

PREFACE

Welcome to *Information Technology Project Management—Providing Measurable Organizational Value*. This book was written to help people understand the processes, tools, techniques, and areas of knowledge needed to successfully manage information technology (IT) projects.

The idea of project management has been around for a long, long time. In fact, it was around before the great pyramids of Egypt were created. Today, project management has emerged as its own field, supported by a body of knowledge and research across many disciplines. Although still relatively new, the fields of Management Information Systems (MIS) and Software Engineering have their own bodies of knowledge that include various tools, techniques, and methods supported by a continually growing base of research.

Unfortunately, the track record for IT projects has not been as successful as one might expect, although the situation appears to be improving. One reason for this improvement has been a greater focus on a project management approach to support the activities required to develop and deliver information systems. Just as building a system is more than sitting down in front of a computer and writing code, project management is more than just creating fancy charts or diagrams using one of the more popular project management software packages.

We can, however, build a system that is a technical success but an organizational failure. Information systems—the products of IT projects—are planned organizational change. Information technology is an enabler for new products, services, and processes that can change existing relationships between an organization and its customers or suppliers, as well as among the people within the organization.

This change can represent a threat to many groups. Therefore, people may not always be receptive to a new information system, regardless of how well it was built or how up-to-date the technology, tools, and techniques. On the other hand, people in an organization may rightfully resist an information system that does not function properly or meet their envisioned needs. Therefore, we must take an approach that does not consider the technical side over the organizational side or vice versa. Attention to both the technical and organizational sides of IT projects must be balanced in order to deliver a successful project.

But what is a successful project? Many people and authors define project success in terms of the project being completed on time and within budget. I will not argue that completing a project by its intended deadline and within its allocated resources is not important. I will, however, argue that on time and on-budget are important, but not necessarily sufficient conditions for project success. For example, would a project that was expected to be completed within six months and cost no more than \$1 million be considered unsuccessful if the project required an extra day or an extra dollar to complete?

You may think this is trivial, but at exactly what point in terms of schedule or budget does the project become unsuccessful?

We can also turn things around and ask whether finishing the project early and under-budget makes the project successful. Of course any organization would like to spend less money and have its system delivered early, but what if the system does not perform as required? More specifically, what value will the organization receive by spending six months and \$ 1 million on this particular project? Therefore, an organization expects to receive some kind of organizational value from the implemented system when it makes an IT investment.

As you will see throughout this text, a project's measurable organizational value, or MOV, defines a project's value to the organization and becomes the project's measure of success. Moreover, a project's MOV also provides a foundation for integrating project management and IT concepts, tools, and techniques, as well as for various decisions that are made from the project's conceptualization to its closure.

APPROACH

In writing this book, I have tried to create a balance between concept and application. Many project management books tend to cover a broad set of topics with little practical application. Others tend to focus on the tools and techniques, but fall short in showing how everything ties together.

This book was written with the student in mind. Many years ago—more than I would care to admit—when I was a student, one of my instructors said that the problem with many textbooks was that they were written by professors for other professors. That statement stuck with me over the years. When I began writing this text, I wanted to be sure that it was written with the student in mind.

Learning and understanding how to apply new concepts, tools, and techniques can be challenging enough without being made more complex by obscure writing. As you will find out, learning concepts is relatively easy when compared to putting them into good practice. This book is intended for both undergraduate and graduate students. While it has no specific prerequisites, you should have at least an introductory class in information systems or programming under your belt. You should find that the concepts of IT project management will compliment courses in systems analysis and design.

Those of you who are undergraduates will not be thrust into the role of a project manager immediately after graduation. My goal is to help prepare you for the next several progressions of your career. For example, your first assignment may be to work on a project as a programmer or analyst. The knowledge that you will gain from this text will give you a good idea of how your work fits into the big picture so that you can be a more valuable project team member. More challenging and interesting assignments and opportunities for advancement will follow as you continue to gain more knowledge and experience. Eventually, this may lead to a leadership role where your knowledge and experience will be put to the optimal test.

On the other hand, you may have already acquired some experience and now find yourself in the role of a project manager. This text will provide you not only with the big picture, but also with a foundation for applying directly the tools, processes, and methods to support the management and delivery of a successful IT project.

This book follows a generic Information Technology Project Methodology (ITPM). Most students who read this book will never have been on a real IT project. I have written this book based on a flexible methodology that attempts to bridge the questions: How do I get started?, What do I do next?, How do we know when we're

finished? This methodology provides a structure for understanding how projects are initiated, conceptualized, planned, carried out, terminated, and evaluated. This methodology will take you through the different phases of the project life cycle and introduce the concepts and tools that are appropriate for each specific phase or stage of the project. In addition, you will find the methodology and central theme of this text is that IT projects should provide measurable value to organizations.

The text provides an integrated approach to IT project management. It incorporates the nine areas outlined in the Project Management Institute's Project Management Body of Knowledge (PMBOK). The concepts associated with information systems management and software engineering when integrated with PMBOK provide an important base of knowledge that builds a foundation for IT project management. This integration helps to distinguish IT projects from other types of projects such as construction or engineering.

The text also integrates a knowledge management approach. The area of knowledge management is an area of growing interest and development. Knowledge management is a systematic process for acquiring, creating, synthesizing, sharing, and using information, insights, and experiences to create business value. Here, the concept of learning cycles provides a unique approach for defining and creating new knowledge in terms of lessons learned. These lessons learned can be stored in a repository and made available throughout the organization. Best practices can be developed from the lessons learned and integrated or made a part of an organization's IT project methodology. Over time, the generic ITPM introduced in this text can evolve and become a valuable asset to an organization as it becomes aligned with the organization's culture and business. In turn, this evolving process will provide the organization with increased capability and maturity that hopefully will increase the likelihood of successful projects.

CHAPTER OVERVIEWS

The material in each chapter provides a logical flow in terms of the phases and processes required to plan and manage an IT project. The text begins with a call for a better way to manage IT projects and then focuses on the deliverables and processes required to initiate a project. Once a decision to approve and fund an IT project is made, the project must be planned at a detailed level to determine the project's schedule and budget. The planning and subsequent execution of the project's plan are supported by the project management and information technology bodies of knowledge.

- *Chapter 1: The Nature of Information Technology Projects* describes the software crisis and the context of IT project management. This includes defining what a project is and the discipline of project management. The concepts of the project life cycle and systems development life cycle are also introduced.
- *Chapter 2: Conceptualizing and Initializing the IT Project* introduces an Information Technology Project Management Methodology (ITPM) and the concept of measurable organizational value (MOV), which will provide a foundation for this text. In addition, the first phase of this methodology, conceptualizing and initializing the project, and the first deliverable of this methodology, the business case, are described and discussed.
- *Chapter 3: Developing the Project Charter and Baseline Project Plan* introduces project integration management and a project planning framework to support the development of the project plan.

Chapter 4: The Human Side of Project Management describes the formal and informal organization so that the project manager and team can conduct a stakeholder analysis to better understand the organizational landscape. Project team selection and the roles of the project manager are discussed, as is the concept of learning cycles to support a knowledge management approach to IT project management.

Chapter 5: Defining and Managing Project Scope introduces and describes the project management knowledge area called project scope management. The project's scope defines what the project team will and will not deliver to the project sponsor or client. Scope management processes also ensure that the project's scope is properly defined and that controls are in place in order to manage scope throughout the project.

Chapter 6: The Work Breakdown Structure and Project Estimation describes the project management tool called the work breakdown structure (WBS), which breaks up the project's scope into work packages that include specific deliverables and milestones. Several traditional project estimation approaches will be introduced, as will several software engineering techniques and metrics for software estimation.

Chapter 7: The Project Schedule and Budget introduces several project management tools, including Gantt charts, activity on the node (AON), critical path analysis, program evaluation and review technique (PERT), and precedence diagramming, that can be used to develop the project schedule. A project budget can then be developed based upon the activities defined in the WBS, the project schedule, and the cost of the resources assigned or required.

Chapter 8: Managing Project Risk describes the concept of risk management and introduces a framework for defining and understanding the integrative nature of risks associated with an IT project. Several qualitative and quantitative approaches and tools will be introduced for analyzing and assessing risks so that appropriate risk strategies can be formulated.

Chapter 9: Project Communication, Tracking, and Reporting focuses on developing a communication plan for reporting the project's progress to various project stakeholders. This chapter includes an introduction to the concept of earned value and a system of project metrics to monitor and control the project.

Chapter 10: IT Project Quality Management provides a brief history of the quality movement, the people involved, and their philosophies and teachings as an underpinning to support the project quality objective. Several quality systems to support IT project quality will also be discussed. These include the International Standards Organization (ISO), TickIT, Six Sigma, and the Capability Maturity Model (CMM). Together, the concepts, teachings, philosophies, and quality system approaches provide a basis for developing the IT project quality plan.

Chapter 11: Managing Organizational Change, Resistance, and Conflict describes the nature and impact of change associated with the delivery of an information system on the people within an organization. Several organizational change theories will be introduced so that a change management plan can be formulated and executed in order to ease the transition from the current system to the system that will be implemented.

Chapter 12: Project Implementation, Closure, and Evaluation describes the tactical approaches for installing and delivering the project's product—the information system. In addition, the processes for bringing closure to the project and evaluating the project team and the project's MOV are discussed.

Appendix A: An Introduction to Function Point Analysis provides a more detailed discussion on counting function points than is provided in Chapter 6.

ORGANIZATION AND SUPPORT

The beginning of each chapter includes an opening vignette or story that describes a particular situation faced by a project manager and team undertaking an IT project. This scenario will set the stage for the concepts and tools introduced in the chapter and make the learning of the material more meaningful. From a student's perspective, this will attempt to answer the "so what?" and "why do I have to know this?" questions that should be addressed.

For many chapters there is a Web-based practicum that includes a set of integrated hands-on case assignments. The case assignments allow the student to play the role of a project team member who has been hired by a newly formed consulting firm. The Web site provides all the background for the company. The cases lead the student through the various stages of planning an IT project for a client. They include several deliverables such as the project charter, project plan, scope management plan, risk plan, and implementation plan, and they require the student to apply the concepts and techniques covered in the book.

More specifically, each case assignment will include both a hands-on and a critical thinking component. For example, the hands-on component of the case assignment may ask students to develop a project plan using Microsoft Project. However, the student would then be asked to answer questions about how specific concepts discussed in the book relate to the hands-on component. The hands-on component allows students to develop a particular skill, while the critical thinking component allows them to reflect upon how their actions may affect the project in different ways.

The supporting Web site for the Web-based project management community will host a discussion or chat area that allows students, instructors, project management experts, and even the author to discuss and share ideas from around the world.

In addition, the Web site will host various student support materials. For example, it links to various IT and project management-related Web sites and articles to support the material included in the text. A trial version of Microsoft Project 2002 has also been included with the text.

An instructor's manual, test bank, and presentation slides are available. A section of the Web site has been partitioned just for instructors to support the sharing of teaching ideas and experiences.

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