INTRODUCTION TO MANAGEMENT SCIENCE WITH SPREADSHEETS
William J. Stevenson and Ceyhun Ozgur,

Decision-making is central to human activity and as a consequence we are all decision-makers. However, "good" decision-making starts with a consecutive, purposeful, and strategic-thinking process. Management science (MS) or alternatively called as operations research (OR) is a field of study characterized by the use of mathematical and computer models to help make better decisions. Using tools and techniques from the fields of management, mathematics, information technology, engineering, and psychology, it is applied in virtually all areas of management. It is a particularly exciting and interesting field; exciting because it is having a dramatic impact on the profitability of numerous business organizations around the world and interesting because the methods used to do this are so ingenious.

This book gives a guided tour of the basic concepts as they apply to the analysis of management related decision problems. The book combines the market-leading writing and presentation skills of Professor Bill Stevenson with integrated and thorough Excel modeling from Professor Ceyhun Ozgur.

Quantitative techniques often scare away management students and practicing managers as if they are complex subjects, which they are forced to learn. Taking this general apprehension of students and managers into account, this clearly written text tries to demystify the subject, making it easy for comprehension. As managers have to make quick decisions, the basic aim of which is to increase the bottom line of the company, this book aims at providing them working knowledge of operations research and its applications. Practitioners who need a comprehensive reference and in particular MBA students can benefit from using it.

The new wave in the teaching of management science clearly is using spreadsheets as a primary medium of instruction. Both business students and managers live with spreadsheets, so they provide a comfortable and enjoyable learning environment. Microsoft Excel, which is a modern spreadsheet software readily available, has been used in this book. The focus is on those methods of decision analysis which have proven most useful in a variety of business problems. The content includes mathematical modeling, constrained optimization, and decision analysis under conditions of certainty and uncertainty.

The book contains 14 chapters organized into three parts. Part I introduces management science and use of spreadsheets and covers forecasting. Part 2 presents deterministic decision-making models including linear programming, sensitivity analysis with linear programming, transportation, assignment, transshipment problems, and network, nonlinear, and multicriteria models, i.e., goal programming. Part 3 is devoted to probabilistic decision models including decision theory, Markov

Manoj University, Journal of Business and Management Studies, Vol. 1, No. 2, October 2006
analysis, waiting line, and simulation models. The book has been planned very well and the contents have been arranged methodologically. Each chapter is designed to be modular, so the book can be tailored to the needs of a course. Additionally, each section of the book is written to be as self-contained as possible; instructors can be extremely flexible in designing courses.

The book avoids excessive theoretical exercises in favour of practical word problems. The exposition takes great gain by means of several solved examples in each chapter to gain the reader step-by-step through the most complex topics. Built into each chapter, tools including solved examples, solved problems, chapter learning objectives, summaries, glossaries, and problems and cases enhance the text's lessons. All examples, problems, and cases have been tested with Professor Olgun's students to ensure applicability to the course, relevance to the real world, and support for student learning of the subject. The concepts and methods are carefully explained in a light and informal style, and the logical flow and format support student study. Excel screen shots along with complete Excel cell formulas are featured in virtually every example and solved problems providing more detail and better reference support for beginners. The authors have provided answers to most odd-numbered problems in the answer appendix, which will be equally helpful for students and teachers. The glossary will also prove helpful in understanding the terms related to the topic.

The only limitation of the book is that some of the important topics relevant to the present business scenario have been left out. Data envelopment analysis (DEA), occasionally called frontier analysis, is becoming an increasingly popular management tool that can be used for evaluating the relative efficiency of decision-making units in organizations; it should be incorporated in a separate chapter. Similarly, dynamic programming is an important mathematical technique, dealing with the recursive optimization of multistage decision process, is missing. Even though the book's numerous problems range in level, with many based on published applications of operations research and management science, it would have been better if the authors had included more engaging case studies that illustrate applications to industry and emerging technologies. Only one case study at the end of each chapter is not enough. Moreover, the chapter on forecasting seems to be odd one out. I do not find any reason for keeping this chapter along with operations research topics, since most of the courses on management science do not include forecasting. Preferably this chapter should be dropped in the new edition.

As a whole, the book is very satisfactory and can serve as a source of information for students to study operations research as a core subject at the postgraduate level. Use of illustrations, flow charts, and case studies to explain operations research techniques have indeed enhanced the quality of the book. By all means, the authors have made a commendable attempt particularly aiming students who may not have significant mathematics training and only the most elementary experience with Excel. Thus, this text is fit for students of management discipline who usually come from diverse educational backgrounds. The authors deserve to be congratulated for this useful book in the field of management science.

Shard Saxena
Faculty, Institute of Management, Nirma University, Ahmedabad