3

The Project Management Process Groups: A Case Study

Objectives

After reading this chapter, you will be able to:

1. *Describe the five project management process groups, the typical level of activity for each, and the interactions among them*
2. *Understand how the project management process groups relate to the project management knowledge areas*
3. *Discuss how organizations develop information technology project management methodologies to meet their needs*
4. *Review a case study of an organization applying the project management process groups to manage an information technology project, and understand the contribution that effective project initiation, project planning, project execution, project monitoring and controlling, and project closing make to project success*

OPENING CASE

Erica Bell was in charge of the Project Management Office (PMO) for her consulting firm. The firm, JWD (Job Well Done) Consulting, had grown to include more than 200 full-time consultants and even more part-time consultants. JWD Consulting provides a variety of consulting services to assist organizations in selecting and managing information technology projects. The firm focuses on finding and managing high-payoff projects and developing strong metrics to measure project performance and benefits to the organization after the project is implemented. The firm's emphasis

on metrics and working collaboratively with its customers gives it an edge over many competitors.

Joe Fleming, the CEO, wanted his company to continue to grow and become a world-class consulting organization. Since the core of the business was helping other organizations with project management, he felt it was crucial for JWD Consulting to have an exemplary process for managing its own projects. He asked Erica to work with her team and other consultants in the firm to develop an intranet where they could share their project management knowledge. He also thought it would make sense to make some of the information available to the firm's clients. For example, the firm could provide project management templates, tools, articles, links to other sites, and an "Ask the Expert" feature to help build relationships with current and future clients. Since JWD Consulting emphasizes the importance of high-payoff projects, Joe also wanted to see a business case for this project before proceeding.

Recall from Chapter 1 that project management consists of nine knowledge areas: integration, scope, time, cost, quality, human resources, communications, risk, and procurement. Another important concept to understand is that projects involve five project management process groups: initiating, planning, executing, monitoring and controlling, and closing. Tailoring these process groups to meet individual project needs increases the chance of success in managing projects. This chapter describes each project management process group in detail through a simulated case study based on JWD Consulting. Although you will learn more about each knowledge area in Chapters 4 though 12, it's important first to learn how they fit into the big-picture of managing a project. Understanding how the knowledge areas and project management process groups function together will lend context to the remaining chapters.

PROJECT MANAGEMENT PROCESS GROUPS

Project management is an integrative endeavor; decisions and actions taken in one knowledge area at a certain time usually affect other knowledge areas. Managing these interactions often requires making trade-offs among the project's scope, time, and cost—the triple constraint of project management described in Chapter 1. A project manager may also need to make trade-offs

between other knowledge areas, such as between risk and human resources. Consequently, you can view project management as a number of related processes.

- A **process** is a series of actions directed toward a particular result. **Project management process groups** progress from initiation activities to planning activities, executing activities, monitoring and controlling activities, and closing activities. **Initiating processes** include defining and authorizing a project or project phase. To initiate a project or just the concept phase of a project, someone must define the business need for the project, someone must sponsor the project, and someone must take on the role of project manager. Initiating processes take place during *each* phase of a project. Therefore, you cannot equate process groups with project phases. Recall that there can be different project phases, but all projects will include all five process groups. For example, project managers and teams should reexamine the business need for the project during every phase of the project life cycle to determine if the project is worth continuing. Initiating processes are also required to end a project. Someone must initiate activities to ensure that the project team completes all the work, documents lessons learned, reassigns project resources, and that the customer accepts the work.
- **Planning processes** include devising and maintaining a workable scheme to ensure that the project addresses the organization's needs. There normally is no single "project plan." There are several project plans, such as the scope management plan, schedule management plan, cost management plan, procurement management plan, and so on, defining each knowledge area as it relates to the project at that point in time. For example, a project team must develop a plan to define the work that needs to be done for the project, to schedule activities related to that work, to estimate costs for performing the work, to decide what resources to procure to accomplish the work, and so on. To account for changing conditions on the project and in the organization, project teams often revise project plans during each phase of the project life cycle. The project management plan, described in Chapter 4, coordinates information from all other plans.
- **Executing processes** include coordinating people and other resources to carry out the project plans and produce the products, services, or results of the project or phase. Examples of executing processes include developing the project team, directing and managing the project team, performing quality assurance, distributing information, and selecting sellers.
- **Monitoring and controlling processes** include regularly measuring and monitoring progress to ensure that the project team meets the project

objectives. The project manager and staff monitor and measure progress against the plans and take corrective action when necessary. A common monitoring and controlling process is performance reporting, where project stakeholders can identify any necessary changes that may be required to keep the project on track.

- **Closing processes** include formalizing acceptance of the project or project phase and ending it efficiently. Administrative activities are often involved in this process group, such as archiving project files, closing out contracts, documenting lessons learned, and receiving formal acceptance of the delivered work as part of the phase or project.

Figure 3-1 shows the project management process groups and how they relate to each other in terms of typical level of activity, time frame, and overlap. Notice that the process groups are not isolated events. The level of activity and length of each process group varies for every project. Normally, the executing processes require the most resources and time, followed by the planning processes. The initiating and closing processes are usually the shortest and require the least amount of resources and time. However, every project is unique, so there can be exceptions. You can apply the process groups for each major phase of a project, or you can apply the process groups to an entire project, as the JWD Consulting case study does in this chapter.

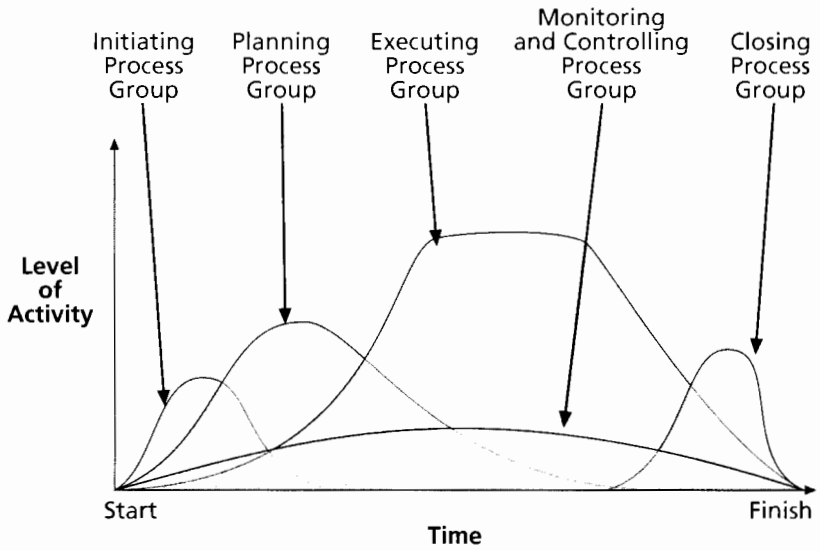

Figure 3-1. Level of Activity and Overlap of Process Groups Over Time

What Went Wrong?

Many readers of *CIO Magazine* commented on its cover story about problems with information systems at the U.S. Internal Revenue Service (IRS). The article described serious problems the IRS has had in managing information technology projects. Philip A. Pell, PMP, believes that having a good project manager and following a good project management process would help the IRS and many organizations tremendously. Mr. Pell provided the following feedback:

> Pure and simple, good, methodology-centric, predictable, and repeatable project management is the SINGLE greatest factor in the success (or in this case failure) of any project. When a key stakeholder says, 'I didn't know how bad things were,' it is a direct indictment of the project manager's communications management plan. When a critical deliverable like the middleware infrastructure that makes the whole thing work is left without assigned resources and progress tracking, the project manager has failed in his duty to the stakeholders. When key stakeholders (people and organizations that will be affected by the project, not just people who are directly working on the project) are not informed and their feedback incorporated into the project plan, disaster is sure to ensue. The project manager is ultimately responsible for the success or failure of the project.[1]

Each of the five project management process groups is characterized by the completion of certain tasks. During initiating processes for a new project, the organization recognizes that a new project exists. Often, completing a business case and project charter accomplishes this recognition (see Chapter 4). These documents identify the main stakeholders for a project, justify the project, and specify the high-level scope, time, and cost goals of the project. Usually, the project manager and key team members are also selected during the initiating process group, if they haven't been selected already in a process some organizations call pre-initiating.

Outcomes of the planning process group include completing the work breakdown structure and scope statement, the project schedule, and the project cost estimate (see Chapters 5, 6, and 7, respectively). Planning processes are especially important for information technology projects. Everyone who has ever worked on a large information technology project that involves new technology knows the saying, "A dollar spent up front in planning is worth one hundred dollars spent after the system is implemented." Planning is crucial in information technology projects because once a project team implements a new system, it takes a considerable amount of effort to change the system. Research suggests that companies working to implement best practices should spend at least 20 percent of project time in initiating and planning.[2]

The executing process group involves taking the actions necessary to complete

[1] Pell, Phillip A., Comments posted on CIO Magazine Web site on article "For the IRS, There's No EZ Fix," (April 1, 2004).

[2] PCI Group, "PM Best Practices Report," (October 2001).

the work described in the planning activities. The main outcome of this process group is the delivery of the actual work of the project. For example, if an information technology project involves providing new hardware, software, and training, the executing processes would include leading the project team and other stakeholders to purchase the hardware, develop and test the software, and deliver and participate in the training. The executing process group should overlap the other process groups and generally requires the most resources.

Monitoring and controlling processes measure progress toward the project objectives, monitor deviation from the plan, and take corrective action to match progress with the plan. The project manager should be monitoring progress closely to ensure that deliverables are being completed and objectives are being met. The project manager must work closely with the project team and other stakeholders and take appropriate actions to keep the project running smoothly. The ideal outcome of the monitoring and controlling process group is to complete a project successfully by delivering the agreed-upon project scope within time, cost, and quality constraints. If changes to project objectives or plans are required, monitoring and controlling processes ensure that these changes are made efficiently and effectively to meet stakeholder needs and expectations. Monitoring and controlling processes overlap all of the other project management process groups because changes can occur at any time.

During the closing processes, the project team works to gain acceptance of the end products, services, or results and bring the phase or project to an orderly end. Key outcomes of this process group are formal acceptance of the work and creation of closing documents, such as a final project report and lessons-learned report.

Media Snapshot

Just as information technology projects need to follow the project management process groups, so do other projects, such as the production of a movie. Processes involved in making movies might include screenwriting (initiating), producing (planning), acting and directing (executing), editing (monitoring and controlling), and releasing the movie to theaters (closing). Many people enjoy watching the extra features on a DVD that describe how these processes lead to the creation of a movie. For example, the DVD for Lord of the Rings: The Two Towers Extended Edition includes detailed descriptions of how the script was created, how huge structures were built, how special effects were made, and how talented professionals overcame numerous obstacles to complete the project. This acted "...not as promotional filler but as a serious and meticulously detailed examination of the entire filmmaking process."[3] Project managers in any field know how important it is to follow a good process.

[3] Jacks, Brian, "Lord of the Rings: The Two Towers Extended Edition (New Line)," Underground Online (accessed from *www.ugo.com* August 4, 2004).

MAPPING THE PROCESS GROUPS TO THE KNOWLEDGE AREAS

You can map the main activities of each project management process group into the nine project management knowledge areas. Table 3-1 provides a big-picture view of the relationships among the 44 project management activities, the process groups in which they are typically completed, and the knowledge areas into which they fit. The activities listed in the table are the main processes for each knowledge area listed in the *PMBOK® Guide 2004*. Note that these processes have changed slightly from the *PMBOK® Guide 2000*. Also note that some of the processes begin with verbs and some do not, as listed in the *PMBOK® Guide 2004*. The wording of these processes may be slightly different in other parts of this text.

Table 3-1: Project Management Process Groups and Knowledge Area Mapping

KNOWLEDGE AREA	PROJECT MANAGEMENT PROCESS GROUPS				
	INITIATING	PLANNING	EXECUTING	MONITORING & CONTROLLING	CLOSING
Project Integration Management	Develop project charter, Develop preliminary project scope statement	Develop project management plan	Direct and manage project execution	Monitor and control project work, Integrated change control	Close project
Project Scope Management		Scope planning, Scope definition, Create WBS		Scope verification, Scope control	
Project Time Management		Activity definition, Activity sequencing, Activity resource estimating, Activity duration estimating, Schedule development		Schedule control	
Project Cost Management		Cost estimating, Cost budgeting		Cost control	

Table 3-1: Project Management Process Groups and Knowledge Area Mapping (continued)

KNOWLEDGE AREA	PROJECT MANAGEMENT PROCESS GROUPS				
	INITIATING	PLANNING	EXECUTING	MONITORING & CONTROLLING	CLOSING
Project Quality Management		Quality planning	Perform quality assurance	Perform quality control	
Project Human Resource Management		Human resource planning	Acquire project team, Develop project team	Manage project team	
Project Communications Management		Communications planning	Information distribution	Performance reporting, Manage stakeholders	
Project Risk Management		Risk management planning, Risk identification, Qualitative risk analysis, Quantitative risk analysis, Risk response planning		Risk monitoring and control	
Project Procurement Management		Plan purchases and acquisitions, Plan contracting	Request seller responses, Select sellers	Contract administration	Contract closure

PMBOK® Guide 2004, p. 69

Several organizations use PMI's information as a foundation for developing their own project management methodologies, as described in the next section. Notice in Table 3-1 that the majority of project management processes occur as part of the planning process group. Since each project is unique, project teams are always trying to do something that has not been done before. To succeed at unique and new activities, project teams must do a fair amount of planning. Recall, however, that the most time and money is normally spent on executing. It is good practice for organizations to determine how project management will work best in their own organizations.

DEVELOPING AN INFORMATION TECHNOLOGY PROJECT MANAGEMENT METHODOLOGY

Many organizations spend a great deal of time and money on training efforts for general project management skills, but after the training, project managers may still not know how to tailor their project management skills to the organization's particular needs. Because of this problem, some organizations develop their own internal information technology project management methodologies. The *PMBOK® Guide* is a standard that describes best practices for *what* should be done to manage a project. A **methodology** describes *how* things should be done, and different organizations often have different ways of doing things.

For example, after implementing a systems development life cycle (SDLC) at BlueCross BlueShield of Michigan, the Methods department became aware that developers and project managers were often working on different information technology projects in different ways. Deliverables were often missing or looked different from project to project. They may have all had a project charter, status reports, technical documents (i.e., database design documents, user interface requirements, and so on), but how they were producing and delivering these deliverables was different. There was a general lack of consistency and a need for standards to guide both new and experienced project managers. Top management decided to authorize funds to develop a methodology for project managers that could also become the basis for information technology project management training within the organization. It was also part of an overall effort to help raise the company's Software Capability Maturity Model level. (See Chapter 8, Project Quality Management, for more information on maturity models.)

BlueCross BlueShield of Michigan launched a three-month project to develop its own project management methodology. Some of the project team members had already received PMP certification, so they decided to base their methodology on the *PMBOK® Guide 2000*, making adjustments as needed to best describe how their organization managed information technology projects. See a complete article on this project on the companion Web site for this text. Also see the Suggested Reading to review the State of Michigan Project Management Methodology, which provides another good example of an information technology project management methodology.

Many organizations include project management in their methodologies for managing Six Sigma projects, which you will learn about in Chapter 8. Other organizations include project management in their software development methodologies, such as the **Rational Unified Process (RUP)** framework. RUP is an iterative software development process that focuses on team productivity and delivers software best practices to all team members. According to RUP expert Bill Cottrell, "RUP embodies industry-standard management and technical methods and techniques to provide a software engineering process

particularly suited to creating and maintaining component-based software system solutions."[4] Cottrell explains that you can tailor RUP to include the PMBOK process groups. Specifically, IBM Rational, the creators of RUP, found that it could adjust RUP input artifacts with PMBOK process inputs, RUP steps with PMBOK process tools and techniques, and RUP resulting artifacts with PMBOK process outputs.

What Went Right?

Jordan Telecom (JT), Jordan's only telecom operator, introduced new customized project management processes to improve efficiency and reduce costs in its Information Technology department. The first step the organization took was to acquire International Standards Organization (ISO) 9000 certification in April 2004 to make sure JT had documented processes that everyone followed. It also wanted to make sure its processes were optimized and that projects followed a customized methodology. JT created three lines of processes based on the size of the project: high, medium, or low. JT used information from the *PMBOK® Guide* and PMI's Organizational Project Management Maturity Model to assess the maturity of JT's Information Technology department and design and develop a customized information technology project management process. Rula Ammuri, JT's Chief Information Officer, believes this new methodology will result in a 40-50 percent increase in productivity. Ammuri said, "I believe that optimizing our process and working according to a methodology will have an enhancement in the organization."[5]

The following section describes an example of applying the project management process groups to a project at JWD Consulting. It uses some of the ideas from the *PMBOK® Guides 2000* and *2004*, some ideas from the BlueCross BlueShield of Michigan methodology, some ideas from Six Sigma and RUP, and some new ideas to meet unique project needs. This example also includes the use of Microsoft Project to demonstrate how project management software can assist in several aspects of managing a project. Several templates will illustrate how project teams prepare various project management documents. Details on creating many of the documents shown are provided in later chapters, so do not worry if you do not understand everything right now. You might want to read this section again to enhance your learning. The following fictitious case provides an example of the elements involved in managing a project from start to finish.

[4] Cottrell, Bill, "Standards, compliance, and Rational Unified Process, Part I: Integrating RUP and the PMBOK," IBM Developerworks, (May 10, 2004).

[5] Al-Tamimi, Fairooz, "Jordanian Company Uses PMI Methods to 'Go Global,' Improve Productivity," *PMI Today* (August 2004).

CASE STUDY: JWD CONSULTING'S PROJECT MANAGEMENT INTRANET SITE PROJECT

Project Initiation

In project management, initiating includes recognizing and starting a new project. An organization should put considerable thought into project selection to ensure that it initiates the right kinds of projects for the right reasons. It is better to have a moderate or even small amount of success on an important project than huge success on one that is unimportant. The selection of projects for initiation, therefore, is crucial, as is the selection of project managers. Ideally, the project manager would be involved in initiating a project, but often the project manager is selected after many initiation decisions have already been made. You will learn more about project selection in Chapter 4, Project Integration Management. Organizations must also understand and plan for the ongoing support that is often required after implementing a new system or other product or service resulting from a project.

It is important to remember that strategic planning should serve as the foundation for deciding which projects to pursue. The organization's strategic plan expresses the vision, mission, goals, objectives, and strategies of the organization. It also provides the basis for information technology project planning. Information technology is usually a support function in an organization, so it is critical that the people initiating information technology projects understand how those projects relate to current and future needs of the organization. For example, JWD Consulting's main business is providing consulting services to other organizations, not developing its own intranet. Information systems, therefore, must support the firm's business goals, such as providing consulting services more effectively and efficiently.

An organization may initiate information technology projects for several reasons, but the most important reason is to support business objectives. Providing a good return on investment at a reasonable level of risk is also important, especially in tough economic times. As mentioned in the opening case, JWD Consulting wants to follow an exemplary process for managing its projects since its core business is helping other organizations manage projects. Developing an intranet to share its project management knowledge could help JWD Consulting reduce internal costs by working more effectively, and by allowing existing and potential customers to access some of the firm's information. JWD Consulting could also increase revenues by bringing in more business.

The *PMBOK® Guide 2004* includes only two items as outputs of the initiating process group: the project charter and the preliminary project scope statement, created as part of project integration management. This differs from the *PMBOK® Guide 2000*, which lists project scope management as the only knowledge area

involved in initiation and identifies four outputs—the project charter, assignment of the project manager, clarification of constraints, and a list of assumptions.

JWD Consulting also believes it is important to identify key project stakeholders and to write a business case for the project during project initiation. Some organizations require an approved corporate project request and a more detailed business case before project initiation begins. Other organizations require these items in a phase called pre-initiation. Remember that it is important to tailor the project management process to meet unique project needs.

Erica, head of the Project Management Office for JWD Consulting, has reviewed possible outputs of project initiation and tailored them to meet the needs of the Project Management Intranet Site Project. Since the outputs are needed but have not yet been completed, she includes the tasks of identifying stakeholders and developing a business case under the initiating process. JWD Consulting does not require formal paperwork for internal project requests, so she decides not to include that item. The project's business case includes a clarification of constraints and a list of assumptions as well as several items often included in a preliminary scope statement, so she decides not to include those items as separate outputs of initiation. The project charter will include the preliminary budget and schedule information for the project. Table 3-2 summarizes the desired outputs of project initiation for this particular project. Note that Erica is tailoring information to meet the needs of her project and organization. She knows that her project requires a strong business case, and she knows that it is crucial to identify key stakeholders early in her organization.

Table 3-2: Outputs of Project Initiation

Project manager assigned
Key stakeholders identified
Business case completed
Project charter completed and signed

As described in the opening case, Joe Fleming, the CEO at JWD Consulting, has assigned Erica Bell as the project manager for the intranet project, so that particular initiating task is finished. Erica has managed several projects in the past, and as the head of the firm's Project Management Office, she has expertise that would be instrumental to this project's success.

Erica met with Joe Fleming, the project's sponsor, to help identify other key stakeholders for this project. They decided to contact one full-time consultant with an outstanding record, Michael Chen, one part-time consultant, Jessie Faue, who was new to the company and supported the Project Management Office, and two members of the Information Technology department who supported the current intranet, Kevin Dodge and Cindy Dawson. They also knew

that client inputs would be important for this project, so Joe agreed to call the CEOs of two of the firm's largest clients to see if they would be willing to provide representatives to work on this project at their own expense. After Joe and Erica made the preliminary contacts, Erica documented the stakeholders' roles, names, organizations, and contact information. All of the internal staff Joe and Erica recommended agreed to work on the project, and the two client representatives would be Kim Phuong and Page Miller. Erica would have these stakeholders review and sign the project charter.

Erica drafted a business case for the project, getting input and feedback from Joe, one of her senior staff members in the Project Management Office, and a member of the Finance department. Table 3-3 provides the business case. (Note that this example and others are abbreviated examples. See the companion Web site and the author's Web site, *www.kathyschwalbe.com*, for additional examples of business cases and other project documents and to download a business case template and other templates. You will learn how to perform financial calculations in later chapters.) Notice that the following information is included in the business case:

- Introduction
- Business Objective
- Current situation and problem/opportunity statement
- Critical assumptions and constraints
- Analysis of options and recommendation
- Preliminary project requirements
- Budget estimate and financial analysis
- Schedule estimate
- Potential risks
- Exhibits

Since this project is relatively small and is for an internal sponsor, the business case is not as long as many other business cases. Erica reviewed the business case with Joe before proceeding to develop the project charter. Joe agreed that the project was worth pursuing, and he told Erica to proceed with developing the project charter to officially recognize the existence of this project.

Table 3-3: JWD Consulting's Business Case

1.0 INTRODUCTION/BACKGROUND

JWD Consulting's core business goal is to provide world-class project management consulting services to various organizations. The CEO, Joe Fleming, believes the firm can streamline operations and increase business by providing information related to project management on its intranet site, making some information and services accessible to current and potential clients.

Table 3-3: JWD Consulting's Business Case (continued)

2.0 Business Objective

JWD Consulting's strategic goals include continuing growth and profitability. The Project Management Intranet Site Project will support these goals by increasing visibility of the firm's expertise to current and potential clients by allowing client and public access to some sections of the intranet. It will also improve profitability by reducing internal costs by providing standard tools, techniques, templates, and project management knowledge to all internal consultants. Since JWD Consulting focuses on identifying profitable projects and measuring their value after completion, this project must meet those criteria.

3.0 Current Situation and Problem/Opportunity Statement

JWD Consulting has a corporate Web site as well as an intranet. The firm currently uses the Web site for marketing information. The primary use of the intranet is for human resource information, such as where consultants enter their hours on various projects, change and view their benefits information, access an online directory and Web-based e-mail system, and so on. The firm also uses an enterprise-wide project management system to track all project information, focusing on the status of deliverables and meeting scope, time, and cost goals. There is an opportunity to provide a new section on the intranet dedicated to sharing consultants' project management knowledge across the organization. JWD Consulting only hires experienced consultants and gives them freedom to manage projects as they see fit. However, as the business grows and projects become more complex, even experienced project managers are looking for suggestions on how to work more effectively.

4.0 Critical Assumption and Constraints

The proposed intranet site must be a valuable asset for JWD Consulting. Current consultants and clients must actively support the project, and it must pay for itself within one year by reducing internal operating costs and generating new business. The Project Management Office manager must lead the effort, and the project team must include participants from several parts of the company, as well as current client organizations. The new system must run on existing hardware and software, and it should require minimal technical support. It must be easily accessible by clients and the public yet secure from unauthorized users.

5.0 Analysis of Options and Recommendation

There are three options for addressing this opportunity:

1. Do nothing. The business is doing well, and we can continue to operate without this new project.
2. Purchase access to specialized software to support this new capability with little in-house development.
3. Design and implement the new intranet capabilities in-house using mostly existing hardware and software.

Based on discussions with stakeholders, we believe that option 3 is the best option.

6.0 Preliminary Project Requirements

The main features of the project management intranet site include the following:

1. Access to several project management templates and tools. Users must be able to search for templates and tools, read instructions on using these templates and tools, and see examples of how to apply them to real projects. Users must also be able to submit new templates and tools, which should be first screened or edited by the Project Management Office.

Table 3-3: JWD Consulting's Business Case (continued)

2. Access to relevant project management articles. Many consultants and clients feel as though there is an information overload when they research project management information. They often waste time they should be spending with their clients. The new intranet should include access to several important articles on various project management topics, which are searchable by topic, and allow users to request the Project Management Office staff to find additional articles to meet their needs.
3. Links to other, up-to-date Web sites, with brief descriptions of the main features of the external site.
4. An "Ask the Expert" feature to help build relationships with current and future clients and share knowledge with internal consultants.
5. Appropriate security to make the entire intranet site accessible to internal consultants and certain sections accessible to others.
6. The ability to charge money for access to some information. Some of the information and features of the intranet site should prompt external users to pay for the information or service. Payment options should include a credit card option or similar online payment transactions. After the system verifies payment, the user should be able to access or download the desired information.
7. Other features suggested by users, if they add value to the business.

7.0 Budget Estimate and Financial Analysis

A preliminary estimate of costs for the entire project is $140,000. This estimate is based on the project manager working about 20 hours per week for six months and other internal staff working a total of about 60 hours per week for six months. The customer representatives would not be paid for their assistance. A staff project manager would earn $50 per hour. The hourly rate for the other project team members would be $70 per hour, since some hours normally billed to clients may be needed for this project. The initial cost estimate also includes $10,000 for purchasing software and services from suppliers. After the project is completed, maintenance costs of $40,000 are included for each year, primarily to update the information and coordinate the "Ask the Expert" feature and online articles.

Projected benefits are based on a reduction in hours consultants spend researching project management information, appropriate tools and templates, and so on. Projected benefits are also based on a small increase in profits due to new business generated by this project. If each of more than 400 consultants saved just 40 hours each year (less than one hour per week) and could bill that time to other projects that generate a conservative estimate of $10 per hour in *profits*, then the projected benefit would be $160,000 per year. If the new intranet increased business by just 1 percent, using past profit information, increased profits due to new business would be at least $40,000 each year. Total projected benefits, therefore, are about $200,000 per year.

Exhibit A summarizes the projected costs and benefits and shows the estimated net present value (NPV), return on investment (ROI), and year in which payback occurs. It also lists assumptions made in performing this preliminary financial analysis. All of the financial estimates are very encouraging. The estimated payback is within one year, as requested by the sponsor. The NPV is $272,800, and the discounted ROI based on a three-year system life is excellent at 112 percent.

8.0 Schedule Estimate

The sponsor would like to see the project completed within six months, but there is some flexibility in the schedule. We also assume that the new system will have a useful life of at least three years.

Table 3-3: JWD Consulting's Business Case (continued)

9.0 Potential Risks

There are several risks involved with this project. The foremost risk is a lack of interest in the new system by our internal consultants and external clients. User inputs are crucial for populating information into this system and realizing the potential benefits from using the system. There are some technical risks in choosing the type of software used to search the system, check security, process payments, and so on, but the features of this system all use proven technologies. The main business risk is investing the time and money into this project and not realizing the projected benefits.

10.0 Exhibits

Exhibit A: Financial Analysis for Project Management Intranet Site Project

Discount rate	**8%**				
Assume the project is done in about 6 months			**Year**		
	0	**1**	**2**	**3**	**Total**
Costs	140,000	40,000	40,000	40,000	
Discount factor	1	0.93	0.86	0.79	
Discounted costs	140,000	37,037	34,294	31,753	243,084
Benefits	0	200,000	200,000	200,000	
Discount factor	1	0.93	0.86	0.79	
Discounted benefits	0	186,185	171,468	158,766	515,419
Discounted benefits - costs	(140,000)	148,148	137,174	127,013	
Cumulative benefits - costs	(140,000)	8,148	145,322	**272,336**	← **NPV**
		Payback in Year 1			
Discounted life cycle ROI----------->	**112%**				
Assumptions					
Costs	# hours				
PM (500 hours, $50/hour)	25,000				
Staff (1500 hours, $70/hour)	105,000				
Outsourced software and services	10,000				
Total project costs (all applied in year 0)	140,000				
Benefits					
# consultants	400				
Hours saved	40				
$/hour profit	10				
Benefits from saving time	160,000				
Benefits from 1% increase in profits	40,000				
Total annual projected benefits	200,000				

Erica drafted a project charter and had the project team members review it before showing it to Joe. Joe made a few minor changes, which Erica incorporated, and then all the key stakeholders signed the project charter. Table 3-4 shows the final project charter (see Chapter 4 for more information on project charters). Note the items included on the project charter and its short length. JWD Consulting believes that project charters should preferably be one or two pages long, and they may refer to other documents, such as a business case, as needed. Erica felt the most important parts of the project charter were the signatures of key stakeholders and their individual comments. It is hard to get stakeholders to agree on even a one-page project charter, so everyone has a

chance to make their concerns known in the comments section. Note that Michael Chen, the senior consultant asked to work on the project, was concerned about working on this project when he felt that his other assignments with external clients might have a higher priority. He offered to have an assistant help as needed. The information technology staff members mentioned their concerns about testing and security issues. Erica knew that she would have to consider these concerns when managing the project.

Table 3-4: Project Charter

Project Title: Project Management Intranet Site Project

Project Start Date: May 2, 2005 **Projected Finish Date:** November 4, 2005

Budget Information: The firm has allocated $140,000 for this project. The majority of costs for this project will be internal labor. An initial estimate provides a total of 80 hours per week.

Project Manager: Erica Bell, (310) 555-5896, erica_bell@jwdconsulting.com

Project Objectives: Develop a new capability accessible on JWD Consulting's intranet site to help internal consultants and external customers manage projects more effectively. The intranet site will include several templates and tools that users can download, examples of completed templates and related project management documents used on real projects, important articles related to recent project management topics, an article retrieval service, links to other sites with useful information, and an "Ask the Expert" feature, where users can post questions they have about their projects and receive advice from experts in the field. Some parts of the intranet site will be accessible free to the public, other parts will only be accessible to current customers and/or internal consultants, and other parts of the intranet site will be accessible for a fee.

Approach:

- Develop a survey to determine critical features of the new intranet site and solicit input from consultants and customers.
- Review internal and external templates and examples of project management documents.
- Research software to provide security, manage user inputs, and facilitate the article retrieval and "Ask the Expert" features.
- Develop the intranet site using an iterative approach, soliciting a great deal of user feedback.
- Determine a way to measure the value of the intranet site in terms of reduced costs and new revenues, both during the project and one year after project completion.

ROLES AND RESPONSIBILITIES:

NAME	ROLE	POSITION	CONTACT INFORMATION
Joe Fleming	Sponsor	JWD Consulting, CEO	joe_fleming@jwdconsulting.com
Erica Bell	Project Manager	JWD Consulting, manager	erica_bell@jwdconsulting.com
Michael Chen	Team Member	JWD Consulting, senior consultant	michael_chen@jwdconsulting.com

Table 3-4: Project Charter (continued)

NAME	ROLE	POSITION	CONTACT INFORMATION
Jessie Faue	Team Member	JWD Consulting, consultant	jessie_faue@jwdconsulting.com
Kevin Dodge	Team Member	JWD Consulting, IT department	kevin_dodge@jwdconsulting.com
Cindy Dawson	Team Member	JWD Consulting, IT department	cindy_dawson@jwdconsulting.com
Kim Phuong	Advisor	Client representative	kim_phuong@client1.com
Page Miller	Advisor	Client representative	page_miller@client2.com

Comments: (Handwritten or typed comments from above stakeholders, if applicable)

"I will support this project as time allows, but I believe my client projects take priority. I will have one of my assistants support the project as needed." —Michael Chen

"We need to be extremely careful testing this new system, especially the security in giving access to parts of the intranet site to the public and clients." —Kevin Dodge and Cindy Dawson

Project Planning

Planning is often the most difficult and unappreciated process in project management. Because planning is not always used to facilitate action, many people view planning negatively. The main purpose of project plans, however, is *to guide project execution*. To guide execution, plans must be realistic and useful, so a fair amount of time and effort must go into the planning process; people knowledgeable with the work need to plan the work.

Table 3-5 lists the project management knowledge areas, processes, and outputs of project planning according to the *PMBOK® Guide 2004*. There are many potential outputs from the planning process group, and every knowledge area is included. Just a few planning documents from JWD Consulting's Project Management Intranet Site Project are provided in this chapter as examples. Recall that the *PMBOK® Guide 2004* is only a guide, so many organizations may have different planning outputs based on their particular needs.

Table 3-5: Planning Processes and Outputs

KNOWLEDGE AREA	PLANNING PROCESS	OUTPUTS
Project Integration Management	Develop project management plan	■ Project management plan
Project Scope Management	Scope planning	■ Project scope management plan
	Scope definition	■ Project scope statement ■ Requested changes ■ Project scope management plan (updates)

Table 3-5: Planning Processes and Outputs (continued)

KNOWLEDGE AREA	PLANNING PROCESS	OUTPUTS
	Create WBS	■ Project scope statement (updates) ■ WBS and WBS dictionary ■ Scope baseline ■ Project scope management plan (updates) ■ Requested changes
Project Time Management	Activity definition	■ Activity list and attributes ■ Milestone list ■ Requested changes
	Activity sequencing	■ Project schedule network diagram ■ Activity list and attributes (updates) ■ Requested changes
	Activity resource estimating	■ Activity resource requirements ■ Activity attributes (updates) ■ Resource breakdown structure ■ Resource calendars (updates) ■ Requested changes
	Activity duration estimating	■ Activity duration estimates ■ Activity attributes (updates)
	Schedule development	■ Project schedule ■ Schedule model data ■ Schedule baseline ■ Updates to resource requirements, activity attributes, project calendar and project management plan ■ Requested changes
Project Cost Management	Cost estimating	■ Activity cost estimates and supporting detail ■ Requested change ■ Cost management plan (updates)
	Cost budgeting	■ Cost baseline ■ Project funding requirements ■ Cost management plan (updates) ■ Requested changes
Project Quality Management	Quality planning	■ Quality management plan ■ Quality metrics ■ Quality checklists ■ Process improvement plan ■ Quality baseline ■ Project management plan (updates)
Project Human Resource Management	Human resource planning	■ Roles and responsibilities ■ Project organization charts ■ Staffing management plan

Table 3-5: Planning Processes and Outputs (continued)

KNOWLEDGE AREA	PLANNING PROCESS	OUTPUTS
Project Communications Management	Communications planning	■ Communications management plan
Project Risk Management	Risk management planning	■ Risk management plan
	Risk identification	■ Risk register
	Qualitative risk analysis	■ Risk register (updates)
	Quantitative risk analysis	■ Risk register (updates)
	Risk response planning	■ Risk register (updates) ■ Project management plan (updates) ■ Risk-related contractual agreements
Project Procurement Management	Plan purchases and acquisitions	■ Procurement management plan ■ Contract statement of work ■ Make-or-buy decisions ■ Requested changes
	Plan contracting	■ Procurement documents ■ Evaluation criteria ■ Contract statement of work (updates)

Since the Project Management Intranet Site Project is relatively small, Erica believes some of the most important planning documents to focus on are the following:

- A team contract (not listed in Table 3-5, which is based on the *PMBOK® Guide 2004*)
- A project scope statement
- A work breakdown structure (WBS)
- A project schedule, in the form of a Gantt chart with all dependencies and resources entered
- A list of prioritized risks (part of a risk register)

All of these documents, as well as other project-related information, will be available to all team members on a project Web site. JWD Consulting has used project Web sites for several years, and has found that they really help facilitate communications and document project information. For larger projects, JWD Consulting also creates project organization charts, a formal communications management plan, a quality management plan, detailed cost estimates, procurement plans, and other planning documents. You will learn more about these documents by knowledge area in the following chapters. Appendix D provides templates for creating many of these documents.

Soon after the project team signed the project charter, Erica organized a kick-off meeting for the Project Management Intranet Site Project. An important part of the meeting was helping the project team get to know each other. Erica had met and talked to each member separately, but this was the first time the project team would all meet each other. Jessie Faue worked in the Project Management Office with Erica, so they knew each other well, but Jessie was new to the company and did not know any of the other team members. Michael Chen was a senior consultant and often worked on the highest priority projects for external clients. He attended the kick-off meeting with his assistant, Jill Anderson, who would also support the project when Michael was too busy. Everyone valued Michael's expertise, and he was extremely straightforward in dealing with people. He also knew both of the client representatives from past projects. Kevin Dodge was JWD Consulting's intranet guru who tended to focus on technical details. Cindy Dawson was also from the Information Technology department and had experience working as a business consultant and negotiating with outside suppliers. Kim Phuong and Page Miller, the two client representatives, were excited about the project, but they were wary of sharing sensitive information about their company.

Erica had everyone introduce him or herself, and then she facilitated an ice-breaker activity so everyone would be more relaxed. She asked everyone to describe his or her dream vacation, assuming cost was no issue. This activity helped everyone get to know each other and show different aspects of their personalities. Erica knew that it was important to build a strong team and have everyone work well together.

Erica then explained the importance of the project, reviewing the signed project charter. She explained that an important tool to help a project team work together was to have members develop a team contract that everyone felt comfortable signing. JWD Consulting believed in using team contracts for all projects to help promote teamwork and clarify team communications. She explained the main topics covered in a team contract and showed them a team contract template. She then had the team members form two smaller groups, with one consultant, one Information Technology department member, and one client representative in each group. These smaller groups made it easier for everyone to contribute ideas. Each group shared their ideas for what should go into the contract, and then they worked together to form one project team contract. Table 3-6 shows the resulting team contract, which took about ninety minutes to create. Erica could see that there were different personalities on this team, but she felt they all could work together well.

Table 3-6: Team Contract

Code of Conduct: As a project team, we will:

- Work proactively, anticipating potential problems and working to prevent them.
- Keep other team members informed of information related to the project.
- Focus on what is best for the entire project team.

Table 3-6: Team Contract (continued)

Participation: We will:

- Be honest and open during all project activities.
- Encourage diversity in team work.
- Provide the opportunity for equal participation.
- Be open to new approaches and consider new ideas.
- Have one discussion at a time.
- Let the project manager know well in advance if a team member has to miss a meeting or may have trouble meeting a deadline for a given task.

Communication: We will:

- Decide as a team on the best way to communicate. Since a few team members cannot meet often for face-to-face meetings, we will use e-mail, a project Web site, and other technology to assist in communicating.
- Have the project manager facilitate all meetings and arrange for phone and video-conferences, as needed.
- Work together to create the project schedule and enter actuals into our enterprise-wide project management system by 4 p.m. every Friday.
- Present ideas clearly and concisely.
- Keep discussions on track and have one discussion at a time.

Problem Solving: We will:

- Encourage everyone to participate in solving problems.
- Only use constructive criticism and focus on solving problems, not blaming people.
- Strive to build on each other's ideas.

Meeting Guidelines: We will:

- Plan to have a face-to-face meeting the first and third Tuesday morning of every month.
- Meet more frequently the first month.
- Arrange for telephone or videoconferencing for participants as needed.
- Hold other meetings as needed.
- Record meeting minutes and send them out via e-mail within 24 hours of all project meetings, focusing on decisions made and action items from each meeting.
- Develop an agenda before all meetings with our project sponsor and client advisors.
- Document major issues and decisions related to the project and send them out via e-mail to all team members and the project sponsor.

Erica wanted to keep their meeting to its two-hour time limit. Their next task would be to clarify the scope of the project by developing a scope statement and WBS. She knew it took time to develop these documents, but she wanted to get a feel for what everyone thought were the main deliverables for this project, their roles in producing those deliverables, and what areas of the project scope needed clarification. She reminded everyone what their budget and schedule goals were so they would keep that in mind as they discussed the scope of the project. She also asked each person to provide the number of hours he or she would be available to work on this project each month for the next six months. She then had each person write down his or her answers to the following questions:

1. List one item that is most unclear to you about the scope of this project.
2. What other questions do you have or issues do you foresee about the scope of the project?

3. List what you believe to be the main deliverables for this project.
4. Which deliverables do you think you will help create or review?

Erica collected everyone's inputs. She explained that she would take this information and work with Jessie to develop the first draft of the scope statement that she would e-mail to everyone by the end of the week. She also suggested that they all meet again in one week to develop the scope statement further and to start creating the WBS for the project.

Erica and Jessie reviewed all the information and created the first draft of the scope statement. At their next team meeting, they discussed the scope statement and got a good start on the WBS. Table 3-7 shows a portion of the scope statement that Erica created after a few more e-mails and another team meeting. Note that the scope statement lists the importance of documenting the product characteristics and requirements, summarizes the deliverables, and describes project success criteria.

Table 3-7: Scope Statement (Draft Version)

Project Title: Project Management Intranet Site Project

Date: May 18, 2005 **Prepared by:** Erica Bell, Project Manager, (310) 555-5896, erica_bell@jwdconsulting.com

Project Justification: Joe Fleming, CEO of JWD Consulting, requested this project to assist the company in meeting its strategic goals. The new intranet site will increase visibility of the company's expertise to current and potential clients though the sections of the intranet to which they will be accessible. It will also help reduce internal costs and improve profitability by providing standard tools, techniques, templates, and project management knowledge to all internal consultants. The budget for the project is $140,000. An additional $40,000 per year will be required for operational expenses after the project is completed. Estimated benefits are $200,000 each year. It is important to focus on the system paying for itself within one year.

Product Characteristics and Requirements:

1. Templates and tools: The intranet site will allow authorized users to download files they can use to create project management documents and to help them use project management tools. These files will be in Microsoft Word, Excel, Access, Project, or in HTML or PDF format, as appropriate.
2. User submissions: Users will be encouraged to e-mail files with sample templates and tools to the Webmaster. The Webmaster will forward the files to the appropriate person for review and then post the files to the intranet site, if desired.
3. Articles: Articles posted on the intranet site will have appropriate copyright permission. The preferred format for articles will be PDF. The project manager may approve other formats.
4. Requests for articles: The intranet site will include a section for users to request someone from the Project Management Office (PMO) at JWD Consulting to research appropriate articles for them. The PMO manager must first approve the request and negotiate payments, if appropriate.
5. Links: All links to external sites will be tested on a weekly basis. Broken links will be fixed or removed within five working days of discovery.

Table 3-7: Scope Statement (Draft Version) (continued)

6. The "Ask the Expert" feature must be user-friendly and capable of soliciting questions and immediately acknowledging that the question has been received in the proper format. The feature must also be capable of forwarding the question to the appropriate expert (as maintained in the system's expert database) and capable of providing the status of questions that are answered. The system must also allow for payment for advice, if appropriate.
7. Security: The intranet site must provide several levels of security. All internal employees will have access to the entire intranet site when they enter their security information to access the main, corporate intranet. Part of the intranet will be available to the public from the corporate Web site. Other portions of the intranet will be available to current clients based on verification with the current client database. Other portions of the intranet will be available after negotiating a fee or entering a fixed payment using pre-authorized payment methods.
8. Search feature: The intranet site must include a search feature for users to search by topic, key words, etc.
9. The intranet site must be accessible using a standard Internet browser. Users must have appropriate application software to open several of the templates and tools.
10. The intranet site must be available 24 hours a day, 7 days a week, with one hour per week for system maintenance and other periodic maintenance, as appropriate.

Summary of Project Deliverables

Project management-related deliverables: Business case, charter, team contract, scope statement, WBS, schedule, cost baseline, status reports, final project presentation, final project report, lessons-learned report, and any other documents required to manage the project.

Product-related deliverables:

1. Survey: Survey current consultants and clients to help determine desired content and features for the intranet site.
2. Files for templates: The intranet site will include templates for at least twenty documents when the system is first implemented, and it will have the capacity to store up to one hundred documents. The project team will decide on the initial twenty templates based on survey results.
3. Examples of completed templates: The intranet site will include examples of projects that have used the templates available on the intranet site. For example, if there is a template for a business case, there will also be an example of a real business case that uses the template.
4. Files for tools: The intranet site will include information on how to use several project management tools, including the following as a minimum: work breakdown structures, Gantt charts, network diagrams, cost estimates, and earned value management. Where appropriate, sample files will be provided in the application software appropriate for the tool. For example, Microsoft Project files will be available to show sample work breakdown structures, Gantt charts, network diagrams, cost estimates, and applications of earned value management. Excel files will be available for sample cost estimates and earned value management charts.
5. Example applications of tools: The intranet site will include examples of real projects that have applied the tools listed in number 4 above.
6. Articles: The intranet site will include at least ten useful articles about relevant topics in project management. The intranet site will have the capacity to store at least 1000 articles in PDF format with an average length of ten pages each.

Table 3-7: Scope Statement (Draft Version) (continued)

7. Links: The intranet site will include links with brief descriptions for at least twenty useful sites. The links will be categorized into meaningful groups.
8. Expert database: In order to deliver an "Ask the Expert" feature, the system must include and access a database of approved experts and their contact information. Users will be able to search for experts by pre-defined topics.
9. User Requests feature: The intranet site will include an application to solicit and process requests from users.
10. Intranet site design: An initial design of the new intranet site will include a site map, suggested formats, appropriate graphics, etc. The final design will incorporate comments from users on the initial design.
11. Intranet site content: The intranet site will include content for the templates and tools section, articles section, article retrieval section, links section, "Ask the Expert" section, User Requests feature, security, and payment features.
12. Test plan: The test plan will document how the intranet site will be tested, who will do the testing, and how bugs will be reported.
13. Promotion: A plan for promoting the intranet site will describe various approaches for soliciting inputs during design. The promotion plan will also announce the availability of the new intranet site.
14. Project benefit measurement plan: A project benefit plan will measure the financial value of the intranet site.

Project Success Criteria: Our goal is to complete this project within six months for no more than $140,000. The project sponsor, Joe Fleming, has emphasized the importance of the project paying for itself within one year after the intranet site is complete. To meet this financial goal, the intranet site must have strong user inputs. We must also develop a method for capturing the benefits while the intranet site is being developed and tested, and after it is rolled out. If the project takes a little longer to complete or costs a little more than planned, the firm will still view it as a success if it has a good payback and helps promote the firm's image as an excellent consulting organization.

As the project team worked on the scope statement, they also developed the work breakdown structure (WBS) for the project. The WBS is a very important tool in project management because it provides the basis for deciding how to do the work. The WBS also provides a basis for creating the project schedule and performing earned value management for measuring and forecasting project performance. Erica and her team decided to use the project management process groups as the main categories for the WBS (Figure 3-2). They included completed work from the initiating process to provide a complete picture of the project's scope. The group also wanted to list several milestones on their schedule, such as the completion of key deliverables, so they prepared a separate list of milestones that they would include on the Gantt chart. You will learn more about creating a WBS in Chapter 5, Project Scope Management.

1.0 Initiating
    1.1 Determine/assign project manager
    1.2 Identify key stakeholders
    1.3 Prepare business case
    1.4 Prepare project charter
2.0 Planning
    2.1 Hold project kickoff meeting
    2.2 Prepare team contract
    2.3 Prepare scope statement
    2.4 Prepare WBS
    2.5 Prepare schedule and cost baseline
        2.5.1 Determine task resources
        2.5.2 Determine task durations
        2.5.3 Determine task dependencies
        2.5.4 Create draft Gantt chart
        2.5.5 Review and finalize Gantt chart
    2.6 Identify, discuss, and prioritize risks
3.0 Executing
    3.1 Survey
    3.2 User inputs
    3.3 Intranet site content
        3.3.1 Templates and tools
        3.3.2 Articles
        3.3.3 Links
        3.3.4 Ask the Expert
        3.3.5 User requests feature
    3.4 Intranet site design
    3.5 Intranet site construction
    3.6 Intranet site testing
    3.7 Intranet site promotion
    3.8 Intranet site roll-out
    3.9 Project benefits measurement
4.0 Controlling
    4.1 Status reports
5.0 Closing
    5.1 Prepare final project report
    5.2 Prepare final project presentation
    5.3 Lessons learned

Figure 3-2. JWD Consulting Intranet Project Work Breakdown Structure (WBS)

After preparing the WBS, the project team held another face-to-face meeting to develop the project schedule, following the steps outlined in section 2.5 of the WBS. Several of the project schedule tasks are dependent on one another. For example, the intranet site testing was dependent on the construction and completion of the content tasks. Everyone participated in the development of the schedule, especially the tasks on which each would be working. Some of the tasks were broken down further so the team members had a better understanding of what they had to do and when. They also kept their workloads and cost constraints in mind when developing the duration estimates. For example, Erica was scheduled to work twenty hours per week on this project, and the other project team members combined should not spend more than sixty hours per week on average for the project. As team members provided duration estimates, they also estimated how many work hours they would spend on each task.

After the meeting, Erica worked with Jessie to enter all of the information into Microsoft Project. Erica was using the intranet site project to train Jessie in applying several project management tools and templates. They entered all of the tasks, duration estimates, and dependencies to develop the Gantt chart. Erica decided to enter the resource and cost information after reviewing the schedule. Their initial inputs resulted in a completion date a few weeks later than planned. Erica and Jessie reviewed the critical path for the project, and Erica had to shorten the duration estimates for a few critical tasks in order to meet their schedule goal of completing the project within six months. She talked to the team members working on those tasks, and they agreed that they could plan to work more hours each week on those tasks in order to complete them on time. Erica considered adding a project buffer at the end of the project, but she was confident they could meet the schedule goal. You will learn more about project buffers and developing project schedules in Chapter 6, Project Time Management.

Figure 3-3 shows the resulting Gantt chart created in Microsoft Project. Only the executing tasks are expanded to show the subtasks under that category. Figure 3-4 shows part of the network diagram, again emphasizing the executing tasks. The highlighted boxes represent tasks on the critical path. (You will learn how to use Project 2003 in Appendix A. Chapter 6, Project Time Management, explains how to use network diagrams to find the critical path and explains Gantt chart symbols.) The baseline schedule projects a completion date of November 1, 2005. The project charter had a planned completion date of November 4, 2005. Erica wanted to complete the project on time, and although three extra days was not much of a buffer, she felt the baseline schedule was very realistic. She would do her best to help everyone meet their deadlines.

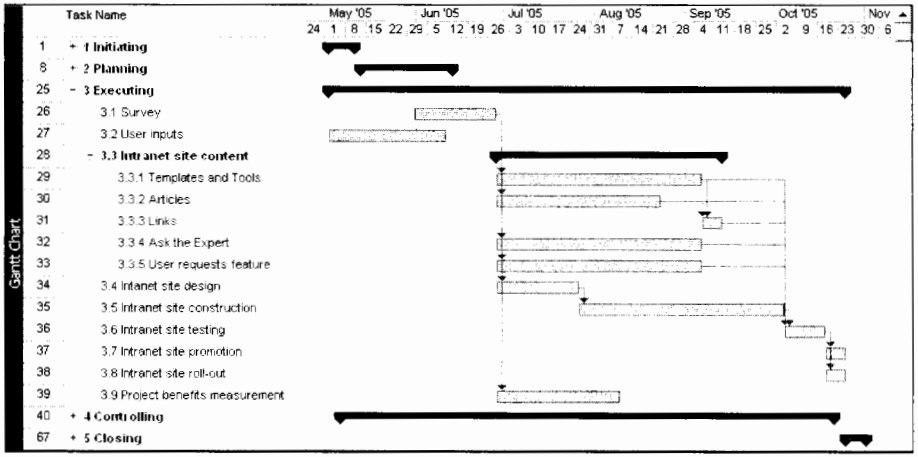

Figure 3-3. JWD Consulting Intranet Site Project Baseline Gantt Chart

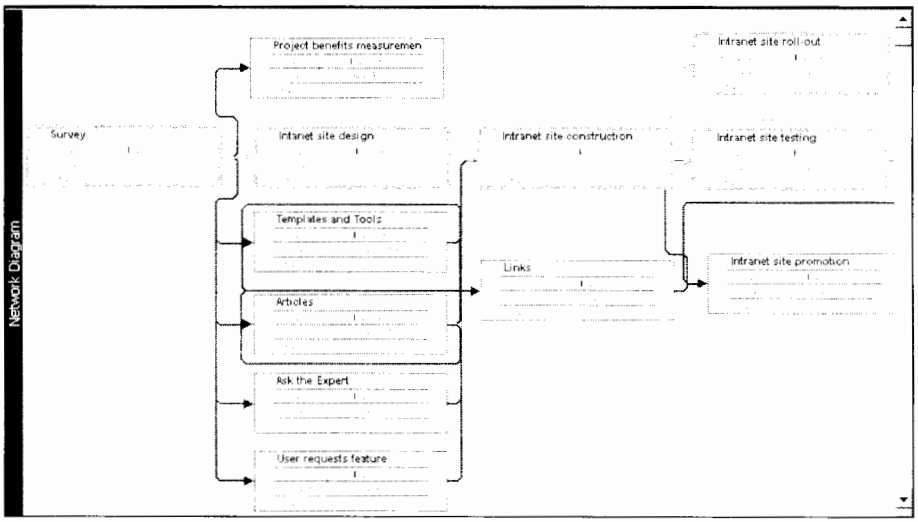

Figure 3-4. JWD Consulting Intranet Site Project Partial Network Diagram

The majority of the costs for this project were internal labor, and the team kept their labor hour constraints in mind when developing task duration estimates. Erica and Jessie entered each project team member's name and labor rate in the resource sheet for their Microsoft Project file. The client representatives were not being paid for their time, so she left their labor rates at the default value of zero. Erica had also included $10,000 for procurement in the financial

analysis she prepared for the business case, and she showed Jessie how to enter that amount as a fixed cost split equally between the "Ask the Expert" and User Requests features, where she thought they would have to purchase some external software and/or services. Erica then helped Jessie assign resources to tasks, entering the projected number of hours everyone planned to work each week on each task. They then ran several cost reports and made a few minor adjustments to resource assignments to make their planned total cost meet their budget constraints. Their cost baseline was very close to their planned budget of $140,000.

The last deliverable her team needed to create within the planning process group was a list of prioritized risks. This information will be updated and expanded as the project progresses to include information on root causes of the risks, warning signs that potential risks might occur, and response strategies for the risks. Erica reviewed the risks she had mentioned in the business case as well as the comments team members made on the project charter and in their team meetings. She held a special meeting for everyone to brainstorm and discuss potential risks. They posted all of the risks they identified on a probability/impact matrix, and then they grouped some of the ideas. There was only one risk in the high probability and high impact category, and several with medium impact in one or both categories. They chose not to list the low probability and low impact risks. After some discussion, the team developed the list of prioritized risks shown in Table 3-8.

Table 3-8: List of Prioritized Risks

RANKING	POTENTIAL RISK
1	Lack of inputs from internal consultants
2	Lack of inputs from client representatives
3	Security of new system
4	Outsourcing/purchasing for the article retrieval and "Ask the Expert" features
5	Outsourcing/purchasing for processing online payment transactions
6	Organizing the templates and examples in a useful fashion
7	Providing an efficient search feature
8	Getting good feedback from Michael Chen and other senior consultants
9	Effectively promoting the new system
10	Realizing the benefits of the new system within one year

Project Executing

Executing the project involves taking the actions necessary to ensure that activities in the project plan are completed. It also includes work required to introduce any new hardware, software, and procedures into normal

operations. The products of the project are produced during project execution, and it usually takes the most resources to accomplish this process. Table 3-9 lists the knowledge areas, executing processes, and outputs of project execution listed in the *PMBOK® Guide 2004*. Many project sponsors and customers focus on outputs or deliverables related to providing the products, services, or results desired from the project. Implementing solutions to problems, such as change requests or corrective actions, are also important outputs, as are the other outputs listed below.

Table 3-9: Executing Processes and Outputs

KNOWLEDGE AREA	EXECUTING PROCESS	OUTPUTS
Project Integration Management	Direct and manage project execution	■ Deliverables ■ Requested changes ■ Implemented solutions to problems (i.e., change requests, corrective actions, preventive actions, and defect repairs) ■ Work performance information
Project Quality Management	Perform quality assurance	■ Requested changes ■ Recommended corrective actions ■ Organizational process assets (updates) ■ Project management plan (updates)
Project Human Resource Management	Acquire project team	■ Project staff assignments ■ Resource availability ■ Staffing management plan (updates)
	Develop project team	■ Team performance assessment
Project Communications Management	Information distribution	■ Organizational process assets (updates) ■ Requested changes
Project Procurement Management	Request seller responses	■ Qualified sellers list ■ Procurement document package ■ Proposals
	Select sellers	■ Selected sellers ■ Contract ■ Contract management plan ■ Resource availability ■ Procurement management plan (updates) ■ Requested changes

For this relatively small project, Erica could work closely with all the team members to make sure they were producing the desired work results. She also used her networking skills to get input from other people in the firm and from external sources at no additional cost to the project. She knew that providing strong leadership and using good communication skills were crucial to good project execution. The firm did have a formal change request form, but primarily used

it for external projects. The firm also had contract specialists and templates for several procurement documents that the project team would use for the portions of the project they planned to outsource. See Appendix D for sample templates related to change requests and contracts. Chapter 4, Project Integration Management, discusses integrated change control, and Chapter 12, Project Procurement Management, describes various types of contracts and other procurement documents.

As mentioned earlier, Erica knew that Joe, the CEO and project sponsor, liked to see progress on projects through milestone reports, which are one type of project report. He also wanted Erica to alert him to any potential issues or problems. Table 3-10 shows a sample of a milestone report for the Project Management Intranet Site Project that Erica reviewed with Joe in mid-June. Erica met with most of her project team members often, and she talked to Joe about once a week to review progress on completing milestones and to discuss any other project issues. Although Erica could have used Project 2003 to create milestone reports, she instead used word processing software because this project was small, and she could more easily manipulate report format.

Table 3-10: Milestone Report as of 6/17/05

Milestone	Date	Status	Responsible	Issues/Comments
Initiating				
Project manager determined/assigned	5/2/05	Completed	Joe	
Business case created	5/6/05	Completed	Erica	
Project charter signed	5/10/05	Completed	Erica	
Planning				
Project kickoff meeting held	5/13/05	Completed	Erica	Went well
Team contract signed	5/13/05	Completed	Erica	
Scope statement completed	5/27/05	Completed	Erica	
WBS completed	5/31/05	Completed	Erica	
List of prioritized risks completed	6/3/05	Completed	Erica	Reviewed with sponsor and team
Schedule and cost baseline completed	6/13/05	Completed	Erica	
Executing				
Survey completed	6/28/05		Erica	Poor response so far!
Intranet site design completed	7/26/05		Kevin	
Project benefits measurement completed	8/9/05		Erica	

Table 3-10: Milestone Report as of 6/17/05 (continued)

Milestone	Date	Status	Responsible	Issues/Comments
User inputs collected	8/9/05		Jessie	
Articles completed	8/23/05		Jessie	
Templates and tools completed	9/6/05		Erica	
Ask the Expert completed	9/6/05		Michael	
User Requests feature completed	9/6/05		Cindy	
Links completed	9/13/05		Kevin	
Intranet site construction completed	10/4/05		Kevin	
Intranet site testing completed	10/18/05		Cindy	
Intranet site promotion completed	10/25/05		Erica	
Intranet site roll-out completed	10/25/05		Kevin	
Monitoring and Controlling				
Status reports	Every Friday		All	
Closing				
Final project presentation completed	10/27/05		Erica	
Sponsor sign-off on project completion	10/27/05		Joe	
Final project report completed	10/28/05		Erica	
Lessons-learned reports submitted	11/1/05		All	

Human resource issues often occur during project execution, especially conflicts. At several of the team meetings, Erica could see that Michael seemed to be bored and often left the room to make phone calls to clients. She talked to Michael about the situation, and she discovered that Michael was supportive of the project, but he knew he could only spend a minimal amount of time on it. He was much more productive outside of meetings, so Erica agreed to have Michael attend a minimal amount of project team meetings. She could see that Michael was contributing to the team by the feedback he provided and his leadership on the "Ask the Expert" feature for the intranet site. Erica adjusted her communication style to meet his specific needs.

Another problem occurred when Cindy was contacting potential suppliers for software to help with the "Ask the Expert" and User Requests features. Kevin wanted to write all of the software for the project himself, but Cindy knew it made better business sense to purchase these new software capabilities from a reliable source. Cindy had to convince Kevin that it was worth buying some software from other sources.

Cindy also discovered that their estimate of $10,000 was only about half the amount they needed. She discussed the problem with Erica, explaining the need for some custom development no matter which supplier they chose. Erica agreed that they should go with an outside source, and she asked their sponsor to approve the additional funds. Joe agreed, but he stressed the importance of still having the system pay for itself within a year.

Erica also had to ask Joe for help when the project team received a low response rate to their survey and requests for user inputs. Joe sent out an e-mail to all of JWD Consulting's consultants describing the importance of the project. He also offered a free family vacation and five extra vacation days to the person who provided the best examples of how they used tools and templates to manage their projects. Erica then received informative input from the consultants. Having effective communication skills and strong top management support are essential to good project execution.

Project Monitoring and Controlling

Monitoring and controlling is the process of measuring progress toward project objectives, monitoring deviation from the plan, and taking corrective action to match progress with the plan. Monitoring and controlling affects all other phases of the project life cycle. It also involves seven of the nine project management knowledge areas. Table 3-11 lists the knowledge areas, monitoring and controlling processes, and outputs, according to the *PMBOK® Guide 2004*.

Table 3-11: Monitoring and Controlling Processes and Outputs

KNOWLEDGE AREA	MONITORING AND CONTROLLING PROCESS	OUTPUTS
Project Integration Management	Monitor and control project work	■ Recommended corrective actions, preventive actions, and defect repair ■ Forecasts ■ Requested changes
	Integrated change control	■ Approved change requests, corrective actions, preventive actions, and defect repair ■ Rejected change requests ■ Project management plan (updates) ■ Project scope statement (updates) ■ Validated defect repair ■ Deliverables

Table 3-11: Monitoring and Controlling Processes and Outputs (continued)

KNOWLEDGE AREA	MONITORING AND CONTROLLING PROCESS	OUTPUTS
Project Scope Management	Scope verification	■ Accepted deliverables ■ Requested changes ■ Recommended corrective actions
	Scope change control	■ Project scope statement (updates) ■ WBS and dictionary (updates) ■ Scope baseline (updates) ■ Requested changes ■ Recommended corrective actions ■ Organizational process assets (updates) ■ Project management plan (updates)
Project Time Management	Schedule control	■ Schedule model data (updates) ■ Schedule baseline (updates) ■ Performance measurements ■ Requested changes ■ Recommended corrective actions ■ Organizational process assets (updates) ■ Activity list and attributes (updates) ■ Project management plan (updates)
Project Cost Management	Cost control	■ Cost estimate (updates) ■ Cost baseline (updates) ■ Performance measurements ■ Forecasted completion ■ Requested changes ■ Recommended corrective action ■ Organizational process assets (updates) ■ Project management plan (updates)
Project Quality Management	Perform quality control	■ Quality control measurements ■ Validated defect repair and deliverables ■ Quality baseline (updates) ■ Recommended corrective actions, preventive actions, and defect repair ■ Requested changes ■ Organizational process assets (updates) ■ Project management plan (updates)
Project Human Resource Management	Manage project team	■ Requested changes ■ Recommended corrective and preventive actions ■ Organizational process assets (updates) ■ Project management plan (updates)
Project Communications Management	Performance reporting	■ Performance reports ■ Forecasts ■ Requested changes ■ Recommended corrective actions ■ Organizational process assets (updates)

Table 3-11: Monitoring and Controlling Processes and Outputs (continued)

KNOWLEDGE AREA	MONITORING AND CONTROLLING PROCESS	OUTPUTS
	Manage stakeholders	■ Resolved issues ■ Approved change requests and corrective actions ■ Organizational process assets (updates) ■ Project management plan (updates)
Project Risk Management	Risk monitoring and control	■ Risk register (updates) ■ Requested changes ■ Recommended corrective and preventive actions ■ Organizational process assets (updates) ■ Project management plan (updates)
Project Procurement Management	Contract administration	■ Contract documentation ■ Requested changes ■ Recommended corrective actions ■ Organizational process assets (updates) ■ Project management plan (updates)

On the Project Management Intranet Site Project, there were several updates to the project management plan to reflect changes made to the project scope, schedule, and budget. Erica and other project team members took corrective action when necessary. For example, when they were not getting many responses to their survey, Erica asked Joe for help. When Cindy had trouble negotiating with a supplier, she got help from another senior consultant who had worked with that supplier in the past. Erica also had to request more funds for that part of the project.

Project team members submitted a brief status report every Friday. They were originally using a company template for status reports, but Erica found that by modifying the old template, she received better information to help her team work more effectively. She wanted team members not only to report what they did but also to focus on what was going well or not going well and why. This extra information helped team members reflect on the project's progress and identify areas in need of improvement. Table 3-12 is an example of one of Cindy's status reports.

Table 3-12: Sample Weekly Status Report

Project Name: Project Management Intranet Project
Team Member Name: Cindy Dawson, cindy_dawson@jwdconsulting.com
Date: August 5, 2005

Work completed this week:
-Worked with Kevin to start the intranet site construction
-Organized all the content files
-Started developing a file naming scheme for content files
-Continued work on "Ask the Expert" and User Requests features

Table 3-12: Sample Weekly Status Report (continued)

-Met with preferred supplier
-Verified that their software would meet our needs
-Discovered the need for some customization

Work to complete next week:
-Continue work on intranet site construction
-Prepare draft contract for preferred supplier
-Develop new cost estimate for outsourced work

What's going well and why:
The intranet site construction started well. The design was very clear and easy to follow. Kevin really knows what he's doing.

What's not going well and why:
It is difficult to decide how to organize the templates and examples. Need more input from senior consultants and clients.

Suggestions/Issues:
-Hold a special meeting to decide how to organize the templates and examples on the intranet site.
-Get some sample contracts and help in negotiating with the preferred supplier.

Project changes:
I think we can stay on schedule, but it looks like we'll need about $10,000 more for outsourcing. That's doubling our budget in that area.

In addition to status reports, an important tool for monitoring and controlling the project was using project management software. Each team member submitted his or her actual hours worked on tasks each Friday afternoon by 4 p.m. via the firm's enterprise-wide project management software. They were using the enterprise version of Microsoft Project 2003, so they could easily update their task information via the Web. Erica worked with Jessie to analyze the information, paying special attention to the critical path and earned value data. (See Chapter 6 on Project Time Management for more information on critical path analysis; Chapter 7 on Project Cost Management for a description of earned value management; and Appendix A for more information on using Project 2003 to help control projects.) Erica wanted to finish the project on time, even if it meant spending more money. Joe agreed with that approach, and approved the additional funding Erica projected they would need based on the earned value projections and the need to make up a little time on critical tasks.

Joe again emphasized the importance of the new system paying for itself within a year. Erica was confident that they could exceed the projected financial benefits, and she decided to begin capturing benefits as soon as the project team began testing the system. When she was not working on this project, Erica was managing JWD Consulting's Project Management Office (PMO), and she could already see how the intranet site would help her staff save time and make their consultants more productive. One of her staff members wanted to move into the consulting group, and she believed the PMO could continue to provide its

current services with one less person due to this new system—a benefit she had not considered before. Several of the firm's client contracts were based on performance and not hours billed, so she was excited to start measuring the value of the new intranet site to their consultants as well.

Project Closing

The closing process involves gaining stakeholder and customer acceptance of the final products and services and bringing the project, or project phase, to an orderly end. It includes verifying that all of the deliverables are complete, and it often includes a final presentation. Even though many information technology projects are canceled before completion, it is still important to formally close any project and reflect on what can be learned to improve future projects. As philosopher George Santayana said, "Those who cannot remember the past are condemned to repeat it."

It is also important to plan for and execute a smooth transition of the project into the normal operations of the company. Most projects produce results that are integrated into the existing organizational structure. For example, JWD Consulting's Project Management Intranet Site Project will require staff to support the intranet site after it is operational. Erica did include support costs of $40,000 per year for the projected three-year life of the new system. She also created a transition plan as part of the final report to provide for a smooth transition of the system into the firm's operations. The plan included a list of issues that had to be resolved before the firm could put the new intranet site into production. For example, Michael Chen would not be available to work on the intranet site after the six-month project was complete, so they had to know who would support the "Ask the Expert" feature and plan some time for Michael to work with him or her.

Table 3-13 lists the knowledge areas, processes, and outputs of project closing based on the *PMBOK® Guide 2004*. During the closing processes of any project, project team members should take the time to develop appropriate closing procedures, deliver the final product, service, or result of the project, and update organizational process assets, such as project files and a lessons-learned report. If the project team procured items during the project, they must formally complete or close out all contracts.

Table 3-13: Closing Processes and Output

KNOWLEDGE AREA	PROCESS	OUTPUTS
Project Integration Management	Close project	■ Administrative and contract closure procedures ■ Final product, service, or result ■ Organizational process assets (updates)
Project Procurement Management	Contract closure	■ Closed contracts ■ Organizational process assets (updates)

Erica and her team prepared a final report, final presentation, contract files, and lessons-learned report in closing the project. Erica reviewed the confidential, individual lessons-learned report from each team member and wrote one summary lessons-learned report to include in the final documentation, part of which is provided in Table 3-14. Notice the highlighted items, such as the importance of having a good kick-off meeting, working together to develop a team contract, using project management software, and communicating well with the project team and sponsor.

Table 3-14: Lessons-Learned Report (abbreviated)

Project Name: JWD Consulting Project Management Intranet Site Project
Project Sponsor: Joe Fleming
Project Manager: Erica Bell
Project Dates: May 2, 2005 – November 4, 2005
Final Budget: $150,000

1. Did the project meet scope, time, and cost goals?

   We did meet scope and time goals, but we had to request an additional $10,000, which the sponsor did approve.

2. What were the success criteria listed in the project scope statement?

   Below is what we put in our project scope statement under project success criteria:

   "Our goal is to complete this project within six months for no more than $140,000. The project sponsor, Joe Fleming, has emphasized the importance of the project paying for itself within one year after the intranet site is complete. To meet this financial goal, the intranet site must have strong user input. We must also develop a method for capturing the benefits while the intranet site is being developed and tested, and after it is rolled out. If the project takes a little longer to complete or costs a little more than planned, the firm will still view it as a success if it has a good payback and helps promote the firm's image as an excellent consulting organization."

3. Reflect on whether or not you met the project success criteria.

   As stated above, the sponsor was not too concerned about going over budget as long as the system would have a good payback period and help promote our firm's image. We have already documented some financial and image benefits of the new intranet site. For example, we have decided that we can staff the PMO with one less person, resulting in substantial cost savings. We have also received excellent feedback from several of our clients about the new intranet site.

4. In terms of managing the project, what were the main lessons your team learned from this project?

   The main lessons we learned include the following:

   - Having a good project sponsor was instrumental to project success. We ran into a couple of difficult situations, and Joe was very creative in helping us solve problems.
   - Teamwork was essential. It really helped to take time for everyone to get to know each other at the kick-off meeting. It was also helpful to develop and follow a team contract.
   - Good planning paid off in execution. We spent a fair amount of time developing a good project charter, scope statement, WBS, schedules, and so on. Everyone worked together to develop these planning documents, and there was strong buy-in.
   - Project management software was very helpful throughout the project.

Table 3-14: Lessons-Learned Report (abbreviated) (continued)

5. Describe one example of what went right on this project.
6. Describe one example of what went wrong on this project.
7. What will you do differently on the next project based on your experience working on this project?

Erica also had Joe sign a client acceptance form, one of the sample templates on the new intranet site that the project team suggested all consultants use when closing their projects.

Table 3-15 provides the table of contents for the final project report. The cover page included the project title, date, and team member names. (Templates for lessons-learned reports, client acceptance forms, and final project reports are included in Appendix D.) Notice the inclusion of a transition plan and a plan to analyze the benefits of the system each year in the final report. Also, notice that the final report includes attachments for all the project management and product-related documents. Erica knew how important it was to provide good final documentation on projects. The project team produced a hard copy of the final documentation and an electronic copy to store on the new intranet site for other consultants to use as desired.

Table 3-15: Final Project Report Table of Contents

1. Project Objectives
2. Summary of Project Results
3. Original and Actual Start and End Dates
4. Original and Actual Budget
5. Project Assessment (Why did you do this project? What did you produce? Was the project a success? What went right and wrong on the project?)
6. Transition Plan
7. Annual Project Benefits Measurement Approach

Attachments:

A. Project Management Documentation
   - Business case
   - Project charter
   - Team contract
   - Scope statement
   - WBS
   - Baseline and actual Gantt chart
   - List of prioritized risks
   - Milestone reports
   - Status reports
   - Contract files
   - Lessons-learned reports
   - Final presentation
   - Client acceptance form

Table 3-15: Final Project Report Table of Contents (continued)

B. Product-Related Documentation
- Survey and results
- Summary of user inputs
- Intranet site content
- Intranet site design documents
- Test plans and reports
- Intranet site promotion information
- Intranet site roll-out information
- Project benefits measurement information

Erica also organized a project closure luncheon for the project team right after their final project presentation. She used the luncheon to share lessons learned and celebrate a job well done!

The project management process groups—initiating, planning, executing, monitoring and controlling, and closing—provide a useful framework for understanding project management. They apply to most projects (information technology and non-information technology) and, along with the project management knowledge areas, help project managers see the big picture of managing a project in their particular organization.

CASE WRAP-UP

Erica Bell and her team finished the Project Management Intranet Site Project on Friday, November 4, 2005, as planned in their project charter. They did go over budget, however, but Joe had approved Erica's request for additional funds, primarily for purchasing external software and customization. Like any project, they had a few challenges, but they worked together as a team and used good project management to meet their sponsor's and users' needs. They received positive initial feedback from internal consultants and some of their clients on the new intranet site. People were asking for templates, examples, and expert advice even before the system was ready. About a year after the project was completed, Erica worked with a member of the Finance department to review the benefits of the new system. The Project Management Office did lose one of its staff members, but it did not request a replacement since the new system helped reduce the PMO's workload. This saved the firm

about $70,000 a year for the salary and benefits of that staff position. They also had data to show that the firm saved more than $180,000 on contracts with clients due to the new system, while they had projected just $160,000. The firm was breaking even with the "Ask the Expert" feature the first year, and Erica estimated that the system provided $30,000 in additional profits the first year by generating new business, not the $40,000 they had projected. However, savings from the PMO staff position salary and the extra savings on contracts more than made up for the $10,000 difference. Joe was proud of the project team and the system they produced to help make JWD Consulting a world-class organization.

CHAPTER SUMMARY

Project management is often a number of interlinked processes. The five project management process groups are initiating, planning, executing, monitoring and controlling, and closing. These processes occur at varying levels of intensity throughout each phase of a project, and specific outcomes are produced as a result of each process. Normally the executing processes require the most resources and time, followed by the planning processes.

Mapping the main activities of each project management process group into the nine project management knowledge areas provides a big picture of what activities are involved in project management.

Some organizations develop their own information technology project management methodologies, often using the standards found in the *PMBOK® Guide 2000* or *2004* as a foundation. It is important to tailor project management methodologies to meet the organization's particular needs. Popular methodologies like RUP and Six Sigma include project management processes.

The JWD Consulting case study demonstrates how one organization managed an information technology project from its initiation through its closure. The case study provides several samples of outputs produced for initiating, planning, executing, monitoring and controlling, and closing as follows:

- Business case
- Project charter
- Team contract
- Work breakdown structure
- Gantt chart
- Network diagram

- List of prioritized risks
- Milestone report
- Status reports
- Lessons-learned report
- Final project report

Later chapters in this text provide detailed information on creating these documents and using several of the tools and techniques described in this case study.

Discussion Questions

1. Briefly describe what happens in each of the five project management process groups (initiating, planning, executing, monitoring and controlling, and closing). On which process should team members spend the most time? Why?
2. Which process group includes information from every single knowledge area? Why?
3. Why do organizations need to tailor project management information found in the *PMBOK® Guide* to create their own methodologies?
4. What are some of the key outputs of each process group?
5. What are some of the typical challenges project teams face during each of the five process groups?

Exercises

1. Study the WBS and Gantt charts provided in Figures 3-3 and 3-4. Enter the WBS into Project 2003, indenting tasks as shown to create the WBS hierarchy. Then enter durations and dependencies to try to reproduce the Gantt chart. Check your work with the files available on the companion Web site for this text.
2. Read the article by William Munroe regarding BlueCross BlueShield of Michigan's information technology project management methodology (available on the companion Web site for this text). Write a two-page summary of the article, its key conclusions, and your opinion of it. Do you think many other organizations could apply this methodology, or does each organization need to create its own methodology?
3. Read the "ResNet Case Study" available from the companion Web site for this text at *www.course.com/mis/schwalbe4e* under Chapter 3. This real case study about Northwest Airlines' reservation system illustrates another application of the project management process groups. Write a three-page paper summarizing the main outputs produced during each project process group in this case. Also, include your opinion of whether or not Peeter Kivestu was an effective project manager.

4. JWD Consulting wrote a business case during project initiation. Review the contents of this document (Table 3-3) and find another example of a business case for a project. Write a two-page paper comparing the contents of these documents. In addition, describe whether you think all projects should include a business case before the project sponsors officially approve the project.
5. Read an article about a recipient of PMI's Project of the Year award, such as the Salt Lake City Organizing committee mentioned on PMI's Web site. Write a one-page paper summarizing the project, focusing on how the project manager and team used good project management practices.

RUNNING CASE

Manage Your Health, Inc. (MYH) is a Fortune 500 company that provides a variety of health care services across the globe. MYH has more than 20,000 full-time employees and more than 5,000 part-time employees. Before deciding which projects to pursue, MYH wants to develop a methodology for managing all information technology projects. Management has decided to develop an approach where suggested project management outputs will be similar based on the size of the project. You are part of a team charged with developing this methodology. For example, a communications management plan might be very short and produced by one or two people for small projects, while one for a large project might be fifty or more pages long and created by a committee of key stakeholders. Projects under a certain dollar value might not be tracked in the company's enterprise project management system, while others would.

Tasks

1. After reviewing information technology projects completed in the past few years, your team has found that MYH has a very large volume of projects with varying schedules, budgets, and complexities. List at least five key characteristics your team can use to group projects into three basic categories, which you will later use to determine the project management methodology that projects should follow. Prepare a one-page document that provides clear guidelines for placing projects into one of those three categories.

2. Review the outputs by project management process group based on the *PMBOK® Guide 2004* summarized in this chapter and the outputs used for the JWD Consulting project. Using the three categories you created in Task 1 above, list key recommended outputs by project management process group. Also discuss any other important guidelines that MYH should include in its project management methodology, such as how these outputs should be created. Prepare a two- to four-page document with your suggestions.

Additional Running Cases and Other Appendices

Appendix C provides additional running cases and questions you can use to practice applying the concepts, tools, and techniques you are learning throughout this and subsequent chapters. Review the running cases provided in Appendix C and on the companion Web site (*www.course.com/mis/schwalbe4e*). Appendix D includes information on templates for various project management documents. For additional sample documents based on real projects, visit the author's Web site (*www.kathyschwalbe.com*). Appendix E and the CD-ROM included with this text include a computer simulation where you can also practice applying the project management process groups and knowledge areas.

Suggested Readings

1. Charbonneau, Serge, "Software Project Management – A Mapping between RUP and the PMBOK," IBM Developerworks (May 3, 2004).

   In this article, the author explains Rational Unified Process (RUP), including its lifecycle of four phases: inception, elaboration, construction, and transition. He describes the main documents created using a RUP methodology and then presents a detailed mapping comparing it to the project management process groups based on the PMBOK® Guide 2000. *He concludes by saying that there are no fundamental incompatibilities between the two standards.*

2. Doloi, Hemanta, David Gunaratnam, and Ali Jaafari, "Life Cycle Project Management: A Platform for Strategic Project Management," PM Research Conference Proceedings (July 2004).

   In this article, three researchers from the University of Sydney present a Life Cycle Project Management model to address the need for a more strategic approach toward managing projects. The concepts adopted in their model require a shift in project management culture away from some of the traditional process-based and activity-driven models to emphasize newer approaches embodied in dynamic project organizations.

3. Hartnett, Ed, "Procedures for Professional Software Engineers," (*www.projectmagazine.com*) (January 15, 2003).

   Every professional follows standard procedures when doing his or her work. In this article, Harnett describes the most important standard practices to follow when developing software.

4. Munroe, William, "Developing and Implementing an IT Project Management Process," *ISSGI Review* (First Quarter 2001).

   A copy of this article is available on the companion Web site for this text under the information for Chapter 3. BlueCross BlueShield developed its

own information technology project management methodology. They based their methodology on standards found in the PMBOK® Guide 2000, making adjustments as needed to best describe how their organization managed information technology projects.

5. Schwalbe, Kathy, "ResNet Case Study," *Information Technology Project Management, Second Edition* (2001).

   This case study is available on the companion Web site for this text under the information for Chapter 3. ResNet is the software that Northwest Airlines uses for making reservations. This case study documents the initiating, planning, executing, monitoring and controlling, and closing process of the ResNet system, providing many examples of real project documents.

6. State of Michigan, "State of Michigan Project Management Methodology" (*http://michigan.gov/dit*) (May 2001).

   This document provides an excellent example of how an organization developed its own methodology to manage its information technology projects. The Web site also provides other valuable resources, such as templates for various documents.

KEY TERMS

- **closing processes** — formalizing acceptance of the project or project phase and ending it efficiently.
- **executing processes** — coordinating people and other resources to carry out the project plans and produce the products, services, or results of the project or project phase.
- **initiating processes** — defining and authorizing a project or project phase
- **methodology** — describes *how* things should be done
- **monitoring and controlling processes** — regularly measuring and monitoring progress to ensure that the project team meets the project objectives
- **planning processes** — devising and maintaining a workable scheme to ensure that the project addresses the organization's needs
- **process** — a series of actions directed toward a particular result
- **project management process groups** — the progression of project activities from initiation to planning, executing, monitoring and controlling, and closing
- **Rational Unified Process (RUP)** — an iterative software development process that focuses on team productivity and delivers software best practices to all team members