989, *Multiple Criteria Decision Making in Industry*, Elsevier, The Netherlands, 356 pp., \$117.00.

Tabucanon presents an in-depth discussion of multiple criteria decision making with illustrations of practical applications. Multiple criteria decision-making techniques are needed in many fields, such as production and operations management, finance, marketing, and project management, and to solve other management related problems of particular organizations. This book provides a perceptive overview of the basic concepts of MCDM as well as demonstrations of practical applications in both production and operations management and business management situations.

The first four chapters review the fundamentals and theories of MCDM, the techniques used in model building, and the procedures necessary to draw solutions from the models. This material should help readers to follow the detailed discussions in subsequent chapters. Chapters 5 through 7 present several applications of MCDM techniques, particularly in production management, business management, and other related areas. In Chapter 5, the author highlights applications of MCDM techniques in production management, giving examples in production planning

and scheduling, determining resource and product mix, and quality control. Chapter 6 focuses on applications in business management, such as manpower planning, financial planning, and marketing management. Chapter 7 deals with applications of MCDM techniques in other related fields, particularly focusing on project crashing, project selection, trade tariff arrangements, and bicriterion transportation models.

This book attempts to discuss a wide spectrum of MCDM models and applications in industry. It would have been nice if the author had included multiattribute utility theory (MAUT) and the analytic hierarchy process (AHP). Because of the book's theoretical nature, the reader needs a solid background in optimization and mathematical programming. This book is probably not suitable for an undergraduate curriculum. However, it would be a useful reference for graduate students and researchers working on MS/OR applications.

Ha Jin Hwang

Department of Management, College of Business, Mankato State University, Mankato, Minnesota 56001

MUMFORD, ENID AND MACDONALD, W. BRUCE 1989, *Xsel's Progress*, John Wiley and Sons, New York, 241 pp., \$44.95.

XSEL (the eXpert SELLing assistant) is a knowledge-based expert system designed to assist sales and manufacturing organizations in configuring computer systems from DEC's products. The authors describe the journey of generating and building this expert system at Digital Equipment Corporation. This book describes the whole process of system design and analysis of this

successful expert system.

The authors first discuss its design, who participated, and the company culture. They cover theories of system design, the importance of participation in system design, and innovation and culture at Digital Equipment Corporation. The second part of the book emphasizes the development of the XSEL system in the United States. It describes the technical development of XSEL, the problems and lessons to be learned from starting the design task and from the journey of design, the improvement and implementation of the system, and the acceptance and success of this system in the United States. In the third part of the book, the authors discuss the integration of this expert system into European countries. They include planning and selling XSEL in Europe, sales efforts throughout Europe, the establishment of the UK sales offices, and the XSEL pilot in Europe. The last part of this book discussed the lessons learned, and designing and managing philosophies. Finally, they cover implementation strategies in Europe.

Mumford and MacDonald uncover the various problems and difficulties encountered in system design and analysis. They point out that the successful management of the social processes that are an integral part of innovation and progress represent the real challenge (p. 235). Their emphasis on the social and human aspects of the system design process, in addition to its technical aspects, is a great contribution to this field. The introduction of the ETHICS (Effective Technical and Human Implementation of Computer-based Systems) method into the XSEL project promoted the efficiency of designing this system.

BOOK REVIEWS

This book would be a suitable reference book for a graduate-level systems design and analysis class. It could also be a good reference book for an AI/expert systems course if it covered the more technical aspects of this field. It certainly fulfils its primary objective, to recount the journey of an expert system. I recommend it as a valuable source book for systems designers and analysts who work in the artificial intelligence and expert systems fields.

David Chender Chou

Department of Computer Information Systems,
West Texas State University, WT Box
268, Canyon, Texas 79016

Books Received for Review

- Ansari A. and Modarress B. 1990, *Just-in-Time Purchasing*, The Free Press, New York, 162 pp., \$35.00.
- Barsoux, Jean-Louis and Lawrence, Peter 1990, *Management in France*, Cassell, London, 239 pp., \$37.95.
- Bell, Arthur H. 1990, *Mastering the Meeting Maze*, Addison-Wesley Publishing Company, Reading, Massachusetts, 186 pp., \$16.95.
- Dinsmore, Paul C. 1990, *Human Factors in Project Management*, AMACOM, New York, 257 pp., \$29.95.
- Droms, William G. 1990, *Finance and Accounting for Nonfinancial Managers*, third edition, Addison-Wesley Publishing Company, Reading, Massachusetts, 244 pp., \$20.14.
- Dyson, Robert G. 1990, *Strategic Planning: Models and Analytical Techniques*, John Wiley and Sons, New York, 313 pp., \$29.95.
- Eden, Dov 1990, *Pygmalion in Management, Productivity as a Self-Fulfilling Prophecy*, Lexington Books, Lexington, Massachusetts, 228 pp., \$34.95.
- Fligstein, Neil 1990, *The Transformation of Corporate Control*, Harvard University Press, Cambridge, Massachusetts, 391 pp., \$35.00.
- Hampden-Turner, Charles 1990, *Charting the Corporate Mind, Graphic Solutions to Business Conflicts*, The Free Press, New York, 240 pp., \$24.95.
- Harvey, Andrew C. 1990, *Forecasting, Structural Time Series Models and the Kalman Filter*, Cambridge University Press, New York, 554 pp., \$69.50.
- Hitt, William D. 1990, *Ethics and Leadership*, Battle Press, Columbus, Ohio, 249 pp., \$24.95.
- Hughes, Wayne P., Jr. 1989, *Military Modeling*, second edition, Military Operations Research Society, Alexandria, Virginia, 325 pp., \$22.00.
- Lincoln, James R. and Kalleberg, Arne L. 1990, *Culture, Control, and Commitment*, Cambridge University Press, New York, 291 pp., \$44.50.
- Millman, Gregory J. 1990, *The Floating Battlefield*, American Management Association, New York, 211 pp., \$24.95.
- Mills, Terence C. 1990, *Time Series Techniques for Economics*, Cambridge University Press, New York, 377 pp., \$59.50.
- Nielsen, Jakob 1990, *Hyper Text and Hyper Media*, Academic Press, Inc., Boston, Massachusetts, 263 pp., \$29.95.
- Prokopenko, Joseph 1987, *Productivity Management*, International Labour Office, Geneva, Switzerland, 287 pp., 40 Swiss francs.
- Rushing, Francis W. and Brown, Carole Ganz 1990, *Intellectual Property Rights in Science, Technology, and Economic Performance*, Westview Press, Inc., Boulder, Colorado, 354 pp., \$38.50.
- Sahin, Izzet 1990, *Regenerative Inventory Systems*, Springer-Verlag, New York, 175 pp., \$32.00.
- Schonberger, Richard J. 1990, *Building a Chain of Customers: Linking Business Functions to Create the World Class Company*, The Free Press, New York, 349 pp., \$29.95.
- Shamlin, Carolyn 1990, *The Other Side of Software*, second edition, AMACOM, New York, 178 pp., \$22.95.
- Skopec, Eric W. 1990, *Communicate for Success*, Addison-Wesley Publishing Company, Reading, Massachusetts, 196 pp., \$15.25.
- Spangenberg, John F. A. 1989, *Economies of Atmosphere*, Van Gorcum, The Netherlands, 248 pp., \$29.95.
- Srivastava, U. K.; Shevov, G. V.; and Sharma, S. C. 1989, *Quantitative Techniques for Managerial Decisions*, second edition, John Wiley and Sons, New York, 941 pp., \$31.95.
- Stanat, Ruth 1990, *The Intelligent Corporation*, American Management Association, New York, 270 pp., \$24.95.

Copyright 1990, by INFORMS, all rights reserved. Copyright of Interfaces is the property of INFORMS: Institute for Operations Research and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.