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THE PRINCIPLES AND APPLICATIONS OF DECISION ANALYSIS

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As it is well known "decision analysis results from combining the fields of systems analysis and statistical decision theory". The present book represents a collective research effort of scientists who primarely were working at Stanford University which has been a center for the intelectual development of decision analysis and the catalyst for a variety of applications. The book is an excelent reference work to those interested in understanding applying and extending the framework of decision analysis. It containts published and unpublished works, which are articulated in an unitary manner so to be accesible to a wide variety of readers.

I did follow with great interest over the last fifteen years the Howard-Matheson research profile in decision analysis. One can remark the engineering-economic approach to the framework of decision investigation they created. It is a special consistency in the methodology is used to choose among alternatives when one is faced with uncertain propositions. And this is completely convincing reading the above book which introduces a large variety of applications from management decisions and technological systems to health and safety decision analysis.

Also the book represents a contribution of over 30 scientists in the field, it is of special interest to emphasize the unity of the notations and the coherency of the problem solving cycle.

The work is collected in two volumes: volume one is dedicated to a general collection of papers in the field of decision analysis. It contains mainly two chapters, one which introduces to the reader the problematique of decision analysis (e.g. the evolution, the science of

decision-making, the use of such techniques in systems engineering) and the second one dedicated to a large variety of applications (e.g. investment and strategic planning, research and development, social policy). This volume is devoted to a general readership and introduces applications which could attract solving many potential decision situations.

The second volume is designed as a professional collection of papers which are included in four chapters. The selection of works devoted to health and safety deals with very sensitive problems such as on making life and death decisions, the value of life and nuclear design, the design of hazardous products.

Advanced theoretical work deals with information value theory, value of information lotteries, the economic value of analysis and computation bayesian decision models, risk-sensitive dynamic probabilistic decision systems.

A special chapter is devoted to the subjective aspect of the decision process and includes the problem of judgment under uncertainty, decisions under risk, the psychology of choice.

It is clear that this last volume is devoted to professional students and higly educated specialists in decisions analysis.

A list of thesis in decision analysis at Stanford University Department of Engineering-Economic Systems is finally presented.

The book is of an excelent theoretical and applied standard and one can easily say that represents a large amount of decades x man incorporated.

A large fun of problems are included from the ethics of decision analysis to the use of decision trees and influence diagrams.

The editors of the present book developed earlier a smaller version namely "Readings in Decision Analysis" (Stanford Research Institute, Menlo Park, Ca, 1976). The actual version is of a considerable difference and emphasizes the state of decision analysis in the '80.

It is of great interest to a decision-maker, either an engineer, a biologist, an architect or a physicist to have a proper perception and understanding on how to make decisions, what decision-analysis is all about. And Howard-Matheson book is worth reading and useful to try it at the individual or organizational decision level.

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