SUCCESSFUL
PROJECT
MANAGEMENT
SECOND EDITION

GIDO & CLEMENTS

Successful Project Management

Second Edition

Jack Gido
Penn State University

James P. Clements
Towson University

THOMSON

SOUTH-WESTERN

Successful Project Management, 2e

Jack Gido and James P. Clements

Editor-in-Chief:
Jack W. Calhoun

Vice President/Team Director:
Melissa S. Acuña

Senior Acquisitions Editor:
Charles E. McCormick, Jr.

Developmental Editor:
Taney H. Wilkins

Marketing Manager:
Larry Qualls

Production Editor:
Salvatore N. Versetto

Manufacturing Coordinator:
Diane Lohman

Compositor:
Bookcomp, Inc./Nighthawk Design

Printer:
R.R. Donnelley & Sons Company
Willard Manufacturing Division

Design Project Manager:
Christy Carr

Cover Designer:
Ramsdell Design, Cincinnati

Cover Photographer/Illustrator:
Ramsdell Design, Cincinnati

Photography Manager:
Deanna Ettinger

Photo Researcher:
Darren Wright

Media Developmental Editor:
Christine A. Wittmer

Media Production Editor:
Amy Wilson

Successful Project Management

To Rosemary, Steve, Jeff, Wendy, Matthew, and Alex for all
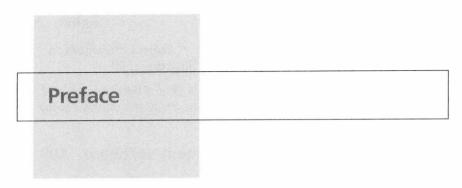the joy that you bring

J.G.

To my loving wife, Beth, for always making me smile

To our four wonderful children—Tyler, Hannah, Maggie,
and Grace—for all the happiness you bring to my life

and

To my mother and father, for all your love and support

J.P.C.

Preface

We'll start digging from this side of the mountain. You and your gang start digging from the other side. When we meet in the middle, we will have made a tunnel. And if we don't meet, we will have made two tunnels!

OUR APPROACH

Project management is more than merely parceling out work assignments to individuals and hoping that they will somehow accomplish a desired result. In fact, projects that could have been successful often fail because of such take-it-for-granted approaches. Individuals need hard information and real skills to work successfully in a project environment and to accomplish project objectives. *Successful Project Management* was written to equip its users with both—by explaining concepts and techniques and by using numerous examples to show how they can be skillfully applied.

Although the focus of the book is squarely on the practical things readers absolutely need to know to thrive in project environments, the book does not forsake objective learning; it simply challenges readers to think critically about project management principles and to apply them within the context of the real world. We capture lessons learned from years of managing projects, teaching project management, and writing extensively about it.

Successful Project Management is intended for students as well as for working professionals and volunteers. The book is designed to present the essential skills readers need to make effective contributions and to have an immediate impact on the accomplishment of projects in which

they are involved. Thus, it supports business and industry's lifelong learning programs, which develop and train employees to succeed on interdisciplinary and cross-functional teams, and it sends students into the workforce with marketable skills.

Successful Project Management is written for *everyone* involved in projects, not just project managers. Projects with good or even great project managers still may not succeed, as the best efforts of all involved are essential. All the people on the project team must have the knowledge and skills to work effectively together in a project environment. People do not become project managers by reading books; they become project managers by first being effective project team members. This book provides the foundation individuals need to be effective members of project teams and thereby boosts everyone's potential to rise to the challenge of managing teams and projects.

The book is written in an easy-to-understand, straightforward style with a minimum number of technical terms. Readers acquire project management terminology gradually as they read the text. The text does not use complex mathematical theories or algorithms to describe scheduling techniques, nor does it include highly technical projects as examples. An overtly technical approach can create a barrier to learning for individuals who lack deep understanding of advanced mathematics or technical backgrounds. Our book includes a broad range of easily understood examples based on projects encountered in everyday situations. For example, real-world applications include conducting a market survey, building an information system, and organizing a town festival. The mathematics is purposely kept simple. Separate appendixes are provided for those readers who want more in-depth coverage of probability considerations and time–cost trade-offs.

DISTINCTIVE FEATURES

Successful Project Management has many distinctive features to enhance learning and build skills.

Real-World Vignettes   Each chapter contains two real-world vignettes that illustrate the topics in the chapter. These vignettes not only reinforce chapter concepts, but also draw readers into the discussion and pique their interest in applications of project management.

Chapter Outlines   Each chapter opens with an outline of the key topics that will be covered. These outlines clarify expectations and allow readers to see the flow of information at a glance.

Examples and Applications   Real-world examples and applications are diffused throughout this text, ensuring that specific, relevant, and compelling illustrations are never far from view.

Graphics and Figures   Numerous exhibits appear in the text to illustrate important points and project management tools.

Reinforce Your Learning Questions   Brief questions appear alongside the text to ensure that readers retain key concepts and that

the fundamentals are not ignored. These in-the-margin questions "pop up" throughout the text to provide positive reinforcement and serve as an in-text study guide.

Critical Success Factors   Each chapter contains a concise list of the important factors that project managers and team members need to know in order to help make their projects a success.

Chapter Summaries   At the end of each chapter is a concise summary of the material presented in the chapter—a final distillation of core concepts.

Review Questions and Problems   Each chapter has a set of questions and problems that first test and then apply chapter concepts.

World Wide Web Exercises   Each chapter has a set of exercises that ask readers to search Web sites for information on various project management topics. These exercises invite learners to explore real-world applications of project management in an on-line, hands-on manner. An end-of-book appendix provides Web addresses of all the project management sites mentioned in this text.

Case Studies   End-of-chapter case studies provide critical-thinking scenarios for either individual or group analysis. Variety in case format ensures that all learners can relate to the problems presented. The cases are fun and are intended to spark interesting debates. By fostering discussion of various viewpoints, the cases provide opportunities for participants to expand their thinking about how to operate successfully when differing views arise in the work environment. Thus students gain valuable insight into what teamwork is all about.

Project Management Software   An appendix discusses the use of personal computer-based project management software as a tool in the planning and control of projects. Common features of project management software packages are discussed, along with selection criteria.

Microsoft Project   New examples of how to use and apply Microsoft Project are included in Part 2 of this book. A plethora of screen displays, inputs, and reports are included.

Project Management Organizations   A list of project management organizations worldwide is provided in an appendix for those individuals who want to contact these organizations about professional development, access to periodicals and other publications, or career opportunities.

ORGANIZATION

Successful Project Management is divided into three parts:

- Part 1, The Life of a Project, covers project management concepts, needs identification, proposed solutions, and implementing the project.

- Part 2, Project Planning and Control, covers planning, scheduling, schedule control, resource considerations, and cost planning and performance.
- Part 3, People: The Key to Project Success, discusses the project manager, the project team, types of project organizations, and project communication and documentation.

Part 1 consists of four chapters. Chapter 1, Project Management Concepts, covers the definition of a project and its attributes, the key constraints within which a project must be managed, how a project is "born," the life of a project, the steps in the project management process, examples of projects, and the benefits of project management. Chapter 2, Needs Identification, includes identifying needs and selecting projects, developing a request for proposal, and the proposal solicitation process. Chapter 3, Proposed Solutions, deals with proposal marketing strategies, the bid/no-bid decision, development of winning proposals, the proposal preparation process, pricing considerations, evaluation of proposals, and types of contracts. Chapter 4, The Project, discusses the elements involved in establishing a project plan, the steps in the project control process, and actions that should be taken when a project is terminated.

Part 2 contains five chapters. Chapter 5, Planning, discusses clearly defining the project objective, developing a work breakdown structure, assigning responsibilities and defining detailed activities, developing a network diagram, and utilizing the systems development life cycle for information system development projects. Chapter 6, Scheduling, covers estimating activity durations, calculating earliest and latest start and finish times for each activity, determining slack, and identifying the critical path of activities. This chapter also includes a special appendix on probability considerations. Chapter 7, Schedule Control, deals with the steps in the project control process, the effects of actual schedule performance on the project schedule, incorporating project changes into the schedule, calculating an updated project schedule, and approaches to controlling the project schedule. This chapter also includes a special appendix on the time–cost trade-off. Chapter 8, Resource Considerations, includes taking resource constraints into account when developing a project plan, determining the planned resource utilization for a project, leveling the use of resources within the required time frame for a project, and determining the shortest project schedule when the number of available resources is limited. Chapter 9, Cost Planning and Performance, covers items to be considered when estimating the project cost, preparation of a baseline budget, cumulating actual costs, determining the earned value of work actually performed, analyzing cost performance, calculating a forecast for the project cost at completion, approaches to controlling costs, and managing cash flow.

Part 3 includes four chapters. Chapter 10, The Project Manager, discusses the responsibilities of the project manager, the skills needed to manage projects successfully and ways to develop those skills, approaches to effective delegation, and how the project manager can manage and control changes to the project. Chapter 11, The Project Team, covers the development and growth of teams, characteristics of

effective project teams and barriers to effectiveness, team building, sources of conflict during the project and approaches to handling conflict, problem solving, and effective time management. Chapter 12, Project Communication and Documentation, includes personal communications, effective listening, types of project meetings and suggestions for productive meetings, formal project presentations and suggestions for effective presentations, project reports and suggestions for preparing useful reports, and project documentation and keeping track of changes. Chapter 13, Types of Project Organizations, deals with the characteristics, advantages, and disadvantages of the functional, project, and matrix organization structures.

The book includes a special appendix devoted to project management software, which discusses the common features of project management software packages, criteria for selecting a software package, and advantages of and concerns about using project management software. Other appendixes provide a list of project management organizations, project management Web sites, and project management acronyms. Finally, the book includes references for each chapter, answers to the Reinforce Your Learning questions, and a glossary.

SUPPORT MATERIALS

A comprehensive set of support materials is available for *Successful Project Management* on an instructor's resource CD (IR-CD). These materials are designed to guide the instructor and to minimize class preparation time.

The IR-CD includes:

- a sample syllabus
- a set of learning objectives for each chapter
- suggested teaching methods for each chapter
- lecture outlines for each chapter
- answers to the end-of-chapter questions
- a comprehensive test bank of true/false, multiple-choice, and problem-solving exercises for each chapter
- PowerPoint slides for each chapter

ACKNOWLEDGMENTS

We would like to acknowledge the individuals who helped with the publication of this book. Jason Oakman did a meticulous job in preparing the graphics, and Rebecca Jay and Brendan Buckler were wonderful in tracking down Web sites and references. We want to thank all the members of the project team at South-Western College Publishing, who helped turn our vision into reality and contributed to the successful completion of this project. Special recognition goes to Taney Wilkins, Developmental Editor, Sam Versetto, Production Editor, and Charles McCormick Jr., Senior Acquisitions Editor, and all the folks at Bookcomp, Inc. We would also like to recognize the important contributions of the reviewers of both editions of this book:

There are those who make things happen,
those who let things happen, and
those who wonder what happened.

We hope that *Successful Project Management* will help readers/learners have an enjoyable, exciting, and successful experience as they grow through their future project endeavors and that it will be the catalyst for helping them make things happen.

Jack Gido
James P. Clements

Jack Gido is director of PENNTAP, the Pennsylvania Technical Assistance Program, at Penn State University. He previously held dual positions as manager of the Industrial Technology Extension Service for the New York Science and Technology Foundation and as deputy director of the Industrial Effectiveness Program at the New York State Department of Economic Development. His 20 years of industrial management experience includes management of productivity improvement and manufacturing technology programs for General Electric and Mechanical Technology, Inc. He received a B.S. in electrical engineering from Penn State University and an M.B.A. from the University of Pittsburgh. He has authored two other books on project management and has taught workshops on project management.

James P. Clements is the executive director of the Center for Applied Information Technology at Towson University and the Robert W. Deutsch Distinguished Professor of Information Technology. He also serves as adjunct professor of Information Systems and Technology for the Whiting School of Engineering at Johns Hopkins University. He holds an M.S. and a Ph.D. in operations analysis from the University of Maryland–Baltimore County, an M.S. in computer science from Johns Hopkins University, and a B.S. in computer science from the University of Maryland–Baltimore County. He has published and presented more than 50 papers on various project management and information systems topics. During the past 15 years, he has served as a consultant to numerous industry and business groups. Dr. Clements is also a four-time winner of the Faculty Member of the Year Award given by students at Towson University.

Brief Contents

Contents