



HAROLD KERZNER

PROJECT MANAGEMENT

TWELFTH EDITION

**A SYSTEMS APPROACH TO PLANNING,
SCHEDULING, AND CONTROLLING**

WILEY

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HAROLD KERZNER, PhD, is Senior Executive Director for Project Management at the International Institute for Learning, Inc. (IIL), a global learning solutions company offering professional training and consulting services worldwide. Dr. Kerzner’s profound effect on the project management industry inspired IIL to establish, in coordination with the Project Management Institute (PMI), the Kerzner International Project Manager of the Year Award, which is presented to a distinguished PMP® credential holder or global equivalent each year.

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*A Systems Approach to
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Controlling*

TWELFTH EDITION

HAROLD KERZNER, Ph.D.

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PROJECT

MANAGEMENT

*To
my wife,
Jo Ellyn,
for her more than thirty years
of unending love, devotion,
and encouragement to continue
my writing of project
management books*

Project management has evolved from a management philosophy restricted to a few functional areas and regarded as something nice to have to an enterprise project management system affecting every functional unit of the company. Simply stated, project management has evolved into a business process rather than merely a project management process. More and more companies are now regarding project management as being mandatory for the survival of the firm. Organizations that were opponents of project management are now advocates. Management educators of the past, who preached that project management could not work and would be just another fad, are now staunch supporters. Project management is here to stay. Colleges and universities are now offering undergraduate and graduate degrees in project management.

This book is addressed not only to those undergraduate and graduate students who wish to improve upon their project management skills but also to those functional managers and upper-level executives who serve as project sponsors and must provide continuous support for projects. During the past several years, management's knowledge and understanding of project management has matured to the point where almost every company is using project management in one form or another. These companies have come to the realization that project management and productivity are related, and that we are now managing our business as though it is a series of projects. Project management coursework is now consuming more of training budgets than ever before.

General reference is provided in the text to engineers. However, the reader should not consider project management as strictly engineering-related. The engineering examples are the result of the fact that project management first appeared in the engineering disciplines, and we should be willing to learn from their mistakes. Project management now resides in every profession, including

information systems, healthcare, consulting, pharmaceutical, banks, and government agencies.

The text can be used for both undergraduate and graduate courses in business, information systems, and engineering. The structure of the text is based upon my belief that project management is much more behavioral than quantitative since projects are managed by people rather than tools. The first seven chapters are part of the basic core of knowledge necessary to understand project management, specifically topics related to PMI's "Talent Triangle." Chapters 8 through 10 deal with the support functions and describe factors for predicting success and management support. It may seem strange that ten chapters on organizational behavior and structuring are needed prior to the "hard-core" chapters of planning, scheduling, and controlling. These first ten chapters are needed to understand the cultural environment for all projects and systems. These chapters are necessary for the reader to understand the difficulties in achieving cross-functional cooperation on projects where team members are working on multiple projects concurrently and why the people involved, all of whom may have different backgrounds, cannot simply be forged into a cohesive work unit without friction. Chapters 11 through 20 are more of the quantitative chapters on planning, scheduling, cost control, estimating, contracting (and procurement), and quality. Chapter 21 focuses on some of the more advanced topics.

The changes that were made in the twelfth edition include:

- Updated section on the Introduction to Project Management
- Updated section on Competing Constraints
- New section on the Talent Triangle
- New section on Entry-Level Project Management
- New section on Technology-Based Projects
- Updated section on the Many Faces of Project Success
- New section on Converting Methodologies to Frameworks
- New section on the Causes of Project Failure
- New section on Degrees of Project Success and Failure
- Updated section on Knowledge Management and Data Warehouses
- Updated section on Project Management Intellectual Property
- New section on Benefits Harvesting and Cultural Change
- New section on Transformational Project Management Leadership
- Updated section on Managing Mega Projects
- Updated section on Agile Project Management
- New section on Agile and Adaptive Project Management Cultures
- Updated section on Multinational Project Management Sponsorship
- New section on Preparing a Project Business Case
- Updated section on Validating the Project's Assumptions
- Updated section on Validating the Project's Objectives
- New section on Life-Cycle Milestones
- New section on the Project Management Office
- New section on Project Portfolio Management

- Updated section on Best Practices
- Updated section on Resource Leveling Issues

The text contains case studies, multiple choice questions, and discussion questions. There is also a separate companion book of cases (*Project Management Case Studies*, fifth edition) that provides additional real-world examples. Some of the new case studies include in the case book are:

Case Study	Description
Disney (A) Imagineering Project Management	Discusses some of the different skill sets needed to be an Imagineering PM
Disney (B) Imagineering in Action: The Haunted Mansion	Discusses the challenges with evolving scope on a project
Disney (C) Theme Parks and Enterprise Environmental Factors	Discusses how important an understanding of the enterprise environmental factors are and how they can impact project success
Disney (D) The Globalization of Disney	Discusses the challenges facing the use of project management on a global scale
Disney (E) Hong Kong Ocean Park: Competing Against Disney	Discusses how one company competed against Disney by expanding the project's scope
Olympics (A) Managing Olympic Projects	Discusses how the enterprise environmental factors impact Olympic projects
Olympics (B) Olympics, Project Management and PMI's Code of Ethics and Professional Responsibility	Discusses the complexity of abiding by PMI's Code of Conduct and Professional Responsibility on some Olympic projects
Olympics (C) Feeding the Olympic Athletes	Discusses the complexities (including quality control) for feeding 23,000 Olympians, coaches and staff members
Olympics (D) Health and Safety Risks at Olympic Events	Discusses the health and safety risks when of allowing athletes to compete in environments that have known health risks
Tradeoffs (A), (B)	Discusses how the introduction of competing constraints mandated additional tradeoffs and the challenges the company faced
The Project Management Audit	Discusses the need for occasional audits on a project and what happens executives are displeased with the results
The Executive Director	Discusses how a newly appointed executive director in a government agency played the political game to prevent being blamed for any wrong-doing

The twelfth edition text, the *PMBOK® Guide* and the book of cases are ideal as self-study tools for the Project Management Institute's PMP® Certification Exam. Because of this, there are tables of cross references at the end of each chapter in the textbook detailing the sections from the book of cases and the Guide to the Project Management Body of Knowledge (*PMBOK® Guide*) that apply to that

chapter's content. The left-hand margin of the pages in the text has side bars that identify the cross-listing of the material on that page to the appropriate section(s) of the *PMBOK® Guide*. At the end of most of the chapters is a section on study tips for the PMP® exam.

This textbook is currently used in the college market, in the reference market, and for studying for the PMP® Certification Exam. Therefore, to satisfy the needs of all markets, a compromise had to be reached on how much of the text would be aligned to the *PMBOK® Guide* and how much new material would be included without doubling the size of the text. Some colleges and universities use the textbook to teach project management fundamentals without reference to the *PMBOK® Guide*. The text does not contain all of the material necessary to support each section or process in the *PMBOK® Guide*. Therefore, to study for the PMP® Certification Exam, the *PMBOK® Guide* must also be used together with this text. The text covers material for almost all of the *PMBOK® Guide* knowledge areas but not necessarily in the depth that appears in the *PMBOK® Guide*.

An instructor's manual is available only to college and university faculty members by contacting your local Wiley sales representative or by visiting the Wiley website at www.wiley.com/kerzner. Access to the instructor's material and supporting material can be provided only through John Wiley & Sons Publishers, not the author.

One-, two-, and three-day seminars on project management and the PMP® Certification Training using the text are offered by contacting Lori Milhaven, Executive Vice President, the International Institute for Learning, at 800-325-1533, extension 5121 (e-mail address: lori.milhaven@iil.com).

The problems and case studies at the ends of the chapters cover a variety of industries. Almost all of the case studies are real-world situations taken from my consulting practice or from research. Feedback from my colleagues who are using the text has provided me with fruitful criticism, most of which has been incorporated into the twelfth edition.

The majority of the articles on project management that have become classics have been referenced in the textbook throughout the first eleven chapters. These articles were the basis for many of the modern developments in project management and are therefore identified throughout the text.

Many colleagues provided valuable criticism. In particular, I am indebted to those industrial/government training managers whose dedication and commitment to quality project management education and training have led to valuable changes in this and previous editions. In particular, I wish to thank Frank Saladis, PMP, for his constructive comments, recommendations, and assistance with the mapping of the text to the *PMBOK® Guide* as well as recommended changes to many of the chapters. I am indebted to Dr. Edmund Conrow, PMP, for more than a decade of assistance with the preparation of the risk management chapters in all of my texts. I am also indebted to Dr. Rene Rendon for his review and recommendations for changes to the chapter on Contract Management.

To the management team and employees of the International Institute for Learning, thank you all for twenty-five years of never-ending encouragement, support, and assistance with all of my project management research and writings.

Harold Kerzner
The International Institute for Learning
2017

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