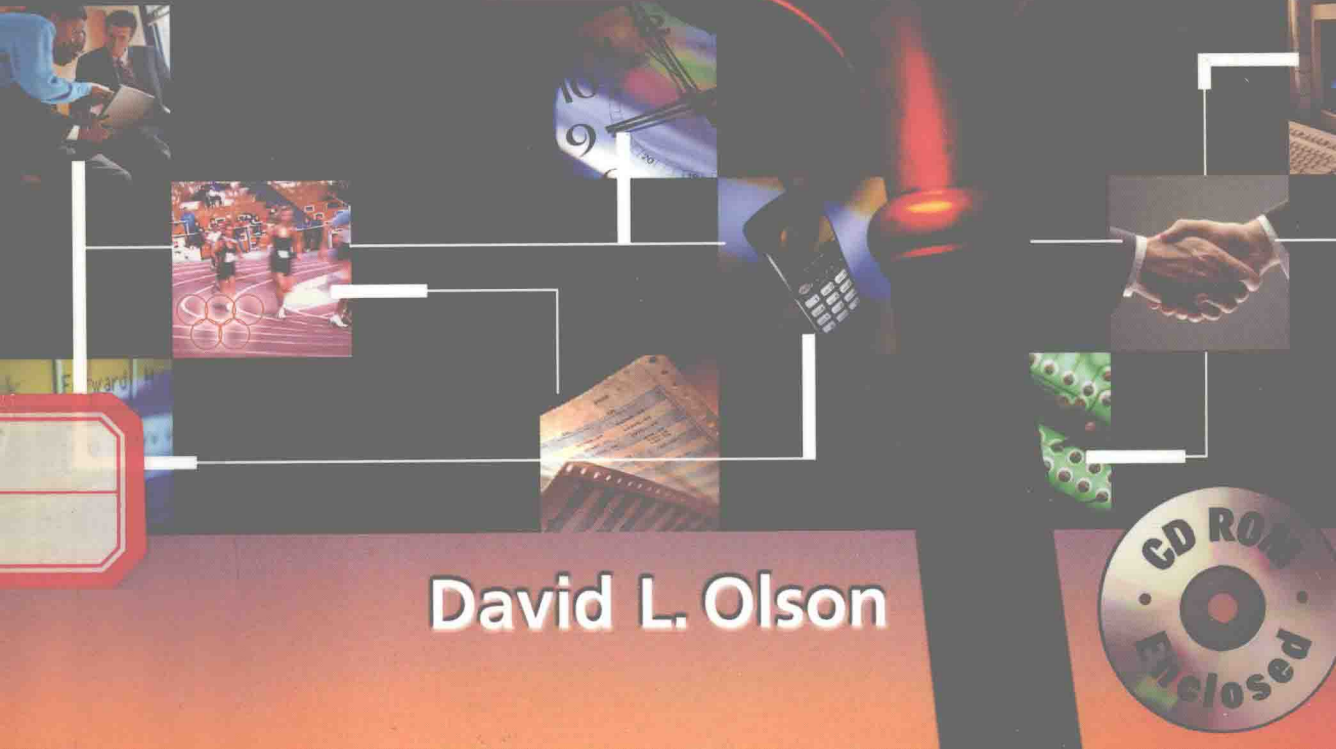


Introduction to **Information Systems Project Management**



David L. Olson

Introduction to Information Systems Project Management

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Texas A&M University, College Station, Texas



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About the Author

David L. Olson is Lowry Mays Professor of Business in the Department of Information and Operations Management at Texas A&M University. He received his PhD in Business from the University of Nebraska in 1981. He has been at Texas A&M University since then, promoted to full professor in 1995. He has published research in more than 50 refereed journals, primarily on the topic of multiple objective decision making. He teaches in the management science, management information systems, and operations management areas. He has authored the book *Decision Aids for Selection Problems*, and co-authored the books *Decision Support Models and Expert Systems*, *Introduction to Management Science*, *Introduction to Simulation and Risk Analysis*, *Business Statistics: Quality Information for Decision Analysis*, and *Statistics, Decision Analysis, and Decision Modeling*. He has made more than 80 presentations at international and national conferences on research topics. He is a member of the Decision Sciences Institute, the Institute for Operations Research and Management Sciences, and the Multiple Criteria Decision Making Society. He has coordinated the Decision Sciences Institute Dissertation Competition, Innovative Education Competition, chaired the Doctoral Affairs Committee, served twice as nationally elected vice president, and as National Program Chair. He has received a Research Fellow Award from the College of Business and Graduate School of Business at Texas A&M University, and he has held the Business Analysis Faculty Excellence Fellowship for two years. He is a Fellow of the Decision Sciences Institute.

Preface

Project management is one of the fastest growing career fields in business today. Most of the growth in this field is in the information systems area, where there are widespread reports about most projects being late, many over budget, and all-too-often not satisfying design specifications. This book is about information systems project management, although the principles apply to projects in any field. Many chapters demonstrate current practice taken from published reports about project management.

The need to trade off time, cost, and quality is encountered throughout the book. Three factors consistently cited in published studies as factors related to project success are top management support, user involvement, and clear project objective statements. These three factors are emphasized, but other factors are presented as well.

An introductory chapter discusses project features in general. The systems perspective provides a useful framework for project analysis. The systems view is a concept useful for better understanding project purposes. Systems theory is important in project management because of the unintended consequences often encountered in projects as a result of complex interrelationships of system components. By viewing projects as systems, some of these unintended consequences may be anticipated, and prepared for.

Part I discusses two processes involved in the initial project definition stage. Chapter 2 discusses issues concerning the adoption of proposed projects. Practice in the commercial field is reviewed. A number of quantitative methods are demonstrated, including a detailed demonstration of one company's method in Appendix 2A. Chapter 3 discusses aspects of requirements definition—a more complete study of what resources would be required to complete projects that have passed the approval stage. Risk analysis at the initial stage of project development is re-

viewed, along with the use of the systems failure method to reduce risk by anticipating problems.

The planning stage involves specific identification of how projects are going to be accomplished and is discussed in Part II. Chapter 4 discusses standards and methodologies, and different types of information projects. Chapter 5 reviews project estimation practice. Some of the quantitative methods used are demonstrated.

In Part III, scheduling techniques sort out project complexity, considering the interrelated nature of project activities. Chapter 6 presents and demonstrates deterministic critical path methods and discusses resource leveling and constraining. Chapter 7 deals with probabilistic aspects of project scheduling, with tools to assess risk of project completion times.

Part IV deals with project implementation. Alternative forms of organization are discussed in Chapter 8, focusing on those that have successfully been applied to project management. The abilities of various alternative organizational forms to deal with project uncertainty are discussed. Project implementation issues are examined in Chapter 9, including detailed discussion of critical success factors. Chapter 10 discusses other project control features and means of assessing project success. Techniques to deal with a variety of risks involved in software project development are reviewed.

The Appendix provides a very basic introduction to *Microsoft Project*, a leading commercial software product for support of project planning and management. Project management software continues to advance rapidly, and more detailed description would be outdated by publication. The intent of the Appendix is not to make the reader an expert, but rather to allow the reader to start working with the software, an extremely useful tool for project planning as well as communicating plans to others. Problems using *Microsoft Project* are included in Chapters 3, 4, 6, 7, 9, and 10.

Each chapter includes some suggested problems that could be used in a course. Field trip ideas are included in Chapters 2 through 5. There is sufficient material for a three-hour credit course. Project planning, as emphasized in the book, involves high levels of uncertainty, and rarely do projects proceed according to plan. The book provides a view of projects as systems, along with tools to make project planning and implementation more successful.

Professor Olson would like to thank his colleagues: David Paradice and Ahmed Shabana. Also, all the reviewers: Michael Godfrey—Indiana State University; Raymond Crepeau—Indiana University Purdue University; Richard Irving—York University; Francois Bergeron—Universite Laval; Edward Pascal—University of Ottawa; William Moylan—Lawrence Technical University; R. Anthony Inman—Louisiana Technical University; William Sherrard—San Diego State University; Satish Mehra—Memphis State University; Theodore Klastorin—University of Washington; and Wade Shaw—Florida Tech.

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Main Ideas Discussed

- Projects as unique activities with a definable purpose
- Project management, or getting a new complex activity accomplished
- Project success
- Critical success factors in project management
- Key competing project dimensions of cost, time, and quality

Today almost every organization gets involved in many projects. One reason projects are so important is the fast pace of change; another is the more specialized nature of modern business. Many of these projects involve information systems, a distinctive type of project. Firms have to try to stay close to the cutting edge to harness the power of computers in almost every aspect of business. Large accounting firms have enlarged their information systems consulting operations, almost all of which involves information systems projects. This means that there are more and more unique activities drawing people together from diverse locations and diverse organizations with diverse, specialized skills.

Like other projects, information systems projects involve output from a variety of sources. Projects come in all shapes and sizes. One of the largest, most recent projects involved a major airport hub, utilizing the latest in technology. The Denver International Airport is an impressive accomplishment. But it could be viewed as a failure from a strict project management viewpoint. It is a success in