Microsoft® Office

Excel® 2007 for Project Managers

Kim Heldman

William Heldman

Wiley Publishing, Inc.

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Most of all, thanks to you, our readers, for buying this book. We hope you find it helpful for managing your next project.

About the Authors

Kim Heldman, the chief information officer for the Colorado Department of Natural Resources, has more than 16 years of project management experience in the information technology field. She's managed small, medium, and large projects over the course of her career and shares her breadth of experience and knowledge in her books through examples, stories, and tips.

Kim is the best-selling author of several other project management books, including *PMP Project Management Professional Study Guide, Third Edition* (Sybex, 2005); *Project Manager's Spotlight on Risk Management* (Sybex, 2005); and *Project Management JumpStart* (Sybex, 2005). You can learn more about Kim at her website: `KimHeldman.com`.

Bill Heldman is a computer technology instructor at a Career and Technical Education (CTE) high school in Lakewood, Colorado, where he teaches 11th- and 12th-graders on a variety of topics, including programming (application and game), networks, A+, project management, security, databases, and TCP/IP. Bill has 20 years of experience in the computer technology field, starting with mainframe computing and working through programming, networks, and enterprise application software. He has worked as a technician, supervisor, and mid-manager in both public and private-sector information technology organizations.

Bill has written numerous certification study guides for Sybex. He is also a frequent contributor to *Microsoft Certified Professional (MCP) Magazine* and its cousin, *Redmond Magazine*, as well as *Windows IT Pro* magazine. You can learn more about Bill at his website: `BillHeldman.com`. You can view his class outline along with other academic information at `www.ctfp.org`.

Contents at a Glance

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Introduction

We have written this book for those of you who have some experience in project management and are looking for a quick and efficient way to manage your projects. When combined, Excel 2007 and Microsoft Office SharePoint Server (MOSS)—two components of the Office 2007 initiative that Microsoft has developed—are great for managing all phases of a project, creating templates, collaborating on planning processes, tracking project progress, and sharing information with all interested parties.

The project management field has grown exponentially over the last decade. Run a query on your favorite job-hunting site and you'll see that project management experience is a requirement (or at a minimum, a desired skill set) for tens of thousands of job postings. In addition, many of you have upwards of half a dozen to a dozen independent projects running at the same time. This book will show you how to organize the management of those projects using templates we've built for Excel 2007 and how to take advantage of the power of SharePoint to communicate and share that information with team members and stakeholders.

If you find that this topic interests you and project management seems like a career worth pursuing, we strongly recommend that you consider obtaining your Project Management Professional (PMP) certification through the Project Management Institute (PMI). PMI is the de facto standard in project management methodologies. You will find that many organizations now require a PMP certification for positions related to project management.

This book is based on the project management guidelines recommended by PMI, and many of the terms, concepts, and processes you'll read about in this book are based on PMI's publication, *A Guide to the Project Management Body of Knowledge (PMBOK Guide), Third Edition.*

For a more detailed exploration of the PMP certification, pick up a copy of *PMP Project Management Professional Study Guide, Third Edition,* by Kim Heldman (Sybex, 2005).

Whether you choose to pursue certification or not, solid project management practices are required to achieve success on your projects. Using the processes, templates, and communication methods we've outlined in this book will help you achieve that success.

Who Should Read This Book

This book was written for those of you who have some understanding of project management but would like to further that understanding and apply some solid principles to your next project. It's for those of you who manage the day-to-day projects that keep your organization running. Excel 2007 is a great tool for managing those types of projects. This doesn't mean you'll have to implement a rigorous discipline that will take as long to set up and administer as it will to complete the project itself. Project management really boils down to a handful of basic principles that can be scaled to meet the complexity of each project. Excel 2007 and

SharePoint can help you set up those processes and this book will show you how. You'll find the templates and checklists included in this book immediately applicable to your next project.

Your knowledge and practice of the principles outlined in this book will help assure employers that you understand how to bring a project to a successful closure. If you're interested in managing projects using a proven approach that's efficient, easy to use, and not excessively burdensome, this book is for you.

What This Book Covers

This book walks you through a project life cycle from beginning to end and shows you step-by-step how to set up templates to manage the process and how to share project information using SharePoint. We've included many useful examples, tips, and hints that will help you solve common project management dilemmas. Here's a high-level overview of what this book entails:

Chapters 1 and 2 These chapters lay the foundation of project management, Excel 2007, and SharePoint Server Fundamentals and delve into definitions, project life cycles, and the skills all good project managers need for success.

Chapters 3 and 4 This section deals with the Initiating and Planning phases of the project. Here you'll find templates for initiating projects and documenting the scope of the project, and we'll discuss how to set project goals and document the requirements. We'll also walk through how to publish these documents to the SharePoint server.

Chapters 5 and 6 These chapters walk you through acquiring resources, building strong teams, managing contracts, and identifying and planning for risks. There are a host of templates for you to use and or modify for projects.

Chapters 7 and 8 These chapters discuss the quality management processes, breaking down the work of the project into manageable components, and creating the project schedule. You'll also determine schedule and budget estimates and create the project budget, all using Excel 2007.

Chapters 9 and 10 A large part of the planning work is done. In these chapters, we'll discuss procedures for managing changes to the project, assessing change impacts, monitoring the performance of the project, taking corrective action, accepting the final project, and documenting lessons learned. We'll also show you how to publish and archive this information on SharePoint.

Appendix The Appendix covers the more esoteric elements of Excel 2007 such as pivot tables, publishing to MOSS, automating Excel, and Excel functions. While some of these features may have been prevalent in previous versions of Excel, they have been updated for Excel 2007. And, of course, if you've never ventured into these advanced areas, the Appendix walks you through so that you have the ability to utilize these tremendously helpful features in your project management efforts.

Making the Most of This Book

At the beginning of each chapter, you'll find an introduction that highlights all the topics covered in the chapter. In addition, some special elements highlight important information:

Notes provide extra information and references to related information.

Tips are insights that help you perform tasks more easily and effectively.

Appendix A discusses many of the built-in functions Excel 2007 contains that are useful in everyday project management.

All the templates you'll encounter throughout the book can be downloaded from `www.sybex.com/go/excelpm`.

Chapter

1

Establishing Project Management Fundamentals

This chapter will start us off with the fundamentals of project management. We want to make sure that your understanding of project management is in line with ours, because after all, there is more than one way to manage a project. If your experience is like ours, you probably tried several approaches until you found one that worked for you. For some, the process of managing a project, organizing data, and communicating with stakeholders and team members comes naturally. For others, let's just say there were a few knocks along the way and finding a system that works is still somewhat of a struggle. No matter how you manage a project or what your understanding of project management processes is, we're going to set the foundation here and walk you through a process that incorporates sound project management principles with the benefits of Excel 2007 (and other Office 2007 products) to manage your projects and project data more efficiently.

Project Management Institute

Project management brings together a set of tools and techniques that describe, organize, and monitor the activities and work of the project. Project management is performed by people, and you probably have experience doing just that whether you call it project management or not.

As we mentioned, there are several established project management processes you could use to manage a project. We will be using the principles outlined by the Project Management Institute (PMI) in *A Guide to the Project Management Body of Knowledge (PMBOK Guide), Third Edition*. PMI sets the standard in project management today. It is the most widely recognized organization regarding project management and it has successfully promoted project management best practices around the globe. PMI offers two certifications, the Project Management Professional (PMP) and the Certified Associate in Project Management (CAPM). If you're interested in learning more about these certifications, please visit `www.pmi.org`. If you have not yet obtained the PMP certification, we encourage you to do so. You'll find that this certification is now a requirement for many project management job postings and other positions, particularly in the information technology field, where project management is a significant function and responsibility of the role.

If you're thinking about taking the PMP exam offered through PMI, be sure to get a copy of Kim Heldman's *PMP Project Management Professional Study Guide, Third Edition* (Sybex, 2005). Thousands of people world-wide have used Kim's book to study for and pass the PMP exam.

As you progress through this book, you may find that you've used the processes and procedures outlined but perhaps called them by another name. Others may be new to you. That's okay—follow along and you'll learn some of the terms and processes found in *A Guide to the PMBOK* and how to make the best use of Excel 2007 functions and features to make your project a success.

First we'll look at what a project is and some of the ways they come about.

What Is a Project?

We can't think of a better place to lay our foundation than by defining the term *project*. It may seem odd to have to explain what a project is, but people frequently confuse projects with ongoing operations. Projects have definite beginning and ending dates and produce a unique product or service. Ongoing operations don't typically have start or end dates and usually the same process is used to produce the same result. (We'll look more closely at these definitions in the next section).

The focus of this book is on projects. Projects follow a specific process from start to finish, and that process is repeatable for any project you undertake. For example, all projects start with a request (produced in the Initiating process). Each project requires proper planning and monitoring techniques to ensure that the goals of the project are met and that they satisfy stakeholder expectations. We'll examine these processes as we proceed through the remaining chapters of this book.

Projects versus Ongoing Operations

Asking your spouse to install new shelving and clean and organize the garage may evoke a statement like, "I don't have time for a project like that right now." Cleaning and organizing the garage may be a project. But how do you know for sure? As we said in the previous section, projects have a definite beginning and ending date, they're limited in duration, and at their conclusion a unique product or service is produced. In this case, cleaning out the garage meets the definition of a project. There's a clear start and end date, and when you're finished, a new result is produced because the shelves are installed and scattered items are now neatly organized and categorized.

The purpose of a project is to meet its goal and conclude. The purpose of ongoing operations is to keep the organization functioning.

Now suppose you have company coming for dinner. If you're like us, there's a mad rush 20 minutes before the guests arrive to tidy up and run the vacuum to get all those dark fuzzies off the carpet. Is this a project? No. It doesn't fit the definition. Vacuuming is an ongoing operation. Sure, you start and stop at a specified time (hopefully before the doorbell rings), but there isn't a unique product or service produced at the end. Every time you vacuum, you use the same process and get the same result. And it's seemingly a never-ending chore. Vacuuming must occur every few days or so and it's almost always performed in the same way. That describes an ongoing operation. There is no clear start and end date, the tasks are repetitive in nature, and generally the same result is produced over and over.

Ongoing operations may or may not follow a specific process, and they can take on a million different forms. The process for one operation isn't necessarily the same as it is for another. This doesn't mean that you can't use the templates and spreadsheets presented in this book for tracking ongoing operations or organizing other data or tasks. In fact, you may find several of the forms and spreadsheets in this book useful for other applications, so feel free to modify them and incorporate them into your routine.

Perhaps your boss approaches you with the following scenario: She'd like to consolidate the four disparate networks in your organization into one network and clearly define the roles and responsibilities for each of the team members under the new scenario. Is it a project? Yes. It has a definite start and end date and it produces a unique product or service at its conclusion. However, when this project is over and the networks are successfully consolidated, the process of monitoring and fine-tuning the network becomes an ongoing operation. This scenario tends to occur quite often in the information technology field. A project is completed and then assimilated into the ongoing, everyday work of the organization. For example, a new software program is written to monitor customers' buying patterns. When the software is tested and implemented, another team of specialists takes over the day-to-day tasks of monitoring the software and helping users work through problems.

In other industries, projects may come to a conclusion without being assimilated into ongoing operations. The construction and manufacturing industries are some examples that come to mind. Once you've constructed a building or produced a new product, it's turned over to the consumer. Table 1.1 recaps the characteristics of projects and ongoing operations.

TABLE 1.1 Projects versus Ongoing Operations

Projects	Ongoing Operations
Definite beginning and ending.	No definitive beginning and ending.
Temporary.	Ongoing.
Produces a unique product or service.	Produces the same product or service over and over.
Resources are dedicated to the project.	Resources are dedicated to operations.
Ending is determined by specific criteria.	Processes are repeated over and over.

How Projects Come About

The authors have over 40 years combined experience working on or managing projects. It never ceases to amaze us how new projects come about. We've seen them announced at team meetings, mentioned in the hallway, scribbled down on a lunch napkin, and turned over to us in the restroom. The topper is the one that came about when one of our coworker's bosses told a newspaper reporter about a project his organization was undertaking. The trouble was our coworker hadn't heard a word about the project until he read the article in the Sunday paper. You probably have a few stories of your own like these.

On a serious note, there are several reasons a project comes about. Understanding the reason will help you clarify the goals and scope of the project. For example, if you know the project came about due to a new law or mandatory regulation, you'll know there are specific requirements that must be met and certain aspects of the project that cannot be compromised. The new law may have strict specifications and those specifications must be incorporated as part of the requirements for your project.

Organizations are always examining ways of creating business, staying competitive, gaining efficiencies, and serving their customers in new and creative ways. Projects may result from all of these needs. Business requirements, opportunities, or problems may also bring about a new project. According to *A Guide to the PMBOK*, most projects come about as a result of one of the following six needs or demands. We'll briefly examine each next.

Market demands Market demands often drive new project requests. Changes in the economy, changes in consumer habits, and changes in supply and demand are all examples of market demands that can bring about a new project. For example, spikes in utility prices or interruptions in oil supplies and reserves may bring about projects to create alternative energy sources.

Business needs Business needs such as improving efficiency, reducing costs, and increasing inventory churn are often reasons for project creation. An example business need might involve implementing an enterprise resource planning system that improves the customer ordering and fulfillment process while providing the organization with up-to-the-minute revenue information.

Customer requests Customer requests are an endless source of project creation. We usually think of customers as external to the organization. Keep in mind that there are also internal customers. Typically the information technology, human resources, and accounting divisions have internal customers within the organization that they serve. Customer requests, both internal and external, may drive many projects. For example, the folks in the human resources department might decide to implement an automated system for tracking all human resource transactions. They want to track job applications, promotions, terminations, and so on online rather than in file drawers.

Legal requirements Legal requirements primarily come about as a result of government action. For example, the Food and Drug Administration requires an extensive testing process for new medical devices before they can be introduced to the marketplace and used on us mere humans. Those processes may drive a project or drive the need for additional requirements for an existing project. The legal requirements category may also include industry regulations imposed to ensure safety, accountability, environmental protection, and so on.

Technological advances This one happens to be the authors' favorite category. Without technological advances, we wouldn't have the iPod, cell phones, personal digital assistants, digital cameras, or myriad other devices we could not live without. Today it seems that technological advances come about almost overnight. It especially seems that way after you've just purchased what you thought was the latest and greatest only to find the next latest and greatest introduced the week after you purchased your model.

Social needs Projects driven by social needs may include things like preventing infectious disease, purifying drinking water, and creating educational programs for underprivileged children. Social needs may come about due to customers or concerned citizens.

Each category represents opportunities, business requirements, or problems that need solved. Management generally decides how to respond to needs and demands, and those decisions will likely bring about a new project.

Overview of the Project Process Groups

Most project management methodologies have a series of processes through which projects progress. Most methodologies start with an initiating process and continue through to closing. Since we're basing our methodologies on *A Guide to the PMBOK* standards, we'll look at the five project management process groups they promote:

- Initiating
- Planning

- Executing
- Monitoring and Controlling
- Closing

A number of individual processes collectively make up each group. For example, the Initiating process group includes two individual processes, Develop Project Charter and Develop Preliminary Project Scope Statement.

These groups, along with their individual processes, make up the project management process. A project starts off in the Initiating group and proceeds through each of the groups until it is either completed successfully and closed out or cancelled.

Often during the course of a project, you'll find that you need to revisit a process group (most likely the Planning group) to update or add information that changes assumptions made previously. Project management is an iterative process in that you discover information as you get further along in a project. This may require changes and tweaking to previous work to keep documents, plans, and the work of the project on track with the goals.

Next let's take a look at a high-level definition of each of the process groups.

Initiating The Initiating process is where the project comes to life. Initiating officially acknowledges that a project should begin. It also indicates that resources (both human and financial) should be encumbered for the project. The project manager is usually named here and is authorized to begin work on the project. The first project documentation gets created in this group in the form of the project charter. This document describes the goals of the project, the business reason or justification for the project, a high-level description of the project's product or service, and more. The following are some of the accomplishments for this process group:

- Determining the major goals of the project
- Assigning the project manager
- Documenting and publishing the project charter

Planning The Planning process group is where a great deal of the project management work of the project occurs. Here you'll further define the goals of the project, discover and document deliverables and requirements, formulate communication plans, highlight risks that may occur on the project, determine quality metrics, and more. The Planning processes are critical to the functions of the remaining process groups. In project management terms, Planning is more than likely the most important process group of all. The accomplishments for this process group include the following:

- Documenting and publishing the project scope statement
- Establishing a project budget

- Defining project activities
- Developing a project schedule
- Determining resource needs, skills, and talents

Executing The Executing process is where the work of the project happens. The project manager coordinates and directs project resources and oversees the completion of the project plan. This process also ensures that future project work stays in alignment with the project goals. Approved changes to the project plan are typically implemented here. Sometimes the changes require a trip back through the Planning processes to adjust plans or schedules to keep the project on track. The following list includes some of the accomplishments for this process group:

- Forming and motivating the project team
- Directing and leading the project team
- Obtaining other project resources
- Communicating project information
- Conducting project status meetings

Monitoring and Controlling Monitoring and Controlling, as the name implies, is where the work of the project is measured, verified, and accepted or where action is taken to correct work that is not in line with the project plan. Performance measurements are taken and evaluated during these processes to determine if variances exist between the work results and the project plan. If variances are discovered, corrective action is taken to once again get the work of the project in line with the plan. This might mean another pass through the Planning process group to adjust project activities, resources, schedules, budgets, and so on. Here are some of the accomplishments for this process group:

- Measuring project performance against the plan
- Taking corrective actions when needed to bring performance measures within limits
- Evaluating the effectiveness of corrective action measures
- Ensuring that the project progresses according to the plan
- Reviewing and implementing change requests

In practice, the Executing and Monitoring and Controlling processes are often combined and performed together—or very close together. As work results are produced (Executing), they're verified and accepted or adjustments are made to correct the work and produce results in line with the plan (Monitoring and Controlling). If you find it easier to combine these processes (as these authors do), stay alert to changes and make certain not to skip the important steps within either process group.

Closing The Closing process group brings a formal, orderly end to the project. In this group, final acceptance of the project occurs, project documents are gathered and archived, contracts are closed out, lessons learned are documented, and more. Closing is the most often skipped process. Once the work of the project is complete, project teams have a tendency to jump right into the next project. Taking the time to collect and archive documents will really pay off when you undertake a new project that's similar in size and scope to the project you've completed. You can review the documents, reuse templates, and save time by reviewing risks, plans, and so on to speed up the Planning processes in particular. Here are some of the accomplishments for this process group:

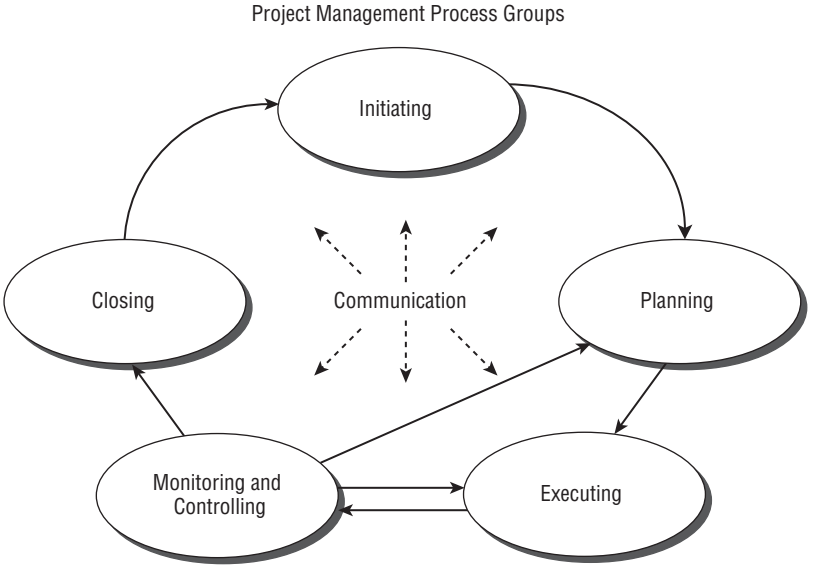
- Obtaining acceptance of the deliverables
- Documenting lessons learned
- Archiving project records
- Formalizing project closure
- Releasing project resources

If you're working on a large project or a project that contains multiple subprojects, the Closing process group will become an input to the Initiating process group. For example, imagine you're working on a construction project that is extending a university campus and adding several new buildings. New buildings, roads, and other infrastructure components make up the overall project. At the completion of each phase of the project (building A, building, B, building C, and so on), the closing process becomes an input into the next phase. Therefore, Initiating can signal not only the beginning of a project but also the beginning of the next phase of a project.

As we stated earlier, these processes are iterative. Planning, Executing, and Monitoring and Controlling are the most often repeated processes. Also, the outputs of one process group (Initiating, for example) become the inputs to another process group (Planning, for example). It's important to be as detailed and accurate as you can as you progress through the processes because you'll be building on the documentation and work you've done previously. Figure 1.1 shows the inputs and outputs and the iterative nature of these processes.

We'll cover each of the process groups as we progress through the remaining chapters of this book, with the most emphasis on the Planning processes. Planning is probably the most important process group of all and is likely the place where Excel 2007 and the other Office products will get the heaviest use. You'll continue to use Excel throughout the remainder of the project, but the largest effort will be spent up front establishing templates, forms, and processes that you'll fill in and update as the work of the project progresses. Next we'll take a look at the key skills every good project manager should possess.

FIGURE 1.1 Project management process groups



Key Project Management Skills

When this author (Kim) started her career in project management, the field wasn't even called project management. We were known by a host of names: analysts, implementation specialists, engineers, integrators, hey you, and so on. Several times before the term *project manager* became commonplace, my coworkers and managers would describe us as "those organized people with a mix of technical, business, and people skills—you know, the 'do everything' kind." In reality, this description wasn't, and still isn't, far from the truth. Project managers must have a wide variety of skills and they must have high competency levels in those skill sets. Four cornerstones frame the skill set of every good project manager:

- Leading
- Communicating
- Team building and motivating
- Negotiating and problem solving

From these skills, the project management house is constructed. Project management skills form the next floor. General management skills, technical skills, organizational skills, business skills, industry-specific skills, and so on all build upon this foundation. We will look at each of the foundational skills later in this section with the exception of team building. We'll cover that topic in Chapter 5, "Planning and Acquiring Resources."

The four cornerstone skills, known as "soft" skills, are the most important set of skills you have as a project manager. And of the four, leadership is the foundation stone you'll lay first. If you aren't good at leading, your project and your project team will likely suffer for it. Technical skills are important, but without a mastery of the soft skills, the technical skills aren't a lot of help. Think of it as having a set of stairs in a 20-story building. The trip to the top floor is possible, but it's a lot of hard work and you'll likely lose team members along the way. An elevator would make the journey a lot more pleasant.

Whether you believe soft skills are intertwined with our personalities and styles or you believe they can be learned, it's safe to say none of us knows everything and there's always opportunity to learn new information and add a few new tips and tricks to your tool bag.

Mastering the four foundation skills is even more important today than it was in the past because the field of project management has grown up within the organization. We'll look at how that's happened next.

Project Management Maturity

As the project management profession has grown and matured, so has its place in the typical organization. For example, in the early days of our careers, we wielded notebooks full of spreadsheets, checklists, and documentation for each project we were assigned. The positions we held were buried several layers deep in the organization—usually somewhere in the customer service or information technology departments.

Today, many organizations take a much more holistic approach to project management. Sure, we still have the spreadsheets and checklists, but project management has moved from the tactical, buried eight levels deep in an obscure department to the strategic. Project management offices (PMOs) have cropped up everywhere. The PMO is responsible for the management of all the major projects within an organization (also known as portfolio or program management), and its director often holds a high-level management position. We're even beginning to see "C" level job postings—Chief Project Management Officer—to head up those PMOs.

Project management is no longer a matter of how to take a project from step 1 to step 10—although the tactical aspects will never go away. Project management has now taken a seat at the executive table. Today project management is strategic as well as tactical. Where once an organization may have decided to implement a technology product to improve workforce efficiency, for example, that same project is now examined from the perspective of the overall value it adds to the organization. It's weighed against the strategic direction of the organization and other projects of similar importance. Return on investment is investigated, as is the value to the customer or end user. Global business implications are determined. And the list goes on. The factors today are considered from an organizational perspective rather than a departmental perspective.

Project management has matured from the tactical to the strategic. It still requires tactical skills to manage the day-to-day activities of project work, but increasingly, projects are viewed from the perspective of the organization as a whole and the value they add to the organization or its customers.

Because of this maturity from the tactical to the strategic, it's more imperative than ever that project managers have a well-rounded set of skills. As we said, a project manager's skills are first and foremost built upon leadership abilities. Without solid leadership skills, it's difficult to impart vision, gain support for that vision, and inspire project teams to perform at their best. We'll look at leadership skills in the next section.

Leadership Skills

What's your definition of a leader? Is a leader a leader because they hold a position of authority? Do you know leaders who don't hold a managerial title? Our guess is your answer to this last question is yes. Leaders don't necessarily have a position of authority in the organization. Nonetheless they are leaders in their own right. These are the go-to folks in the organization. They're the ones likely to inspire project team members to say, "I wonder what [fill in the blank] thinks of that idea," and to follow their opinion on the topic.

Leadership is more than getting people to do what you want them to do. Dictators don't have any trouble performing this feat, but their followers aren't usually happy about it. Successful project managers know that certain key aspects of leadership are important.

- Imparting a vision of the project's value to the organization
- Imparting a vision of the product or service of the project (the project's end result)
- Gaining consensus on the goals and deliverables of the project and other issues that arise as the project progresses
- Establishing direction and a clear plan for meeting the goals of the project
- Managing the expectations of stakeholders, management, and team members
- Inspiring others to perform at their best
- Backing the team and their actions when it's appropriate
- Removing obstacles from the project team's path
- Managing conflict
- Building trustworthy relationships

Most of these factors probably seem obvious. At a minimum, they make sense. However, don't fall into the trap of thinking that you've accomplished these things, as we've seen many project managers do. They lull themselves into believing "everyone" knows the plan or that everyone knows you're there to help with issues and conflicts as they arise. Make it a habit