

Fifth Edition

Erik W. Larson • Clifford F. Gray

PROJECT MANAGEMENT

项目管理教程

双语教学版

王立文 徐涛 张扬 译注



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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.

*"We must not cease from exploration and the end of all
exploring will be to arrive where we begin and to know
the place for the first time."*

T. S. Eliot

To Ann whose love and support has brought out
the best in me. And, to our girls Mary, Rachel, and
Tor-Tor for the joy and pride they give me. Finally,
to my muse, Neil, for the faith and inspiration he
instills.

E.W.L

Preface

Since you are reading this text, you have made a decision that learning more about project management will have a positive impact for you. You are absolutely right! Project management has become an organization-wide core competency; nearly every manager, regardless of discipline is involved in managing one or more projects. This text is designed to provide project managers and prospective project managers with the knowledge and skills that are transferable across industries and countries.

Our motivation for writing this text was to provide students with a holistic, integrative view of project management. A holistic view focuses on how projects contribute to the strategic goals of the organization. The linkages for integration include the process of selecting projects that best support the strategy of a particular organization and that in turn can be supported by the technical and managerial processes made available by the organization to bring projects to completion. The goals for prospective project managers are to understand the role of a project in their organizations and to master the project management tools, techniques, and interpersonal skills necessary to orchestrate projects from start to finish.

The role of projects in organizations is receiving increasing attention. Projects are the major tool for implementing and achieving the strategic goals of the organization. In the face of intense, worldwide competition, many organizations have reorganized around a philosophy of innovation, renewal, and organizational learning to survive. This philosophy suggests an organization that is flexible and project driven. Project management has developed to the point where it is a professional discipline having its own body of knowledge and skills. Today it is nearly impossible to imagine anyone at any level in the organization who would not benefit from some degree of expertise in the process of managing projects.

Audience

This text is written for a wide audience. It covers concepts and skills that are used by managers to propose, plan, secure resources, budget, 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). 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 tools and techniques but also because of the insights they will gain on how to enhance their contributions to project success.

Our emphasis is not only on how the management process works, but 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 different 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 latest edition of the book, we have responded to feedback received from both students and teachers, which is deeply appreciated. As a result of the this feedback, the following changes have been made to the fifth edition:

- Restructuring of text to include four supplemental chapters that cover topics beyond the project management core.
- Inclusion of a supplemental chapter on agile project management which has enjoyed success on new product and software development projects.
- Terms and concepts have been updated to be consistent with the fourth edition of the *Project Management Body of Knowledge* (2008).
- Revised Chapter 14 to include project retrospectives. Chapters 2, 4, 6, 7, and 12, have been updated.
- New student exercises and cases have been added to most chapters.
- Answers to selected exercises are now available in Appendix 1
- A third major computer exercise has been added to the Appendix 2;
- The “Snapshot from Practice” boxes feature a number of new examples of project management in action as well as new research highlights that continue to promote practical application of project management.

Overall the text addresses the major questions and issues the authors have encountered over their 60 combined years of teaching project management and consulting with practicing project managers in domestic and foreign environments. The following questions represent the issues and problems practicing project managers find consuming most of their effort: What is the strategic role of projects in contemporary organizations? How are projects prioritized? What organizational and managerial styles will improve chances of project 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 factors contribute to the development of a high-performance project team? What project management system can be set

up to gain some measure of control? How do managers prepare for a new international project in a foreign culture? How does one pursue a career in project management?

Project managers must deal with all these concerns to be effective. All of these issues and problems represent linkages to an integrative project management view. 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 appears to be promising. Careers will be determined by success in managing projects.

Student Learning Aids

The text Web site (www.mhhe.com/larsongray5e) includes study outlines, online quizzes, PowerPoint slides, videos, Microsoft Project Video Tutorials and Web links. The trial version of Microsoft Project software is included on its own CD-ROM free with the text.

Acknowledgments

We would like to thank Richard Bruce, Ottawa University for updating the Test Bank and Online Quizzes; Charlie Cook, University of West Alabama for revising the PowerPoint slides; Oliver F. Lehmann for providing access to PMBOK study questions; and Mink for accuracy checking the text and Instructor's Resource Manual content.

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. Shlomo Cohen, 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. The reviewers include Paul S. Allen, Rice University; Denis F. Cioffi, George Washington University; Joseph D. DeVoss, DeVry University; Edward J. Glantz, Pennsylvania State University; Michael Godfrey, University of Wisconsin–Oshkosh; Robert Key, University of Phoenix; Dennis Krumwiede, Idaho State University; Nicholas C. Petruzzi, University of Illinois–Urbana/Champaign; William R. Sherrard, San Diego State University; S. Narayan Bodapati, Southern Illinois University at Edwardsville; Warren J. Boe, University of Iowa; Burton Dean, San Jose State University; Kwasi Amoako-Gyampah, University of North Carolina–Greensboro; Owen P. Hall, Pepperdine University; Bruce C. Hartman, University of Arizona; Richard Irving, York University; Robert T. Jones, DePaul University; Richard L. Luebbe, Miami University of Ohio; William Moylan, Lawrence Technological College of Business; Edward Pascal, University of Ottawa; James H. Patterson, Indiana University; Art Rogers, City University; Christy Strbiak, U.S. Air Force

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In the fifth edition we continue to commit to improving the text content and improving instruction of project management. We are grateful to those reviewers who provided helpful critiques and insights on the fourth edition, which helped us prepare this revision. The reviewers for the fifth edition include. Gregory Anderson, Weber State University; Dana Bachman, Colorado Christian University; Alan Cannon, University of Texas, Arlington; Susan Cholette, San Francisco State; Michael Ensby, Clarkson University; Charles Franz, University of Missouri, Columbia; Raouf Ghattas, DeVry University; Robert Groff, Westwood College; Raffael Guidone, New York City College of Technology; George Kenyon, Lamar University; Elias Konwufine, Keiser University; Rafael Landaeta, Old Dominion University; Muhammad Obeidat, Southern Polytechnic State University; Linda Rose, Westwood College; Oya Tukel, Cleveland State University; and Mahmoud Watad, William Paterson University. 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.

In addition, we would like to thank our colleagues in the College of Business at Oregon State University for their support and help in completing this project. In particular, we recognize Ray Brooks, Jim Moran and Ping-Hung Hsieh for their helpful advice and suggestions. We also wish to thank the many students who helped us at different stages of this project, most notably Neil Young, Rebecca Keepers, Katherine Knox, Dat Nguyen, Lacey McNeely and Amanda Bosworth. Mary Gray deserves special credit for editing and working under tight deadlines on earlier editions. Special thanks go to Pinyarat Sirisomboonsuk for her help in preparing the last two editions.

Finally, we want to extend our thanks to all the people at McGraw-Hill/Irwin for their efforts and support. First, we would like to thank Dick Hercher for continuing to champion and provide editorial direction and guidance, and Gail Korosa, who took over management of the book's development fifth edition. And we would also like to thank Denise Showers, Carol Blelski, Mary Sander, Jeremy Cheshareck, Grey Bates, and Harvey Yep for managing the final production, design, supplement, and media phases of the fifth edition.

Erik W. Larson

Clifford F. Gray

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 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.

Project management is both people and technical oriented. Project management involves understanding the cause-effect relationships and interactions among the sociotechnical dimensions of projects. Improved competency in these dimensions will greatly enhance your competitive edge as a project manager.

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. Résumés of managers will soon be primarily a description of the individual's participation in and contributions to projects.

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

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