KATHY SCHWALBE

INFORMATION TECHNOLOGY PROJECT MANAGEMENT 8e

INFORMATION TECHNOLOGY PROJECT MANAGEMENT

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INFORMATION TECHNOLOGY PROJECT MANAGEMENT

Eighth Edition

Kathy Schwalbe, Ph.D., PMP
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For Dan, Anne, Bobby, and Scott

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PREFACE

The future of many organizations depends on their ability to harness the power of information technology, and good project managers continue to be in high demand. Colleges have responded to this need by establishing courses in project management and making them part of the information technology, management, engineering, and other curricula. Corporations are investing in continuing education to help develop and deepen the effectiveness of project managers and project teams. This text provides a much-needed framework for teaching courses in project management, especially those that emphasize managing information technology projects. The first seven editions of this text were extremely well received by people in academia and the workplace. The Eighth Edition builds on the strengths of the previous editions and adds new, important information and features.

It's impossible to read a newspaper, magazine, or web page without hearing about the impact of information technology on our society. Information is traveling faster and being shared by more people than ever before. You can buy just about anything online, surf the web on a mobile phone, or use a wireless Internet connection just about anywhere. Companies have linked their systems together to help them fill orders on time and better serve their customers. Software companies are continually developing new products to help streamline our work and get better results. When technology works well, it is almost invisible. But did it ever occur to you to ask, "Who makes these complex technologies and systems happen?"

Because you're reading this text, you must have an interest in the "behind-the-scenes" aspects of technology. If I've done my job well, you'll begin to see the many innovations society is currently enjoying as the result of thousands of successful information technology projects. In this text, you'll read about IT projects in organizations around the world that went well, including the National University Hospital in Singapore, which used critical chain scheduling to decrease patient admission times by more than 50 percent; retailer Zulily, one of a growing number of organizations developing software in-house to meet their need for speed and innovation; Dell's green computing project that saves energy and millions of dollars; Google's driverless car project, striving to reduce traffic accidents and save lives; and many more.

Of course, not all projects are successful. Factors such as time, money, and unrealistic expectations, among many others, can sabotage a promising effort if it is not properly managed. In this text, you'll also learn from the mistakes made on many projects that were not successful.

I have written this book in an effort to educate you, tomorrow's project managers, about what will help make a project succeed—and what can make it fail. You'll also see how projects are used in everyday media, such as television and film, and how companies use best practices in project management. Many readers tell me how much they enjoy reading these real-world examples in the What Went Right?, What

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Went Wrong?, Media Snapshot, and Best Practice features. As practitioners know, there is no "one size fits all" solution to managing projects. By seeing how different organizations in different industries successfully implement project management, you can help your organization do the same.

Although project management has been an established field for many years, managing information technology projects requires ideas and information that go beyond standard practices. For example, many information technology projects fail because of a lack of executive support, poor user involvement, and unclear business objectives. This book includes many suggestions for dealing with these issues. New technologies can also aid in managing information technology projects, and examples of using software to assist in project management are included throughout the book.

Information Technology Project Management, Eighth Edition, is the only textbook to apply all 10 project management knowledge areas and all five process groups to information technology projects. As you will learn, the project management knowledge areas are project integration, scope, time, cost, quality, human resource, communications, risk, procurement, and stakeholder management. The five process groups are initiating, planning, executing, monitoring and controlling, and closing.

This text builds on the *PMBOK® Guide, Fifth Edition,* an American National Standard, to provide a solid framework and context for managing information technology projects. It also includes an appendix, Guide to Using Microsoft Project 2013, that many readers find invaluable.

In addition to the physical text, several resources are available online. Additional case studies, including the one from the Seventh Edition, Manage Your Health, are available, as well as over fifty template files that students can use to create their own project management documents. The author's personal website (*www.kathyschwalbe.com* or *www.pmtexts.com*) also provides additional, up-to-date resources and links related to the field of project management, including topics like Agile, PMP and CAPM certification, simulation software, leadership, mind mapping, sample student projects, and more.

Information Technology Project Management, Eighth Edition, provides practical lessons in project management for students and practitioners alike. By weaving together theory and practice, this text presents an understandable, integrated view of the many concepts, skills, tools, and techniques of information technology project management. The comprehensive design of the text provides a strong foundation for students and practitioners in project management.

NEW TO THE EIGHTH EDITION

Building on the success of the previous editions, *Information Technology Project Management, Eighth Edition,* introduces a uniquely effective combination of features. The main changes in the Eighth Edition include the following:

- A new running case at the end of Chapters 4–13, the ten knowledge area chapters. Instructors often like to assign running cases to reinforce application of key concepts. The "Manage Your Health" running case from the Seventh Edition is provided online along with several additional running cases.

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- Updated and additional exercises to enhance student learning and give instructors more options for in-class or out-of-class work.
- Additional content on important topics like leadership and agile.
- New examples that highlight IT project management at work in real, newsworthy companies. These timely, relevant examples help illustrate the real-world applications and impact of key project management concepts. They also serve as mini-case stories, suitable for class discussion.
- Many recent studies of IT project management and related topics. Summaries of classic, updated, and the most current research throughout the text build a rich context for essential IT project management concepts.
- User feedback is incorporated. Based on feedback from reviewers, students, instructors, practitioners, and translators, you'll see a variety of changes that help clarify information. (This book has been translated into Chinese, Japanese, Russian, and Czech.)

Many people have been practicing some form of project management with little or no formal study in this area. New books and articles are written each year as we discover more about the field and as project management software continues to advance. Because the project management field and the technology industry change rapidly, you cannot assume that what worked even a few years ago is still the best approach today. This text provides up-to-date information on how good project management and effective use of software can help you manage projects, especially information technology projects. Distinct features of this text include its relationship to the Project Management Body of Knowledge, its value in preparing for certification, its detailed guide for using Microsoft Project 2013, its inclusion of running case studies and online templates, its emphasis on IT projects, its coverage of several software tools that assist with project management, and its companion website.

Based on *PMBOK® Guide, Fifth Edition* and Preparing for Certification

The Project Management Institute (PMI) created the Guide to the Project Management Body of Knowledge (the *PMBOK® Guide*) as a framework and starting point for understanding project management. It includes an introduction to project management, brief descriptions of all 10 project management knowledge areas, and a glossary of terms. The *PMBOK® Guide* is, however, just that—a guide. This text uses the *PMBOK® Guide, Fifth Edition* (2013) as a foundation, but goes beyond it by providing more details, discussing the how and why of the knowledge areas, highlighting additional topics, and providing a real-world context for IT project management. This text is an excellent resource for preparing for PMI certifications, such as the Project Management Professional (PMP) and Certified Associate in Project Management (CAPM).

Detailed Guide to Microsoft Project 2013

Software has become a critical tool for helping project managers and their teams effectively manage information technology projects. *Information Technology Project Management, Eighth Edition,* includes a detailed guide in Appendix A for using the leading project management software on the market—Microsoft Project 2013. Examples that use Project 2013 and other software tools are integrated throughout the text. Appendix A, Guide to Using Microsoft Project 2013, teaches you in a systematic way

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to use this powerful software to help in project scope, time, cost, human resource, and communications management.

Emphasis on IT Projects and Use of Software Tools

Most of the examples of projects in this text are based on IT projects. Research studies and advice are specific to managing IT projects, and include expanded information on agile. Each of the knowledge area chapters includes examples as well as a separate section describing how software can be used to assist in managing that knowledge area. For example, Chapter 5, Project Scope Management, includes examples of using mind maps created with MindView Business software to create a work breakdown structure. Chapter 11, Project Risk Management, shows an example of using Monte Carlo simulation software to help quantify project risk.

Exercises, Running Cases, Templates, and Sample Documents

Based on feedback from readers, the Eighth Edition continues to provide challenging exercises and running cases to help students apply concepts in each chapter. The text includes more than 50 templates and examples of real project documents that students can use to help them apply their skills to their own projects.

Students can access all of these materials for free through the companion CourseMate product, and for an additional fee, students who purchase the CourseMate product will gain access to a complete, interactive e-book, crossword puzzles, and additional study tools.

ACCESSING THE COURSEMATE SITE

To access the CourseMate site, open a web browser and go to *www.cengagebrain.com*. Search by ISBN, author name, or title, and click Create My Account to begin the registration process.

ORGANIZATION AND CONTENT

Information Technology Project Management, Eighth Edition, is organized into three main sections, which provide a framework for project management, a detailed description of each project management knowledge area, and an appendix of practical information for applying project management. The first three chapters form the first section, which introduces the project management framework and sets the stage for the remaining chapters.

Chapters 4 through 13 form the second section, which describes each of the project management knowledge areas—project integration, scope, time, cost, quality, human resource, communications, risk, procurement, and stakeholder management—in the context of information technology projects. An entire chapter is dedicated to each knowledge area. Each of these chapters includes sections that map to their major processes as described in the *PMBOK® Guide, Fifth Edition.* For example, the chapter on project quality management includes sections on planning quality management, performing quality assurance, and controlling quality. Additional sections highlight other important concepts related to each knowledge area, such as Six Sigma, testing,

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maturity models, and using software to assist in project quality management. Each chapter also includes detailed examples of key project management tools and techniques as applied to information technology projects. For example, the chapter on project integration management includes samples of various project-selection techniques, such as net present value analyses, ROI calculations, payback analyses, and weighted scoring models. The project scope management chapter includes a sample project charter, a project scope statement, and several work breakdown structures for information technology projects.

Appendix A forms the third section of the text, which provides practical information to help you learn how to use the most popular project management software available today. By following the detailed, step-by-step guide in Appendix A, which includes more than 60 screen illustrations, you will learn how to use Project 2013. You can download a free trial from the Microsoft website, use your school or company license, or purchase this powerful software.

PEDAGOGICAL FEATURES

Several pedagogical features are included in this text to enhance presentation of the materials so that you can more easily understand the concepts and apply them. Throughout the text, emphasis is placed on applying concepts to current, real-world information technology project management.

Opening Case and Case Wrap-Up

To set the stage, each chapter begins with an opening case related to the material presented in that chapter. These real-life case scenarios, most of which are based on the author's experiences, spark student interest and introduce important concepts in a real-world context. As project management concepts and techniques are discussed, they are applied to the opening case and other similar scenarios. Each chapter then closes with a case wrap-up—with some ending successfully and some failing—to further illustrate the real world of project management.

What Went Right? and What Went Wrong?

Failures, as much as successes, can be valuable learning experiences. Each chapter of the text includes one or more examples of real information technology projects that went right, as well as examples of projects that went wrong. These examples further illustrate the importance of mastering key concepts in each chapter.

Media Snapshot

The world is full of projects. Television shows, movies, newspapers, websites, and other media highlight project results that are good and bad. Relating project management concepts to the types of projects highlighted in the media helps you understand the importance of this growing field. Why not get excited about studying project management by seeing its concepts at work in popular television shows, movies, or other media?

Best Practice

Every chapter includes an example of a best practice related to topics in that chapter. For example, Chapter 1 describes best practices written by Robert Butrick, author of *The Project Workout,* from the *Ultimate Business Library's Best Practice* book. He

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instructs organizations to ensure that their projects are driven by their strategy and to engage project stakeholders.

Global Issues

Every chapter includes an example of global issues of importance today. For example, Chapter 2 describes some of the problems with outsourcing, such as rioting in Beijing when customers could not buy the latest iPhones. Chapter 12 describes the recent development of urban onshoring, one response to problems with offshoring.

Key Terms

The fields of information technology and project management include many unique terms that are vital to creating a workable language when the two fields are combined. Key terms are displayed in boldface and are defined the first time they appear. Definitions of key terms are provided in alphabetical order at the end of each chapter and in a glossary at the end of the text. You can also find them by chapter on the companion website.

Application Software

Learning becomes much more dynamic with hands-on practice using the top project management software tool in the industry, Microsoft Project 2013, as well as other tools, such as spreadsheet software and the Internet. Each chapter offers many opportunities to get hands-on experience and build new software skills. This text is written from the point of view that reading about something only gets you so far—to really understand project management, you have to do it for yourself. In addition to the exercises and running cases at the end of each chapter, several challenging exercises are provided at the end of Appendix A, Guide to Using Microsoft Project 2013.

STUDENT AND INSTRUCTOR RESOURCES

Student and Instructor Companion Websites

The free Student Companion Website accessed through www.cengagebrain.com provides the template files mentioned in the text, Project 2013 files, a case study describing initiating through closing the ResNet project for Northwest Airlines (now part of Delta), and additional running cases that instructors can assign to students to practice their skills. There is also a link to the author's website, which provides up-to-date resources on important topics like agile, certifications, and more.

The Instructor Companion Website, also accessed with a single sign-on (SSO) account through www.cengagebrain.com, contains even more resources only for instructors:

- **Instructor's Manual** The Instructor's Manual that accompanies this textbook includes additional instructional material to assist in class preparation, such as suggestions for lecture topics and additional discussion questions.
- **Solution Files** Solutions to end-of-chapter questions are available on the Instructor Companion Website.
- **PowerPoint Presentations** This text comes with Microsoft PowerPoint slides for each chapter. These slides are included as a teaching aid for classroom presentation, to make available to students on the network for chapter review, or to print for classroom distribution. Instructors can add their own slides for additional topics they introduce to the class.

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- **Test Banks** In addition to the Test Bank available online through Cognero (see below), the Test Bank is also available in a number of file formats on the Instructor Companion Website. Each chapter's bank of questions includes dozens of True/False, Multiple Choice, and Essay questions. Instructors can retrieve the appropriate file formats to administer tests through their schools' learning management systems (Blackboard, Canvas, Moodle, Desire2Learn, etc.), or they can opt for Word documents.

NEW! Test Banks in Cognero

The Test Bank for *Information Technology Project Management, Eighth Edition,* is now available online in the new Cognero system. Cengage Learning Testing Powered by Cognero is a flexible, online system that allows instructors to:

- Author, edit, and manage test bank content.
- Use searchable metadata to ensure tests are complete and compliant.
- Create multiple test versions in an instant.
- Deliver tests from your learning management system (LMS), classroom, or wherever you want.

Cengage Learning Testing Powered by Cognero works on any operating system or browser with no special installs or downloads needed. With its intuitive tools and familiar desktop drop-down menus, Cognero enables instructors to easily create and edit tests from school or home—anywhere with Internet access.

IT Project Management CourseMate

Engaging, trackable, and affordable, the IT Project Management CourseMate website offers a dynamic way to bring course concepts to life with interactive learning, study, and exam preparation tools that support the printed edition of the text. Watch student comprehension soar with all-new flashcards and engaging crossword puzzles, test-prep quizzes, and more. A complete e-book provides students and instructors alike with the choice of an entire online learning experience. IT Project Management CourseMate goes beyond the book to deliver what students need.

The complete CourseMate companion product is available for an additional fee, but students can also use the CourseMate website to access the text's supplemental materials, including project documents, templates, and cases, at no additional charge.

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information in this text based on his personal experience in leading agile projects. David Jones, Rachel Hollstadt, Cliff Sprague, Michael Branch, Barb Most, Jodi Curtis, Rita Mulcahy, Karen Boucher, Bill Munroe, Tess Galati, Joan Knutson, Neal Whitten, Brenda Taylor, Quentin Fleming, Jesse Freese, Nick Matteucci, Nick Erndt, Dragan Milosevic, Bob Borlink, Arvid Lee, Kathy Christenson, Peeter Kivestu, and many other people provided excellent materials included in this book. I enjoy the network of project managers, authors, and consultants in this field who are passionate about improving the theory and practice of project management.

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As always, I am eager to receive your feedback on this book. Please send comments to me at *schwalbe@augsburg.edu*.

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ABOUT THE AUTHOR

Kathy Schwalbe, Professor Emeritus in the Department of Business Administration at Augsburg College in Minneapolis, taught courses in project management, problem solving for business, systems analysis and design, information systems projects, and electronic commerce until her retirement in May 2015. She retired from teaching to focus on writing, traveling, and enjoying life. Kathy was also an adjunct faculty member at the University of Minnesota, where she taught a graduate-level course in project management in the engineering department. She also provides training and consulting services to several organizations and speaks at numerous conferences. Kathy's first job out of college was as a project manager in the Air Force. She worked for 10 years in industry before entering academia in 1991. She was an Air Force officer, project manager, systems analyst, senior engineer, and information technology consultant. Kathy is an active member of PMI, having served as the Student Chapter

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Liaison for the Minnesota chapter, VP of Education for the Minnesota chapter, Editor of the ISSIG Review, Director of Communications for PMI's Information Systems Specific Interest Group, member of PMI's test-writing team, and writer for the community posts. Kathy earned her Ph.D. in Higher Education at the University of Minnesota, her MBA at Northeastern University's High Technology MBA program, and her B.S. in mathematics at the University of Notre Dame. She was named Educator of the Year in 2011 by the Association of Information Technology Professionals (AITP) Education Special Interest Group (EDSIG). Kathy lives in Minnesota with her husband. Visit her personal website at www.kathyschwalbe.com or www.pmtexts.com.

Other books by Kathy Schwalbe:

An Introduction to Project Management, Fifth Edition (Minneapolis: Schwalbe Publishing, 2015).

Healthcare Project Management, co-authored with Dan Furlong (Minneapolis: Schwalbe Publishing, 2013).

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