Project Management

A Socio-Technical Approach

2024 Release

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PROJECT MANAGEMENT: A SOCIO-TECHNICAL APPROACH, 2024 RELEASE

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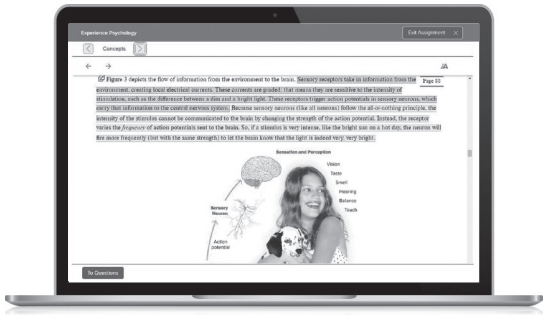

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> Jordan Cunningham, a student at *Eastern Washington University*

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"Man's mind, once stretched by a new idea, never regains its original dimensions."

Oliver Wendell Holmes, Jr.

To my family, who have always encircled me with love and encouragement—my parents (Samuel and Charlotte), my wife (Mary), my sons and their wives (Kevin and Dawn, Robert and Sally), and their children (Ryan, Carly, Connor, and Lauren).

C.F.G.

"The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man."

Bernard Shaw, Man and Superman

To Ann, whose love and support have brought out the best in me. To our girls Mary, Rachel, and Tor-Tor for the joy and pride they give me. And to our grandkids, Mr. B, Livvy, Jasper Jones!, Ya Ya, Juni, and Calliwumpas, whose future depends upon effective project management. Finally, to my muse, Neil—walk on!

E.W.L.

"You can do anything you set your mind to."

Benjamin Franklin

To my parents (Penphim and Ophas) for their unconditional love, their support, their faith in me, and allowing me to choose the direction of my life. To my Thai and U.S. teachers, instructors, professors, and mentors, I am forever indebted. Thanks to all of you for instilling within me not only knowledge but also motivation to achieve and always do my best. The examples all of you set are with me as a guide forever.

P.S.

Preface

Our motivation in writing this text continues to be to provide a realistic, socio-technical view of project management. In the past, textbooks on project management focused almost exclusively on the tools and processes used to manage projects and not the human dimension. This baffled us, since people, not tools, complete projects! While we firmly believe that mastering tools and processes is essential to successful project management, we also believe that the effectiveness of these tools and methods is shaped and determined by the prevailing culture of the organization and interpersonal dynamics of the people involved. Thus, we try to provide a holistic view that focuses on both the technical and social dimensions and how they interact to determine the fate of projects.

Audience

This text is written for a wide audience. It covers concepts and skills that are used by managers to propose, plan, budget, manage and lead project teams to successful completions of their projects. The text should prove useful to students and prospective project managers in helping them understand why organizations have developed a formal project management process to gain a competitive advantage. Readers will find the concepts and techniques discussed in enough detail to be immediately useful in new-project situations. Practicing project managers will find the text to be a valuable guide and reference when dealing with typical problems that arise in the course of a project. Managers will also find the text useful in understanding the role of projects in the missions of their organizations. Analysts will find the text useful in helping to explain the data needed for project implementation as well as the operations of inherited or purchased software.

Members of the Project Management Institute will find the text is well structured to meet the needs of those wishing to prepare for PMP (Project Management Professional) or CAPM (Certified Associate in Project Management) certification exams. The text has in-depth coverage of the most critical topics found in PMI's *Project Management Body of Knowledge* (PMBOK) and its supplement guidebook, *Process Groups: A Practice Guide*. People at all levels in the organization assigned to work on projects will find the text useful not only in providing them with a rationale for the use of project management processes but also because of the insights they will gain into how to enhance their contributions to project success.

Our emphasis is not only on how the management process works but also, and more importantly, on *why* it works. The concepts, principles, and techniques are universally applicable. That is, the text does not specialize by industry type or project scope. Instead, the text is written for the individual who will be required to manage a variety of projects in a variety of organizational settings. In the case of some small projects, a few of the steps of the techniques can be omitted, but the conceptual framework applies to all organizations in which projects are important to survival. The approach can be used in pure project organizations such as construction, research organizations, and engineering consultancy firms. At the same time, this approach will benefit organizations that carry out many small projects while the daily effort of delivering products or services continues.

Content

In this and other editions, we continue to try to resist the forces that engender scope creep and focus only on essential tools and concepts that are being used in the real world. We have been guided by feedback from reviewers, practitioners, teachers, and students. Some changes are minor and incremental, designed to clarify and reduce confusion. Other changes are significant. They represent new developments in the field or better ways of teaching project management principles. Below are major changes to the ninth edition (2024 Release).

- The title of the text has been changed to ***Project Management: A Socio-Technical Approach.*** This more accurately captures the emphasis not only on the techniques associated with project management but also on what ultimately determines success—people and how they use these techniques to complete projects. All material has been reviewed and revised based on the latest edition of *Project Management Body of Knowledge* (PMBOK), Seventh Edition, 2020. Note that the newest edition represents a *major shift* in PMBOK toward focusing not only on terms and processes but also behavioral issues associated with managing projects. This has been the focus of this text from the beginning.
- The impact of COVID-19 pandemic on project execution is discussed throughout the text.
- Some of the Snapshots from Practice have been expanded to more fully cover the examples.
- New student exercises and cases have been added to chapters.
- The Snapshot from Practice boxes feature a number of new examples of project management in action.
- The Instructor's Manual contains a listing of current YouTube videos that correspond to key concepts and Snapshots from Practice.

Overall the text addresses the major questions and challenges the authors have encountered over their 80 combined years of teaching project management and consulting with practicing project managers in domestic and foreign environments. These questions include the following: How should projects be prioritized? What factors contribute to project failure or success? How do project managers orchestrate the complex network of relationships involving vendors, subcontractors, project team members, senior management, functional managers, and customers that affect project success? What project management system can be set up to gain some measure of control? How are projects managed when the customers are not sure what they want? How do project managers work with people from foreign cultures?

Project managers must deal with all these concerns to be effective. All of these issues and problems represent linkages to a socio-technical project management perspective. This text focuses not only project management methodology but also on the behavioral skills and cultural awareness necessary to be successful. The chapter content of the text has been placed within an overall framework that integrates these topics in a holistic manner. Cases and snapshots are included from the experiences of practicing managers. The future for project managers is exciting. Careers will be built on successfully managing projects.

Student Learning Aids

Student resources include study outlines, online quizzes, PowerPoint slides, videos, Microsoft Project Video Tutorials, and web links. These can be found in Connect.

Acknowledgments

We would like to thank Scott Bailey for his work on the Connect assessments and Test Bank, and Ronny Richards for his quality assurance reviews.

Next, it is important to note that the text includes contributions from numerous students, colleagues, friends, and managers gleaned from professional conversations. We want them to know we sincerely appreciate their counsel and suggestions. Almost every exercise, case, and example in the text is drawn from a real-world project. Special thanks to managers who graciously shared their current project as ideas for exercises, subjects for cases, and examples for the text. John A. Drexler, Jim Moran, John Sloan, Pat Taylor, and John Wold, whose work is printed, are gratefully acknowledged. Special gratitude is due Robert Breitbarth of Interact Management, who shared invaluable insights on prioritizing projects. University students and managers deserve special accolades for identifying problems with earlier drafts of the text and exercises.

We are indebted to the reviewers of past editions who shared our commitment to elevating the instruction of project management. We thank you for your many thoughtful suggestions and for making our book better. Of course, we accept responsibility for the final version of the text.

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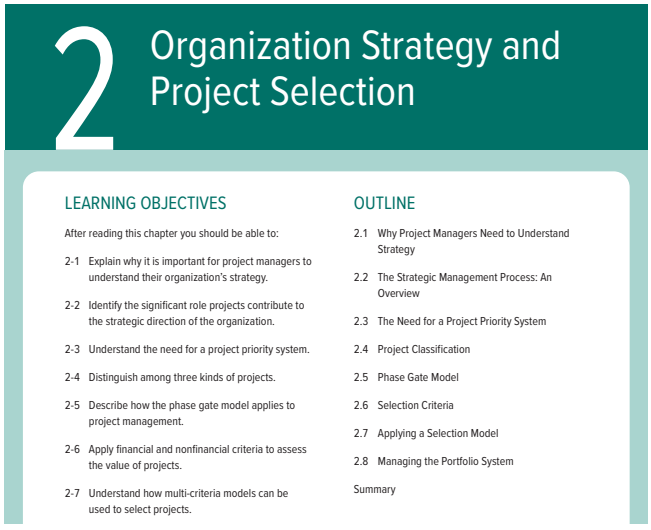
Erik W. Larson

Clifford F. Gray

Pinyarat Sirisomboonsuk

Guided Tour


2 Organization Strategy and Project Selection

LEARNING OBJECTIVES

After reading this chapter you should be able to:

2-1 Explain why it is important for project managers to understand their organization's strategy.

2-2 Identify the significant role projects contribute to the strategic direction of the organization.

2-3 Understand the need for a project priority system.

2-4 Distinguish among three kinds of projects.

2-5 Describe how the phase gate model applies to project management.

2-6 Apply financial and nonfinancial criteria to assess the value of projects.

2-7 Understand how multi-criteria models can be used to select projects.

OUTLINE

2.1 Why Project Managers Need to Understand Strategy

2.2 The Strategic Management Process: An Overview

2.3 The Need for a Project Priority System

2.4 Project Classification

2.5 Phase Gate Model

2.6 Selection Criteria

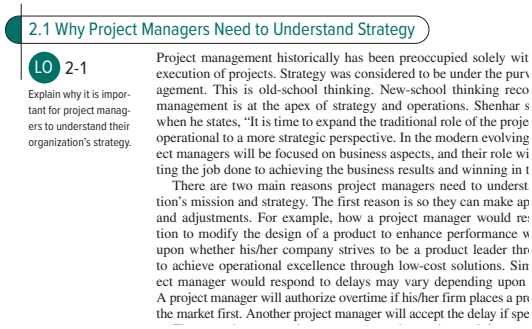
2.7 Applying a Selection Model

2.8 Managing the Portfolio System

Summary

Established Learning Objectives

Learning objectives are listed both at the beginning of each chapter and are called out as marginal elements throughout the narrative in each chapter.


2.1 Why Project Managers Need to Understand Strategy

LO 2-1

Explain why it is important for project managers to understand their organization's strategy.

Project management historically has been preoccupied solely wit execution of projects. Strategy was considered to be under the purv agement. This is old-school thinking. New-school thinking reco management is at the apex of strategy and operations. Shenhar s when he states, "It is time to expand the traditional role of the proje operational to a more strategic perspective. In the modern evolving ect managers will be focused on business aspects, and their role wi ting the job done to achieving the business results and winning in t

There are two main reasons project managers need to underst tion's mission and strategy. The first reason is so they can make ap and adjustments. For example, how a project manager would re tion to modify the design of a product to enhance performance w upon whether his/her company strives to be a product leader thr to achieve operational excellence through low-cost solutions. Sin ect manager would respond to delays may vary depending upon A project manager will authorize overtime if his/her firm places a pr the market first. Another project manager will accept the delay if spe

End-of-Chapter Content

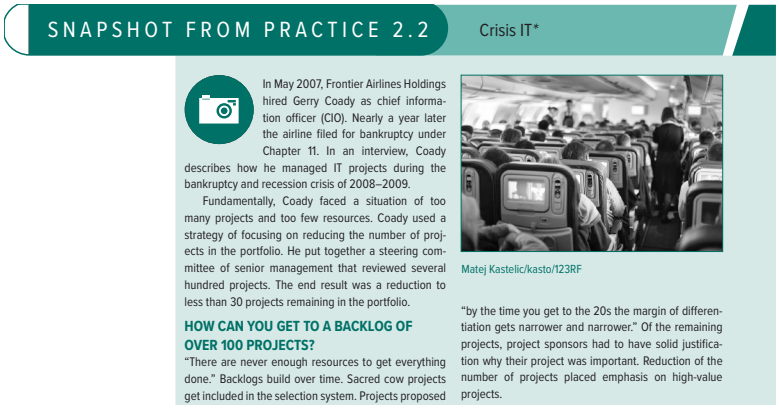
Both static and algorithmic end-of-chapter content, including Review Questions and Exercises, are assignable in Connect.

SmartBook

The SmartBook has been updated with new highlights and probes for optimal student learning.

Snapshots

The Snapshot from Practice boxes have been updated to include a number of new examples of project management in action. New discussion questions based on the Snapshots have been added to the end-of-chapter material and are assignable in Connect.


SNAPSHOT FROM PRACTICE 2.2 Crisis IT*

In May 2007, Frontier Airlines Holdings hired Gerry Coady as chief information officer (CIO). Nearly a year later the airline filed for bankruptcy under Chapter 11. In an interview, Coady describes how he managed IT projects during the bankruptcy and recession crisis of 2008–2009.

Fundamentally, Coady faced a situation of too many projects and too few resources. Coady used a strategy of focusing on reducing the number of projects in the portfolio. He put together a steering committee of senior management that reviewed several hundred projects. The end result was a reduction to less than 30 projects remaining in the portfolio.

HOW CAN YOU GET TO A BACKLOG OF OVER 100 PROJECTS?

"There are never enough resources to get everything done." Backlogs build over time. Sacred cow projects get included in the selection system. Projects proposed

Matej Kastelic/kasto/123RF

"by the time you get to the 20s the margin of differentiation gets narrower and narrower." Of the remaining projects, project sponsors had to have solid justification why their project was important. Reduction of the number of projects placed emphasis on high-value projects.

New and Updated Cases

Included at the end of each chapter are between one and five cases that demonstrate key ideas from the text and help students understand how project management comes into play in the real world. Cases have been reviewed and updated across the eighth edition.

Instructor and Student Resources

Instructors and students can access all of the supplementary resources for the eighth edition within Connect.

Note to Student

You will find the content of this text highly practical, relevant, and current. The concepts discussed are relatively simple and intuitive. As you study each chapter we suggest you try to grasp not only how things work but also why things work. You are encouraged to use the text as a handbook as you move through the three levels of competency:

I know.

I can do.

I can adapt to new situations.

The field of project management is growing in importance and at an exponential rate. It is nearly impossible to imagine a future management career that does not include management of projects. Resumes of managers will soon be primarily a description of their participation in and contributions to projects.

Good luck on your journey through the text and on your future projects.

Chapter-by-Chapter Revisions for the 2024 Release Edition

Chapter 1: Modern Project Management

- New Snapshot: PMI's 50 Most Influential Projects: 1969–2019.
- New Appendix: A Guide to the Project Management Body of Knowledge (PMBOK Guide) Seventh Edition and Its Ancillaries.

Chapter 2: Organization Strategy and Project Selection

- Revised Snapshot: IBM's Watson Project
- New Snapshot: Is This the End of Airbnb?
- New segment on behavioral biases that affect project selection.
- Snapshot: Project Code Names revised.

Chapter 3: Organization: Structure and Culture

- New Snapshot: *2021 PMO of the Year* Moffitt Cancer Center.

Chapter 4: Defining the Project

- Requirements is now discussed under defining a project.
- New Snapshot: The Bradley Fighting Vehicle.

Chapter 5: Estimating Project Times and Costs

- New segment on four aspects of estimating.

Chapter 6: Developing a Project Schedule

- Snapshot: Concurrent Engineering (Fast Tracking) updated.
- A new project network exercise.

Chapter 7: Managing Risk

- An example of how pandemic created an opportunity for project is included in the text.
- Minor revisions made to tables to provide better clarity.

Chapter 8: Scheduling Resources and Costs

- New case: *Midnight Sun II Project.*

Chapter 9: Reducing Project Duration

- Snapshot 9.1: *Smartphone* Wars updated.
- New Snapshot: *Operation Warp Speed.*

Chapter 10: Being an Effective Project Manager

- Reliance on virtual communication methods is discussed.
- New Snapshot: *Fighting Zoom Fatigue*.

Chapter 11: Managing Project Teams

- Managing Virtual Teams section has been updated and expanded.
- Managing hybrid teams where people work part time at home is discussed.

Chapter 12: Outsourcing: Managing Interorganizational Relations

- New case: *Umdanso Project*.

Chapter 13: Progress and Performance Measurement and Evaluation

- Snapshot: *Guidelines for Setting Milestones* has been revised.
- New Snapshot: *Oregon State University's Regional Coastal Research Vessels (RCRV) Project*.

Chapter 14: Project Closure

- Discussion of project retrospectives has been updated and revised.
- New Research Highlight: *Why Is It Difficult to Pull the Plug on Projects?*

Chapter 15: Agile Project Management

- Introduction revised.
- Discussion of hybrid project management is expanded.

Chapter 16: International Projects

- New Snapshot: *Avoiding Communication Catastrophes When Emailing Across Cultures*.

Appendix Two: Computer Project Exercises

- Updated two computer exercises.

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