

## OPENING CASE

Erica Bell is in charge of the Project Management Office (PMO) for her consulting firm, JWD Consulting, which has grown to include more than 200 full-time consultants and even more part-time consultants. (JWD stands for Job Well Done.) JWD Consulting provides a variety of consulting services to assist organizations in selecting and managing IT 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, wants his company to continue to grow and become a world-class consulting organization. Because the core of the business is 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 several intranet site applications that would allow them to share their project management knowledge. He also thought that the firm should 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. Because JWD Consulting emphasizes the importance of high-payoff projects, Joe also wanted to see a business case for this project before proceeding.



## WHAT WENT RIGHT?

AgênciaClick, an interactive advertising and online communications company based in Sao Paulo, Brazil, made PMI's list of outstanding organizations in project management in 2007. Since 2002, the company saw revenues jump 132 percent, primarily due to its five-year emphasis on practicing good project management across the entire company. AgênciaClick launched a PMO in 2002 and used the *PMBOK® Guide* as the basis for developing its methodology and project management training program. The company also developed a custom project tracking system to help calculate work progress each day and alert managers of any schedule or cost problems. PMO Director Fabiano D'Agostinho said, "We realized the only way to manage multiple dynamic projects and deliver great products is to focus on project management . . . By monitoring and controlling projects and programs more efficiently, senior managers can focus on issues within the portfolio that need more attention."<sup>8</sup>

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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® Guide, Fifth Edition*, some ideas from other methodologies, and some new ideas to meet unique project needs. The first case study follows a more predictive or waterfall approach, while the second case study follows a more adaptive approach using Scrum. Both still use the project management process groups and several outputs or deliverables described in the *PMBOK® Guide*.

## CASE STUDY 1: JWD CONSULTING'S PROJECT MANAGEMENT INTRANET SITE PROJECT (PREDICTIVE APPROACH)

The following fictitious case provides an example of the elements involved in managing a project from start to finish. This example also uses Microsoft Project to demonstrate how project management software can assist in several aspects of managing a project. Several templates illustrate how project teams prepare various project management documents. Files for these and other templates are available on the companion Web site for this text. 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 later to enhance your learning.

### Project Pre-Initiation and 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 a project that is unimportant.* The selection of projects for initiation is therefore 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 IT project planning. IT is usually a support function in an organization, so the people who initiate IT projects must 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 site applications. Information systems, therefore, must support the firm's business goals, such as providing consulting services more effectively and efficiently.

An organization may initiate IT 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 chapter's opening case, JWD Consulting wants to follow an exemplary process for managing its projects because 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. Therefore, the firm will use these metrics—reducing internal costs and increasing revenues—to measure its performance on this project.

### Pre-Initiation Tasks

It is good practice to lay the groundwork for a project *before* it officially starts. Senior managers often perform several tasks, sometimes called pre-initiation tasks, including the following:

- Determine the scope, time, and cost constraints for the project
- Identify the project sponsor
- Select the project manager
- Develop a business case for a project
- Meet with the project manager to review the process and expectations for managing the project
- Determine if the project should be divided into two or more smaller projects

As described in the opening case, the CEO of JWD Consulting, Joe Fleming, defined the high-level scope of the project. He wanted to sponsor the project himself because it was his idea and it was strategically important to the business. He wanted Erica Bell, the PMO Director, to manage the project after proving there was a strong business case for it. If there was a strong business case for pursuing the project, then Joe and Erica would meet to review the process and expectations for managing the project. If there was not a strong business case, the project would not continue. As for the necessity of the last pre-initiation task, many people know from experience that it is easier to successfully complete a small project than a large one, especially for IT projects. It often makes sense to break large projects down into two or more smaller ones to help increase the odds of success. In this case, however, Joe and Erica decided that the work could be done in one project that would last about six months. To justify investing in this project, Erica drafted a business case for it, getting input and feedback from Joe, from one of her senior staff members in the PMO, and from a member of the Finance department. She also used a corporate template and sample business cases from past projects as a guide. Table 3-2 provides the business case. (Note that this example and others

**TABLE 3-2** 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.

**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. The project will also improve profitability by reducing internal costs by providing standard tools, techniques, templates, and project management knowledge to all internal consultants. Because 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, and access an online directory and Web-based e-mail system. 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 Assumptions 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 from 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 consultants and clients and be 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 for using these templates and tools, and see examples of how to

*(continued)*

**TABLE 3-2** JWD Consulting's business case (*continued*)

apply them to real projects. Users must also be able to submit new templates and tools, which should first be screened or edited by the Project Management Office.

2. Access to relevant project management articles. Many consultants and clients sense 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 ask 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 sites.
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, because 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 that consultants spend researching project management information, appropriate tools, and templates. Projected benefits are also based on a small increase in profits due to new business generated by this project. If each of 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.

### 9.0 Potential Risks

This project carries several risks. 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.

**TABLE 3-2** JWD Consulting's business case (*continued*)**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				

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are abbreviated. See the companion Web site for additional examples of project documents and to download a business case template and other templates.) Notice that the following information is included in this business case:

- Introduction/background
- 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

Because 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, and he agreed that the project was definitely worth pursuing. He was quite pleased to see that payback was estimated within a year, and that the return on investment was projected to be 112 percent. He told Erica to proceed with the formal initiation tasks for this project, as described in the next section.

## Initiating

To officially initiate the project management intranet site project, Erica knew that the main tasks were to identify all of the project stakeholders and to develop the project charter. Table 3-3 shows these processes and their outputs, based on the *PMBOK® Guide, Fifth Edition*. The main outputs are a project charter and a stakeholder register. Additional outputs that Erica found very useful for initiating projects were a stakeholder management strategy and a formal project kick-off meeting. Descriptions of how these outputs were created and sample documents related to each of them are provided for this project. Recall that every project and every organization is unique, so not all project charters, stakeholder registers, and other outputs will look the same. You will see examples of several of these documents in later chapters.

**TABLE 3-3** Project initiation knowledge areas, processes, and outputs

Knowledge Area	Initiating Process	Outputs
<i>Project Integration Management</i>	Develop project charter	Project charter
<i>Project Stakeholder Management</i>	Identify stakeholders	Stakeholder register

Source: *PMBOK® Guide, Fifth Edition*, 2012.

**Identifying Project Stakeholders** Erica met with Joe Fleming, the project's sponsor, to help identify key stakeholders for this project. Recall from Chapter 1 that stakeholders are people involved in project activities or affected by them, and include the project sponsor, project team, support staff, customers, users, suppliers, and even opponents to the project. Joe, the project sponsor, knew it would be important to assemble a strong project team, and he was very confident in Erica's ability to lead that team. They decided that key team members should include one of their full-time consultants 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 IT 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. All of the internal staff Joe and Erica recommended agreed to work on the project, and the two client representatives were Kim Phuong and Page Miller. Because many other people would be affected by this project as future users of the new intranet, Joe and Erica also identified other key stakeholders, including their directors of IT, Human Resources (HR), and Public Relations (PR), as well as Erica's administrative assistant.

After Joe and Erica made the preliminary contacts, Erica documented the stakeholders' roles, names, organizations, and contact information in a **stakeholder register**, a document that includes details related to the identified project stakeholders. Table 3-4 provides an example of part of the initial stakeholder register. Because this document would be public, Erica was careful not to include information that might be sensitive, such as how strongly the stakeholder supported the project and his potential influence on the project. She would keep these issues in mind discreetly and use them in developing the stakeholder management strategy.

A stakeholder analysis is a technique that project managers can use to help understand and increase the support of stakeholders throughout the project. Results of the stakeholder analysis can be documented in a stakeholder register or in a separate stakeholder



**TABLE 3-4** Stakeholder register

Name	Position	Internal/ External	Project Role	Contact Information
Joe Fleming	CEO	Internal	Sponsor	joe_fleming@jwdconsulting.com
Erica Bell	PMO Director	Internal	Project manager	erica_bell@jwdconsulting.com
Michael Chen	Team member	Internal	Team member	michael_chen@jwdconsulting.com
Kim Phuong	Business analyst	External	Advisor	kim_phuong@client1.com
Louise Mills	PR Director	Internal	Advisor	louise_mills@jwdconsulting.com

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management strategy. This strategy includes basic information such as stakeholder names, level of interest in the project, level of influence on the project, and potential management strategies for gaining support or reducing obstacles from each stakeholder. Because much of this information can be sensitive, it should be considered confidential. Some project managers do not even write down this information, but they do consider it because stakeholder management is a crucial part of their jobs. Table 3-5 provides an example of part of Erica's stakeholder management strategy for the project management intranet site project. You will see other examples of documenting stakeholder information in later chapters.

**TABLE 3-5** Stakeholder management strategy

Name	Level of Interest	Level of Influence	Potential Management Strategies
Joe Fleming	High	High	Joe likes to stay on top of key projects and make money. Have a lot of short, face-to-face meetings and focus on achieving the financial benefits of the project.
Louise Mills	Low	High	Louise has a lot of things on her plate, and she does not seem excited about this project. She may be looking at other job opportunities. Show her how this project will help the company and her resume.

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**Drafting the Project Charter** 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. Table 3-6 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 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 (not included for brevity) 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 participating when he felt that his other



**TABLE 3-6** Project charter

<b>Project Title:</b> Project Management Intranet Site Project			
<b>Project Start Date:</b> May 2		<b>Projected Finish Date:</b> November 4	
<b>Budget Information:</b> 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.			
<b>Project Manager:</b> Erica Bell, (310) 555-5896, erica_bell@jwdconsulting.com			
<b>Project Objectives:</b> 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 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 internal consultants, and other parts will be accessible for a fee.			
<b>Main Project Success Criteria:</b> The project should pay for itself within one year of completion.			
<b>Approach:</b> <ul style="list-style-type: none"><li>• Develop a survey to determine critical features of the new intranet site and solicit input from consultants and customers.</li><li>• Review internal and external templates and examples of project management documents.</li><li>• Research software to provide security, manage user inputs, and facilitate the article retrieval and “Ask the Expert” features.</li><li>• Develop the intranet site using an iterative approach, soliciting a great deal of user feedback.</li><li>• 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.</li></ul>			
ROLES AND RESPONSIBILITIES			
<b>Name</b>	<b>Role</b>	<b>Position</b>	<b>Contact Information</b>
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
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
<b>Sign-Off:</b> (Signatures of all the above stakeholders)			
<b>Comments:</b> (Handwritten or typed comments from above stakeholders, if applicable)			
<i>“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</i>			
<i>“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</i>			

assignments with external clients might have a higher priority. He offered to have an assistant help as needed. The IT staff members mentioned their concerns about testing and security issues. Erica knew that she would have to consider these concerns when managing the project.

**Holding a Project Kick-off Meeting** Experienced project managers like Erica know that it is crucial to get projects off to a great start. Holding a good kick-off meeting is an excellent way to do this. A **kick-off meeting** is a meeting held at the beginning of a project so that stakeholders can meet each other, review the goals of the project, and discuss future plans. The kick-off meeting is often held after the business case and project charter are completed, but it could be held sooner, as needed. Even if some or all project stakeholders must meet virtually, it is still important to have a kick-off meeting.

Erica also knows that all project meetings with major stakeholders should include an agenda. Figure 3-2 shows the agenda that Erica provided for the project management intranet site project kick-off meeting. Notice the main topics in an agenda:

- Meeting objective
- Agenda (lists in order the topics to be discussed)

**Kick-Off Meeting**  
**[Date of Meeting]**

**Project Name:** Project Management Intranet Site Project

**Meeting Objective:** Get the project off to an effective start by introducing key stakeholders, reviewing project goals, and discussing future plans

**Agenda:**

- Introductions of attendees
- Review of the project background
- Review of project-related documents (i.e., business case, project charter)
- Discussion of project organizational structure
- Discussion of project scope, time, and cost goals
- Discussion of other important topics
- List of action items from meeting

Action Item	Assigned To	Due Date

**Date and time of next meeting:**

- A section for documenting action items, who they are assigned to, and when each person will complete the action
- A section to document the date and time of the next meeting

It is good practice to focus on results of meetings, which is why a good agenda has sections for documenting action items and deciding on the next meeting date and time. It is also good practice to document meeting minutes, focusing on key decisions and action items. Erica planned to send the meeting minutes to all meeting participants and other appropriate stakeholders within a day or two of the meeting.

## 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 who are knowledgeable with the work need to plan the work. Chapter 4, Project Integration Management, provides detailed information on preparing a project management plan, and Chapters 5 through 13 describe planning processes for each of the other knowledge areas.

Table 3-7 lists the project management knowledge areas, processes, and outputs of project planning according to the *PMBOK® Guide, Fifth Edition*. 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, and later chapters include many more examples. Recall that the *PMBOK® Guide* is only a guide, so many organizations may have different planning outputs based on their particular needs, as is the case in this example. You can also use many templates for planning; several are listed in the last section of this chapter.

Because 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 3-7, which is based only on the *PMBOK® Guide*)
- A project scope statement
- A work breakdown structure (WBS), a key part of the scope baseline
- 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 help facilitate communications and document project information. For larger projects, JWD Consulting also creates many of the other outputs listed in Table 3-7. (You will learn more about these documents by knowledge area in the following chapters.)

Soon after the project team signed the project charter, Erica organized a team-building meeting for the project management intranet site project. An important part of the meeting

**TABLE 3-7** Planning processes and outputs

Knowledge Area	Planning Process	Outputs
<i>Project Integration Management</i>	Develop project management plan	Project management plan
<i>Project Scope Management</i>	Plan scope management	Scope management plan Requirements management plan
	Collect requirements	Requirements documentation Requirements traceability matrix
	Define scope	Project scope statement Project documents updates
	Create WBS	Scope baseline Project documents updates
<i>Project Time Management</i>	Plan schedule management	Schedule management plan
	Define activities	Activity list Activity attributes Milestone list Project management plan updates
	Sequence activities	Project schedule network diagrams Project documents updates
	Estimate activity resources	Activity resource requirements Resource breakdown structure Project documents updates
	Estimate activity durations	Activity duration estimates Project documents updates
<i>Project Cost Management</i>	Develop schedule	Schedule baseline Project schedule Schedule data Project calendars Project management plan updates Project documents updates
	Plan cost management	Cost management plan
	Estimate costs	Activity cost estimates Basis of estimates Project documents updates
	Determine budget	Cost baseline Project funding requirements Project documents updates

(continued)

**TABLE 3-7** Planning processes and outputs (*continued*)

Knowledge Area	Planning Process	Outputs
<b>Project Quality Management</b>	Plan quality management	Quality management plan
		Process improvement plan
		Quality metrics
		Quality checklists
		Project documents updates
<b>Project Human Resource Management</b>	Plan human resource management	Human resource plan
<b>Project Communications Management</b>	Plan communications management	Communications management plan
		Project documents updates
<b>Project Risk Management</b>	Plan risk management	Risk management plan
	Identify risks	Risk register
	Perform qualitative risk analysis	Project documents updates
	Perform quantitative risk analysis	Project documents updates
	Plan risk responses	Project management plan updates Project documents updates
<b>Project Procurement Management</b>	Plan procurement management	Procurement management plan
		Procurement statement of work
		Procurement documents
		Source selection criteria
		Make-or-buy decisions Change requests
<b>Project Stakeholder Management</b>	Plan stakeholder management	Stakeholder management plan Project documents updates

Source: PMBOK® Guide, Fifth Edition, 2012.

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 spend much time together. 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 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 IT 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 companies.

Erica had all participants introduce themselves, and then she led an icebreaking activity so everyone would be more relaxed. She asked all participants to describe their dream vacations, assuming that 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, again 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 IT department member, and one client representative in each group. These smaller groups made it easier for everyone to contribute ideas. Each group shared its ideas for what should go into the contract, and then everyone worked together to form one project team contract. Table 3-8 shows the resulting team contract, which took about 90 minutes to create. Erica could see that there were different personalities on this team, but she felt they all could work together well.

Erica wanted to keep the meeting to its two-hour time limit. The next task would be to clarify the scope of the project by developing a project 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 the goals 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 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.

**TABLE 3-8** 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.

**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. Because a few team members cannot often meet face to face, 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 the enterprise-wide project management system by 4 p.m. every Friday.
- Present ideas clearly and concisely.
- Keep discussions on track.

**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 via e-mail within 24 hours of all project meetings, focusing on decisions made and action items from each meeting.

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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 3-9 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 product characteristics and requirements, summarizes the deliverables, and describes project success criteria in detail.

As the project team worked on the scope statement, it 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



**TABLE 3-9** Scope statement (draft version)**Project Title: Project Management Intranet Site Project****Date:** May 18**Prepared by:** Erica Bell, Project Manager, erica\_bell@jwdconsulting.com

**Project Summary and 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. 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 of its completion.

**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 ask 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.
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, progress 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.

*(continued)*

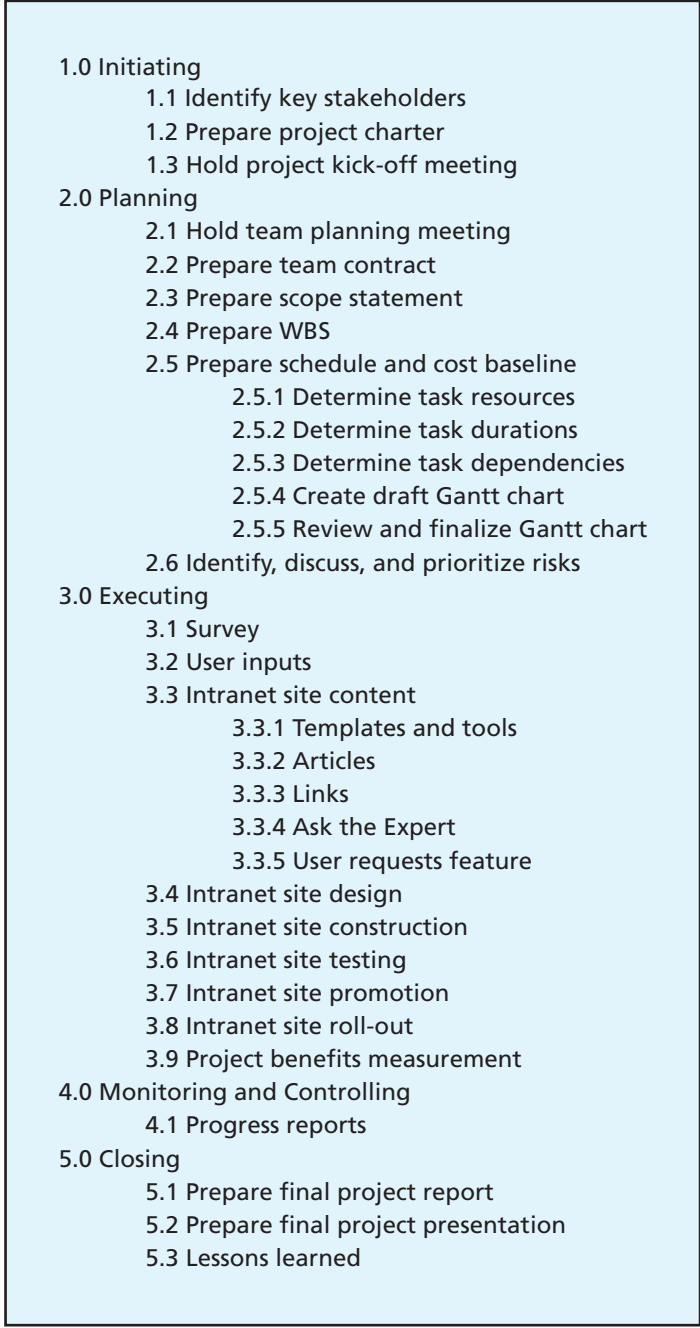
**TABLE 3-9** Scope statement (draft version) (*continued*)

2. Files for templates: The intranet site will include templates for at least 20 documents when the system is first implemented, and it will have the capacity to store up to 100 documents. The project team will decide on the initial 20 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 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. Instructions for using project management 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 10 useful articles about relevant topics in project management. The intranet site will have the capacity to store at least 1,000 articles in PDF format with an average length of 10 pages each.
7. Links: The intranet site will include links with brief descriptions for at least 20 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 predefined 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, and appropriate graphics. 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 sections, 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.

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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, as shown in Figure 3-3. They included completed work from the initiating process to

- 
- 1.0 Initiating
    - 1.1 Identify key stakeholders
    - 1.2 Prepare project charter
    - 1.3 Hold project kick-off meeting
  - 2.0 Planning
    - 2.1 Hold team planning 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 Monitoring and Controlling
    - 4.1 Progress reports
  - 5.0 Closing
    - 5.1 Prepare final project report
    - 5.2 Prepare final project presentation
    - 5.3 Lessons learned

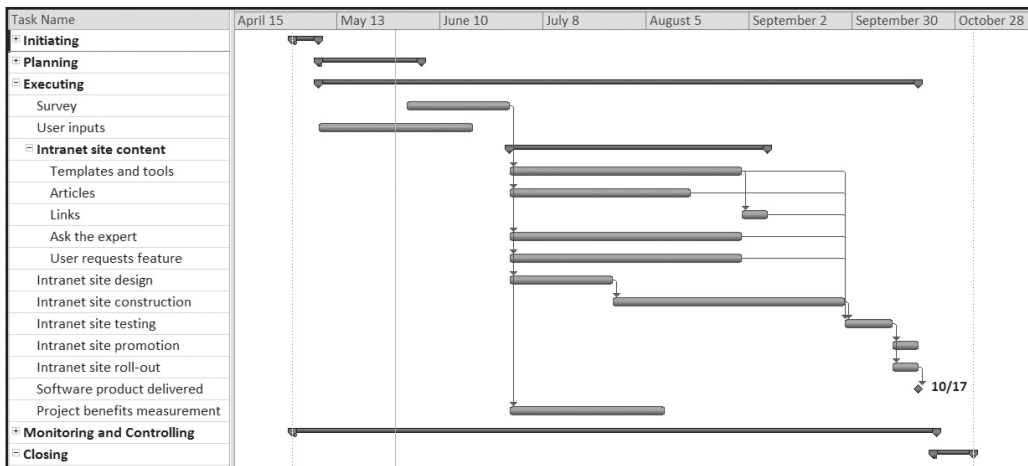
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**FIGURE 3-3** JWD Consulting intranet project work breakdown structure (WBS)

provide a complete picture of the project's scope. The group members 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.

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 member 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 20 hours per week on this project, and the other project team members combined should not spend more than 60 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 that was 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 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, if required, to complete them on time. Figure 3-4 shows the resulting Gantt chart created in Microsoft Project. Only the executing tasks are expanded



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**FIGURE 3-4** JWD Consulting intranet site project baseline Gantt chart

to show the subtasks under that category. (You will learn how to use Project 2010 in Appendix A. Chapter 6, Project Time Management, explains Gantt charts and other time management tools.) The baseline schedule projects a completion date of November 1. Also notice that there is only one delivery of the software, shown as a milestone near the end of the project, on October 17. The project charter had a planned completion date of November 4. 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.

The majority of the costs for this project were internal labor, and the team kept its 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 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 in a risk register, which also includes information on root causes of the risks, warning signs that potential risks might occur, and response strategies for the risks. (See Chapter 11, Project Risk Management, for more information on risk registers.) 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. Only one risk was in the high probability and high impact category, and several had 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 3-10.

## Project Execution

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 created during project execution, and it usually takes the most resources to accomplish this process. Table 3-11 lists the knowledge areas, executing processes, and outputs of project execution listed in the *PMBOK® Guide, Fifth Edition*. Many project sponsors and customers focus on deliverables related to providing the products, services, or results desired from the project. It is also important to document change requests and prepare updates to planning documents as part of execution. Templates related to this process group are also listed later in this chapter.

**TABLE 3-10** 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

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For this relatively small project, Erica would 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 made sure that everyone who would use the resulting intranet application also understood what they were producing as part of the project and how it would help them in the future. 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 it planned to outsource.

As mentioned earlier, Erica knew that Joe, the CEO and project sponsor, liked to see progress on projects through milestone reports. He also wanted Erica to alert him to any potential issues or problems. Table 3-12 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 management software to create milestone reports, she used word-processing software instead because this project was small and she could more easily manipulate the report format.

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,

**TABLE 3-11** Executing processes and outputs

Knowledge Area	Executing Process	Outputs
<b><i>Project Integration Management</i></b>	Direct and manage project work	Deliverables Work performance data Change requests Project management plan updates Project documents updates
<b><i>Project Quality Management</i></b>	Perform quality assurance	Change requests Project management plan updates Project documents updates Organizational process assets updates
<b><i>Project Human Resource Management</i></b>	Acquire project team	Project staff assignments Resource calendars Project management plan updates
	Develop project team	Team performance assessments Enterprise environmental factor updates
	Manage project team	Change requests Project management plan updates Project documents updates Enterprise environmental factors updates Organizational process assets updates
<b><i>Project Communications Management</i></b>	Manage communications	Project communications Project documents updates Project management plan updates Organizational process assets updates
<b><i>Project Procurement Management</i></b>	Conduct procurements	Selected sellers Agreements Resource calendars Change requests Project management plan updates Project documents updates
<b><i>Project Stakeholder Management</i></b>	Manage stakeholder engagement	Issue log Change requests Project management plan updates Project documents updates Organizational process assets updates

Source: PMBOK® Guide, Fifth Edition, 2012.



**TABLE 3-12** Milestone report as of June 17

Milestone	Date	Status	Responsible	Issues/ Comments
<b><i>Initiating</i></b>				
Stakeholders identified	May 2	Completed	Erica and Joe	
Project charter signed	May 10	Completed	Erica	
Project kick-off meeting held	May 13	Completed	Erica	Went very well
<b><i>Planning</i></b>				
Team contract signed	May 13	Completed	Erica	
Scope statement completed	May 27	Completed	Erica	
WBS completed	May 31	Completed	Erica	
List of prioritized risks completed	June 3	Completed	Erica	Reviewed with sponsor and team
Schedule and cost baseline completed	June 13	Completed	Erica	
<b><i>Executing</i></b>				
Survey completed	June 28		Erica	Poor response so far!
Intranet site design completed	July 26		Kevin	
Project benefits measurement completed	August 9		Erica	
User inputs collected	August 9		Jessie	
Articles completed	August 23		Jessie	
Templates and tools completed	September 6		Erica	
Ask the Expert completed	September 6		Michael	
User Requests feature completed	September 6		Cindy	
Links completed	September 13		Kevin	
Intranet site construction completed	October 4		Kevin	
Intranet site testing completed	October 18		Cindy	
Intranet site promotion completed	October 25		Erica	

**TABLE 3-12** Milestone report as of June 17 (*continued*)

Milestone	Date	Status	Responsible	Issues/ Comments
Intranet site roll-out completed	October 25		Kevin	
<b><i>Monitoring and Controlling</i></b>				
Progress reports	Every Friday		All	
<b><i>Closing</i></b>				
Final project presentation completed	October 27		Erica	
Sponsor sign-off on project completed	October 27		Joe	
Final project report completed	October 28		Erica	
Lessons-learned reports submitted	November 1		All	

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so Erica agreed to have Michael attend a minimal number 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 for software services. 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 an e-mail to all of JWD Consulting’s consultants describing the importance of the project. He also offered 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.



## BEST PRACTICE

One way to learn about best practices in project management is by studying recipients of PMI's Project of the Year award. The Quartier International de Montréal (QIM), Montreal's international district, was a 66-acre urban revitalization project in the heart of downtown Montreal. This \$90 million, five-year project turned a once unpopular area into a thriving section of the city with a booming real estate market, and has generated \$770 million in related construction. Clement Demers, PMP, was the director general for the QIM project. He said the team "took a unique project execution approach by dividing work into packages that allowed for smaller-scale testing of management techniques and contract awards. Benefiting from experience gained in each stage, managers could then adjust future work segments and management styles accordingly."<sup>9</sup>

Other strategies that helped the team succeed included the following:

- The team identified champions in each stakeholder group to help inspire others to achieve project goals.
- The team's communications plan included a Web site dedicated to public concerns.
- There were two-day reviews at the beginning of each project phase to discuss problems and develop solutions to prevent conflict.
- Financial investors were asked for input to increase their stake in the project.
- The team recognized the value of hiring high-quality experts, such as architects, engineers, lawyers, and urban planners. They paid all professionals a fixed price for their services and paid their fees quickly.

## 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 is done throughout the life of a project. It also involves nine of the 10 project management knowledge areas. Table 3-13 lists the knowledge areas, monitoring and controlling processes, and outputs, according to the *PMBOK® Guide, Fifth Edition*. Templates related to this process group are listed later in this chapter.

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 progress report every Friday to show work performance information. They were originally using a company template for progress 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 3-14 is an example of one of Cindy's progress reports.

In addition to progress reports, an important tool for monitoring and controlling the project was using project management software. All team members submitted their actual hours

**TABLE 3-13** Monitoring and controlling processes and outputs

Knowledge Area	Monitoring and Controlling Process	Outputs
<b><i>Project Integration Management</i></b>	Monitor and control project work	Change requests Work performance reports Project management plan updates Project documents updates
	Perform integrated change control	Approved change requests Change log Project management plan updates Project documents updates
<b><i>Project Scope Management</i></b>	Validate scope	Accepted deliverables Change requests Work performance information Project documents updates
	Control scope	Work performance information Change requests Project management plan updates Project documents updates Organizational process assets updates
<b><i>Project Time Management</i></b>	Control schedule	Work performance information Schedule forecasts Change requests Project management plan updates Project documents updates Organizational process assets updates
<b><i>Project Cost Management</i></b>	Control cost	Work performance information Cost forecasts Change requests Project management plan updates Project documents updates Organizational process assets updates
<b><i>Project Quality Management</i></b>	Control quality	Quality control measurements Validated changes Validated deliverables Work performance information Change requests Project management plan updates Project documents updates Organizational process assets updates

(continued)

**TABLE 3-13** Monitoring and controlling processes and outputs (*continued*)

Knowledge Area	Monitoring and Controlling Process	Outputs
<b><i>Project Communications Management</i></b>	Control communications	Work performance information Change requests Project documents updates Organizational process assets updates
<b><i>Project Risk Management</i></b>	Control risks	Work performance information Change requests Project management plan updates Project documents updates Organizational process assets updates
<b><i>Project Procurement Management</i></b>	Control procurements	Work performance information Change requests Project management plan updates Project documents updates Organizational process assets updates
<b><i>Project Stakeholder Management</i></b>	Control stakeholder engagement	Work performance information Change requests Project documents updates Organizational process assets updates

Source: PMBOK® Guide, Fifth Edition, 2012.

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 2010, 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, Project Time Management, for more information on critical path analysis; Chapter 7, Project Cost Management, for a description of earned value management; and Appendix A for more information on using Project 2010 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 Erica had not considered before. Several of the firm's client contracts were based on

**TABLE 3-14** Sample weekly progress report

<b>Project Name:</b> Project Management Intranet Project <b>Team Member Name:</b> Cindy Dawson, cindy_dawson@jwdeconsulting.com <b>Date:</b> August 5
<b>Work completed this week:</b> –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 –Met with preferred supplier –Verified that their software would meet our needs –Discovered the need for some customization
<b>Work to complete next week:</b> –Continue work on intranet site construction –Prepare draft contract for preferred supplier –Develop new cost estimate for outsourced work
<b>What’s going well and why:</b> The intranet site construction started well. The design was very clear and easy to follow. Kevin really knows what he’s doing.
<b>What’s not going well and why:</b> It is difficult to decide how to organize the templates and examples. Need more input from senior consultants and clients.
<b>Suggestions/Issues:</b> –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.
<b>Project changes:</b> 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.

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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 then 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 project report and presentation. Even though many IT 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 included 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 the team had to know who would support the "Ask the Expert" feature and plan some time for Michael to work with that person.

Table 3-15 lists the knowledge areas, processes, and outputs of project closing based on the *PMBOK® Guide, Fifth Edition*. During the closing processes of any project, project team members must 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 project team members procured items during the project, they must formally complete or close out all contracts. Templates related to project closing are listed later in this chapter.

**TABLE 3-15** Closing processes and output

Knowledge Area	Closing Process	Outputs
<b><i>Project Integration Management</i></b>	Close project or phase	Final product, service, or result transition Organizational process assets updates
<b><i>Project Procurement Management</i></b>	Close procurements	Closed procurements Organizational process assets updates

Source: *PMBOK® Guide, Fifth Edition*, 2012.

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 reports from each team member and wrote one summary lessons-learned report to include in the final documentation, part of which is provided in Table 3-16. Notice the bulleted items in the fourth question, 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.

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. (You can find this and other templates on the companion Web site for this text.)

Table 3-17 provides the table of contents for the final project report. The cover page included the project title, date, and team member names. 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



**TABLE 3-16** Lessons-learned report (abbreviated)

<b>Project Name:</b>	JWD Consulting Project Management Intranet Site Project
<b>Project Sponsor:</b>	Joe Fleming
<b>Project Manager:</b>	Erica Bell
<b>Project Dates:</b>	May 2 – November 4
<b>Final Budget:</b>	\$150,000
1. Did the project meet scope, time, and cost goals?	<i>We did meet scope and time goals, but we had to request an additional \$10,000, which the sponsor did approve.</i>
2. What were the success criteria listed in the project scope statement?	<i>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.”</i>
3. Reflect on whether you met the project success criteria.	<i>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.</i>
4. In terms of managing the project, what were the main lessons your team learned from this project?	<i>The main lessons we learned include the following:</i> <ul style="list-style-type: none"> <li><i>• 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.</i></li> <li><i>• 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.</i></li> <li><i>• 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.</i></li> <li><i>• Project management software was very helpful throughout the project.</i></li> </ul>
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?	

**TABLE 3-17** 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 and WBS dictionary
- Baseline and actual Gantt chart
- List of prioritized risks
- Milestone reports
- Progress reports
- Contract files
- Lessons-learned reports
- Final presentation
- Client acceptance form

## 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

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documentation and an electronic copy to store on the new intranet site for other consultants to use as desired.

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

## **CASE STUDY 2: JWD CONSULTING'S PROJECT MANAGEMENT INTRANET SITE PROJECT (AGILE APPROACH)**

This section demonstrates a more agile approach to managing JWD Consulting's project management intranet site project. Instead of repeating the sample documents shown in the first, more predictive case study, this section emphasizes the differences of using an