Successful Project Management

CHAPTER 1

Project Management Concepts

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Concepts in this chapter support the following Project Management Knowledge Areas of *A Guide to the Project Management Body of Knowledge (PMBOK® Guide):*

Project Integration Management

Project Stakeholder Management

REAL WORLD PROJECT MANAGEMENT

Managing Culture for Project Success

Consider the word, Culture. It brings to mind many ideas related to culture in the workplace, cultures in different companies, or cultures in countries. Culture is a way of thinking that distinguishes one group of people from other groups of people. An organization's culture of innovation is the support for new ideas, risk, and failure. Behavior and attitudes are influenced by culture. Actions such as assertiveness, collectivism, or humane orientation can be defined for different cultures and influence

how a project manager makes decisions related to managing a project and project team members.

What impact do you think cultural practices have on project success?

Drew is a project manager for a firm with project teams in four countries, Austria, Canada, Finland, and South Korea. Each of the teams interacts with Drew and the team at the corporate headquarters through online video, phone calls, e-mails, and, at times, on location meetings.

As part of the company's professional development, Drew attended a training session on understanding diversity and culture to learn about corporate innovation culture and its relationship with assertiveness, collectivism, and humane orientation. One of the modules in the program indicated that cross-cultural management can be influenced by managerial practices and other organizational factors. Innovation activities often include championing programs, incentives for initiating new ideas, and monetary and nonmonetary rewards. The training materials described companies with a high innovation culture also had workers who showed high levels of analytical behaviors and a high problem-solving orientation. Drew hoped to inspire the teams and have more support for an innovation culture in order to increase the efficiency for solving problems or preventing problems in the teams' projects.

As a result of the training, a survey was implemented to learn more about the teams in each of the countries related to assertiveness, collectivism, and humane orientation, the three factors most related to changes in corporate innovation culture.

Drew had learned about each during the training. Assertiveness had been found to be linked to encouragement for taking initiatives and rewards for performance. Collectivists expressed pride, loyalty, and cohesiveness with others in their group or organization. Those with a humane orientation encouraged or rewarded others for their fairness, generosity, care, and kindness.

The findings of the survey indicated that the teams in the four countries were different from each other. The team from Austria had the highest scores in assertiveness and the team from Finland had the lowest. The team from South Korea had the highest score for collectivism and the team from Finland had the lowest. The team from Canada had the highest humane orientation score and the team from Austria had the lowest.

Drew made decisions about what to do based upon the scores. More empowerment of individual champions and additional monetary and nonmonetary incentives were given to the Austrian team as a means to stimulate the corporate innovation culture because such practices are viewed favorably by those with more assertiveness in their social relationships. Providing material rewards are not fully compatible with cultures low in assertiveness; therefore, Drew provided nonmonetary rewards to the team from Finland. Drew applied more empowerment to the group for the team from Korea due to their high scores for in-group collectivism to reinforce the

team's success rather than individual success. The same empowerment procedures were followed for the team from Canada as the team from Korea because high levels of humane orientation do not value self-enhancement, power, and materials possessions as much as low humane orientation. Additional feedback from the teams helped Drew find that enhancing analysis and practices is more appropriate to organizations with high in-group collectivism, high assertiveness, and low humane orientation.

From her work, it was learned that corporate culture should be compatible with national cultural practices to increase the potential for project success. The success factors that Drew experienced are successes that you as a project manager can experience. The skills that Drew applied are ones that you will learn throughout this book.

Based on information from Unger, B. B., Rank, J. J., & Gemünden, H. H. (2014). Corporate innovation culture and dimensions of project portfolio success: The moderating role of national culture. *Project Management Journal, 45*(6), 38–57.

This chapter presents an overview of project management concepts. You will become familiar with the

- Definition of a project and its attributes
- Key constraints within which a project must be managed
- Life cycle of a project
- Definition of project management
- Elements of the project management process
- Identification and engagement of stakeholders
- Implications of global project management
- Project Management Institute
- Benefits of project management

LEARNING OUTCOMES

After studying this chapter, the learner should be able to:

- Define what a project is
- List and discuss the attributes of a project
- Explain what is meant by project objective
- Define what is meant by project deliverable
- Provide examples of projects
- Discuss project constraints
- Describe the phases of the project life cycle
- Define and apply project management
- Discuss the steps of the planning process
- Identify the three elements of the executing process
- Create a stakeholder register
- Discuss stakeholder engagement
- Discuss some implications of global project management
- Discuss the Project Management Institute
- List benefits of project management techniques

Project Attributes

A **project** is an endeavor to accomplish a specific objective through a unique set of interrelated activities and the effective utilization of resources. The following attributes help define a project:

- A project has a clear **objective** that establishes what is to be accomplished. It is the tangible end product that the project team must produce and deliver. The project objective is usually defined in terms of *end product* or *deliverable, schedule,* and *budget.* It requires completing the project work scope and producing all the deliverables within a certain time and budget. For example, the objective of a project might be to introduce a new portable food preparation appliance in 10 months and within a budget of $2 million.

  The project objective may also include a statement of the expected *benefits* or *outcomes* that will be achieved from implementing the project. It is why the project is being done. For example, a project with the objective to develop a new product may have an expected outcome to sell a certain number of units of that new product within a year, or to increase market share by a specific percent. The project objective might be to expand market share by 3 percent by introducing a new portable food preparation appliance within 10 months with a budget of $2 million. In this case, the outcome of increased market share would not be known until some time period has elapsed after the new product development project is completed. Another example is a project with an objective to put on an event to raise funds for a particular cause, such as diabetes research, but the expected benefit of the event is to raise a certain amount of money, such as $20,000. In this case, the completion of the project—holding the fund-raising event—enables the benefit to be achieved.
- A project is carried out through a set of *interdependent activities* (also referred to as *tasks*)—that is, a number of nonrepetitive activities that need to be accomplished in a certain sequence in order to achieve the project objective.
- A project utilizes various *resources* to carry out the activities. Such resources can include different people, organizations, equipment, materials, and facilities. For example, a project to perform a complex series of surgical operations may involve doctors with special expertise, nurses, anesthesiologists, surgical instruments, monitoring equipment, prosthetic devices or transplant organs, and special operating facilities.
- A project has a *specific time frame* or *finite life span.* It has a start time and a date by which the objective must be accomplished. For example, the refurbishing of an elementary school might have to be completed between June 20 and August 20.
- A project may be a *unique* or *one-time* endeavor. Some projects, such as designing and building a space station, are unique because they have never been attempted before. Other projects, such as developing a new product, building a house, or planning a wedding, are unique because of the customization they require. For example, a wedding can be a simple, informal occasion, with a few friends in a chapel, or a spectacular event, staged for royalty.
- A project has a **sponsor** or **customer**. The sponsor/customer is the entity that provides the funds necessary to accomplish the project. It can be a person, an organization, or a partnership of two or more people or organizations. When a contractor builds an addition to a house, the homeowner is

the customer who is funding or paying for the project. When a company receives funds from a government agency to develop a robotic device for handling radioactive material, the sponsor is the government agency. When a company's board of directors provides funds for a team of its employees to upgrade the firm's management information system, the board is the sponsor of the project. In this last case, the term *customer* may take on a broader definition, including not only the project sponsor (the company's management) but also other *stakeholders*, such as the people who will be the end users of the information system. The person managing the project and the project team must successfully accomplish the project objective to satisfy the project sponsor as well as the users of the project's end product—an upgraded information system.

- Finally, a project involves a *degree of uncertainty*. Before a project is started, a plan is prepared based on certain assumptions and estimates. It is important to document these assumptions because they will influence the development of the project work scope, schedule, and budget. A project is based on a unique set of interdependent activities and estimates of how long each activity should take, various resources and assumptions about the availability and capability of those resources, and estimates of the costs associated with the resources. This combination of assumptions and estimates causes uncertainty that the project objective will be completely accomplished. For example, the project scope may be accomplished by the target completion date, but the final cost may be much higher than anticipated because of low initial estimates for the cost of certain resources. As the project proceeds, some of the assumptions will be refined or replaced with factual or updated information. For example, once the conceptual design of a company's annual report is finalized, the amount of time and costs needed to complete the detailed design and produce the final document can be better estimated.

Reinforce Your Learning

1. What are some attributes of a project?

The following are some examples of projects:

Staging a theatrical production
Developing and introducing a new product
Developing a set of apps for mobile business transactions
Planning a wedding
Modernizing a factory
Designing and implementing a computer system
Converting a basement to a family room
Organizing and hosting a conference
Designing and producing a brochure
Executing an environmental cleanup of a contaminated site
Holding a high school reunion
Building a shopping mall
Performing a series of surgeries on an accident victim
Organizing a community festival
Consolidating two manufacturing plants
Rebuilding a town after a natural disaster

Reinforce Your Learning

2. Identify three projects in which you have been involved during your lifetime.

Hosting a dinner for 20 relatives
Designing a business internship program for high school students
Building a tree house

Balancing Project Constraints

The successful accomplishment of the project objective could be constrained by many factors, including *scope, quality, schedule, budget, resources, risks, customer satisfaction*, and *stakeholder support*.

The project **scope** is all the work that must be done in order to produce all the project *deliverables* (the tangible product or items to be provided), satisfy the customer that the deliverables meet the requirements and acceptance criteria, and accomplish the project objective. For example, the project scope might be all of the work involved in clearing the land, building a house, and landscaping to the specifications agreed upon by the contractor and the buyer. Or a project to install new high-speed specialized automation equipment in a factory might include designing the equipment, building it, installing it, testing it to make sure it meets acceptance criteria, training workers to operate and maintain the equipment, and providing all the technical and operating documentation for the equipment.

Quality expectations must be defined from the onset of the project. The project work scope must be accomplished in a quality manner and meet specifications. For example, in a house-building project, the customer expects the workmanship to be of the highest quality and all materials to meet specifications. Completing the work scope but leaving windows that are difficult to open and close, faucets that leak, or a landscape full of rocks will result in an unsatisfied customer and perhaps a payment or legal dispute. Mechanisms such as standards, inspections, audits, and so forth must be put in place to assure quality expectations are being met throughout the project and not just checked or inspected at the end of the project, when it might be costly to correct. All project deliverables should have quantitative acceptance criteria.

The **schedule** for a project is the timetable that specifies when each activity should start and finish. The project objective usually states the time by which the project scope must be completed in terms of a specific date agreed upon by the sponsor and the organization performing the project. The project schedule indicates the dates when specific activities must be started and finished in order to meet the project completion date (for example, when a new bridge is to be open to traffic or when a new product must be launched at an industry exposition).

The **budget** of a project is the amount the sponsor or customer has agreed to pay for acceptable project deliverables. The project budget is based on estimated costs associated with the quantities of various resources that will be used to perform the project. It might include the salaries of people who will work on the project, materials and supplies, equipment, rental of facilities, and the fees of subcontractors or consultants who will perform some of the project tasks. For example, for a wedding project, the budget might include estimated costs for flowers, gown, tuxedo, caterer, cake, limousine rental, videographer, reception facility, and so on.

Various **resources** are needed to perform the project activities, produce the project deliverables, and accomplish the project objective. Resources include people, materials, equipment, facilities, and so forth. Human resources include

people with specific expertise or skills. Certain quantities of each type of resource with specific expertise are required at specific periods of time during the project. Similarly, particular equipment may be required during a certain portion of a project, such as equipment needed to excavate the land before construction can start on a new office building. The resource requirements for a project must be aligned with the types and quantities of resources available at the time periods when they are required.

There could be **risks** that adversely affect accomplishing the project objective. For example, designing an information system using the newest technology may pose a risk that the new technology may not work as expected. Or there may be a risk that a new pharmaceutical product may not receive regulatory approval. A risk management plan must be developed that identifies and assesses potential risks and their likelihood of occurrence and potential impact, and delineates responses for dealing with risks if they do occur.

Ultimately, the responsibility of the project manager is to make sure the **customer is satisfied**. This goes beyond just completing the project scope within budget and on schedule or asking if the customer or sponsor is satisfied at the end of the project. It means not only meeting the customer's expectations but also developing and maintaining an excellent working relationship throughout the project. It requires ongoing communication with the customer or sponsor to keep the customer informed and to determine whether expectations have changed. Regularly scheduled meetings or progress reports, phone discussions, and e-mail are examples of ways to accomplish such communication. Customer satisfaction requires involving the sponsor as a partner in the successful outcome of the project through active participation during the project. The project manager must continually be aware of the degree of the customer's satisfaction. By maintaining regular communication with the customer or sponsor, the project manager demonstrates genuine concern about the customer's expectations; it also prevents unpleasant surprises later.

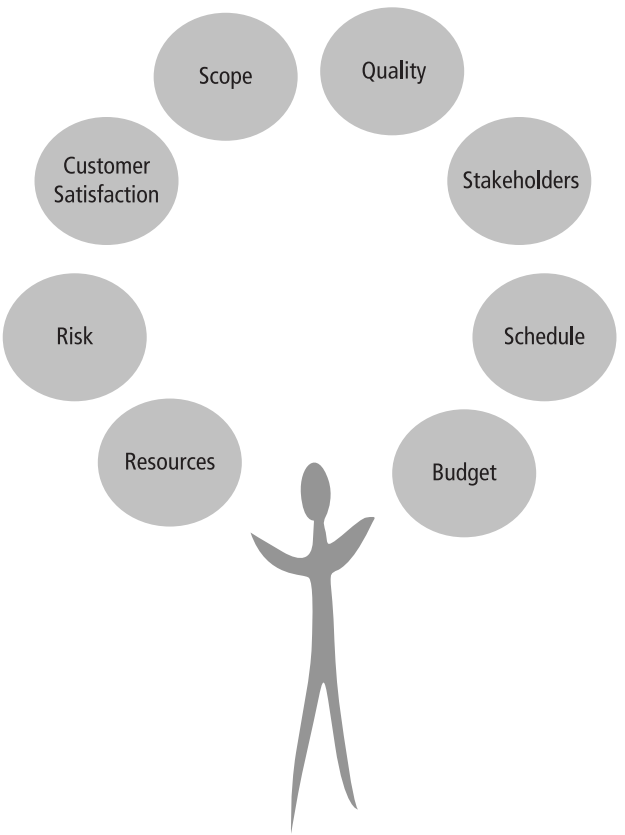
The project manager and team need to build relationships with, and engage, the various **stakeholders** who may influence or may be affected by the project, in order to gain their support. See the section on stakeholder engagement later in this chapter for further discussion.

Successfully completing the project requires finishing the scope of work within budget and a certain time frame while managing resource utilization, meeting quality specifications, and managing risks—and this must all be done while assuring customer or sponsor satisfaction and dealing with stakeholders' issues and concerns and gaining their support. During the project, it is sometimes challenging to balance or juggle these factors, which often constrain one another and could jeopardize accomplishing the project objective. See Figure 1.1. To help ensure the achievement of the project objective, *it is important to develop a plan before starting the project work*, rather than jumping in and starting without a plan. Lack of a plan decreases the chances of successfully accomplishing the full project scope within budget and on schedule.

Once a project is started, unforeseen circumstances may jeopardize the achievement of the project objective with respect to scope, budget, or schedule. They include:

- The cost of some of the materials is more than originally estimated.
- Inclement weather causes a delay.

FIGURE 1.1 Factors Constraining Project Success



- Additional redesign and modifications to a new sophisticated medical instrument are required to get it to meet performance specifications and government testing requirements.
- Delivery of a critical component for an aviation control system is delayed several months.
- Environmental contaminants are discovered when excavating for a new building.
- A key project team member with unique technical knowledge decides to retire, which creates a gap in critical expertise.

Any of the above examples could affect the balance of scope, quality, schedule, budget, resources, risks, customer satisfaction, and stakeholder support (or impact these factors individually), jeopardizing successful accomplishment of the project objective. The challenge for the project manager is to not only continually balance these factors throughout the performance of the project but also prevent, anticipate, or overcome such circumstances if and when they occur. *Good planning and communication* are essential to prevent problems from occurring or to minimize their impact on the achievement of the project objective when they do occur. The project manager needs to be proactive in planning

and communicating and provide leadership to the project team to keep these constraining factors in balance and to accomplish the project objective.

Project Life Cycle

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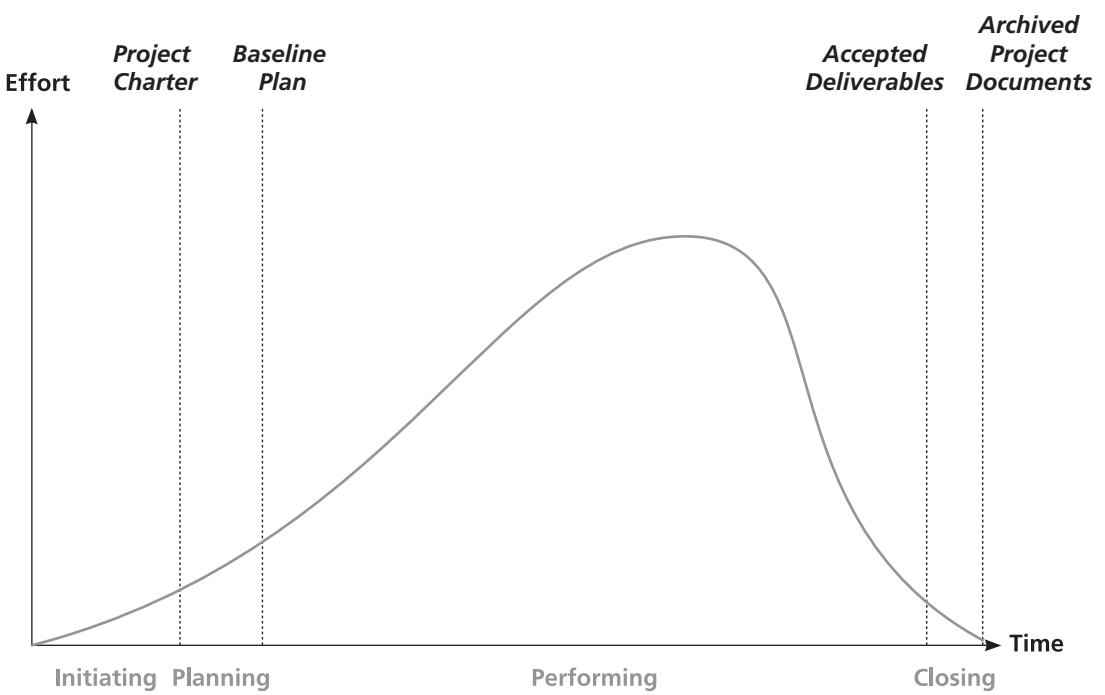
3. What are eight factors that constrain the achievement of a project objective?

The generic **project life cycle** has four phases: initiating, planning, performing, and closing the project. Figure 1.2 shows the four phases and the relative level of effort and time devoted to each phase. The time span of each phase and the associated level of effort will vary depending on the specific project. Project life cycles vary in length from a few weeks to several years, depending on the content, complexity, and magnitude of the project.

In the **initiating phase**, projects are identified and selected. They are then authorized, using a document referred to as a **project charter**. The **planning phase** includes defining the project scope, identifying resources, developing a schedule and budget, and identifying risks, all of which make up the **baseline plan** for doing the project work. In the **performing phase**, the project plan is executed, and activities are carried out to produce all the **project deliverables** and to accomplish the project objective. During this phase, the project progress is monitored and controlled to assure the work remains on schedule and within budget, the scope is fully completed according to specifications, and all deliverables meet acceptance criteria. Also, any changes need to be documented, approved, and incorporated into an updated baseline plan if necessary. In the **closing phase**, project evaluations are conducted, lessons learned are identified

FIGURE 1.2 Project Life Cycle Effort



and documented to help improve performance on future projects, and **project documents** are organized and **archived**.

Reinforce Your Learning

4. Match the phases of the project life cycle, listed first, with the descriptions that follow:

__ First phase
__ Second phase
__ Third phase
__ Fourth phase
A. Planning
B. Performing
C. Initiating
D. Closing

INITIATING

This first phase of the project life cycle involves the identification of a need, problem, or opportunity and can result in the sponsor authorizing a project to address the identified need or solve the problem. Projects are initiated when a need is identified by a sponsor—the people or the organization willing to provide funds to have the need satisfied. For example, a company may need to reduce the high scrap rate from its manufacturing process that makes its costs higher and production times longer than those of its competitors, or a community with a growing population may need to build a new school. In some cases, it could take several months to clearly define a need, gather data, and define the project objective. For example, the management of a hospital may want to establish an on-site day care center for the children of its employees as part of its strategy to attract and retain employees. However, it may take some time to gather data regarding the need and analyze various approaches to addressing the need. It is important to define the right need. For example, is the need to provide an on-site day care center, or is it to provide child care for the children of the hospital's employees? That is, is "on-site" necessarily part of the need?

The need for projects is often identified as part of an organization's strategic planning process. Projects are a means to implement elements of specific strategies or actions, such as build an offshore wind farm, deploy a nutrition assistance program in a developing country, construct a new manufacturing facility in South America, or implement a corporate-wide online training program. Organizations may have many projects they would like to pursue, but they may be limited by the amount of available funds. Although an individual may need an addition to his house, need a new car, and want to go on a two-week vacation, he may not have the money to do all of those things. Therefore, organizations must employ a process to select which projects to pursue. Once projects are selected, they are formally authorized using a document referred to as a *project charter*. The charter may include the rationale or justification for the project; project objective and expected benefits; general requirements and conditions such as amount of funds authorized, required completion date, major deliverables, and required reviews and approvals; and key assumptions.

Reinforce Your Learning

5. A project is authorized using a document called a _____.

If the organization decides to use external resources (a contractor) to perform the project, the organization will prepare a document called a *request for proposal (RFP)* that defines the project requirements and is used to solicit proposals from potential contractors to do the project. Through the RFP, the sponsor or customer asks contractors to submit proposals on how they might address the need and the associated costs and schedule to do so. An individual who needs a new house may spend time identifying requirements for the house—size, style, number of rooms, location, maximum amount she wants to spend, and date by which she would like to move in. She may then write down these requirements and ask several contractors to provide house plans and cost estimates. A company that has identified a need to develop a multifaceted advertising campaign for a new food product might document its requirements in an RFP and send it to several advertising firms. The advertising firms would submit proposals to the company. The company would then evaluate the competing

proposals and select an advertising firm (the contractor) to do the advertising campaign (the project) and sign an agreement or contract with that firm.

PLANNING

Before jumping in and starting the project, the project team or contractor must take sufficient time to properly plan the project. It is necessary to lay out a roadmap, or game plan, that shows how the project scope will be accomplished within budget and on schedule. Trying to perform a project without a plan is like attempting to assemble a backyard grill without first reading the instructions. Individuals who think planning is unnecessary or a waste of time invariably need to find time later on to redo things. It is important to *plan the work and then work the plan.* Otherwise, chaos and frustration will result, and the risk of project failure will be higher. Once a project is authorized and/or a contract is signed with an external contractor, the next phase of the project life cycle is to do detailed planning for how to accomplish the project. The planning involves determining *what* needs to be done (scope, deliverables), *how* it will get done (activities, sequence), *who* will do it (resources, responsibility), *how long* it will take (durations, schedule), *how much* it will cost (budget), and what the *risks* are. The result of this effort is a *baseline plan* that is a set of integrated documents that shows how the project scope will be accomplished within budget and on schedule and is used as a benchmark to which actual performance can be compared.

Reinforce Your Learning

6. The result of the planning phase is a _____.

Taking the time to develop a well-thought-out plan is critical to the successful accomplishment of any project. Many projects have overrun their budgets, missed their completion dates, or only partially satisfied their technical specifications because there was no viable baseline plan in place before they were started. It is important that the people who will be involved in performing the project also participate in planning the work. They are usually the most knowledgeable about which detailed activities need to be done. Also, by participating in the planning of the work, these individuals become committed to accomplishing it according to the plan. Participation builds commitment.

PERFORMING

The third phase of the project life cycle is performing the project. Once the baseline plan has been developed, work can proceed. The project team, led by the project manager, will execute the plan and perform the activities to produce all the deliverables and to accomplish the project objective. The pace of project activity will increase as more and various resources become involved in performing the project tasks. During the course of performing the project, different types of resources will be utilized. For example, if the project is to design and construct an office building, the project effort might first involve a few architects and engineers in developing the building plans. Then, as construction gets under way, the resources needed will substantially increase to include steelworkers, carpenters, electricians, painters, and the like. The level of effort will decrease after the building is finished, and a smaller number of different workers will finish up the landscaping and final interior touches.

This phase results in the accomplishment of the project objective, leaving the customer satisfied that the full scope of the work and deliverables were completed according to specifications, within budget, and on time. For example, the

performing phase is complete when a project team within a company has completed a project that consolidated two of its facilities into one, or when an external contractor has completed the design and installation of a customized information system that satisfactorily passes performance tests and is accepted by the customer.

Reinforce Your Learning

7. In the performing phase, the project plan is _____ to produce all the _____ and to accomplish the _____.

While the project work is being performed, it is necessary to *monitor and control the progress* of the project work to ensure that everything is going according to plan and the project objective will be accomplished. This involves measuring actual progress and comparing it to planned progress according to the baseline plan. To measure actual progress, it is important to keep track of which tasks have actually been started and completed, when they were started and completed, the earned value of the work completed, if the project deliverables are meeting the expected quality criteria, and how much money has been spent or committed. If, at any time during the project, comparison of actual progress to planned progress reveals that the project is behind schedule, overrunning the budget, or not meeting the technical specifications, corrective action must be taken to get the project back on track.

Before a decision is made to implement corrective action, it may be necessary to evaluate several alternative actions to make sure the corrective action will bring the project back within the scope, schedule, and budget constraints of the project objective. Be aware, for instance, that adding resources to make up time and get back on schedule may result in overrunning the planned budget. If a project gets too far out of control, it may be difficult to accomplish the project objective without sacrificing the scope, budget, schedule, or quality. The key to effective project control is measuring actual progress and comparing it to planned progress on a timely and regular basis throughout the performing phase and taking any needed corrective action immediately. Hoping that a problem will go away without corrective intervention is naive. The earlier a problem is identified and corrected, the better. Based on actual progress, it is possible to forecast a schedule and budget for completion of the project. If these parameters are beyond the limits of the project objective, corrective actions need to be implemented at once.

Changes are going to occur during the performing phase. So it is important to *manage and control changes* to minimize any negative impact on the successful accomplishment of the project objective. A change control system needs to be established for the process and procedures that define how changes will be documented, approved, and communicated. Agreement must be reached between the sponsor or customer and the project manager or contractor, as well as between the project manager and the project team, regarding the way changes will be handled. These procedures should address communication between the project manager and the sponsor or customer and between the project manager and the project team. If changes are consented to verbally rather than approved in writing and there is no indication given of the impact the changes will have on the work scope, budget, or schedule, there are bound to be problems down the road. Project team members should be careful about casually agreeing to changes without knowing whether they will necessitate additional person-hours of work. If the customer does not agree to pay for extra effort, the contractor must absorb the additional costs and also risk overrunning costs for a particular activity or the project.

Some changes are trivial, but others may significantly affect the project work scope, budget, or schedule. Deciding to change the color of a room before it is

painted is a trivial change. Deciding that you want a two-story house after the contractor has already put up the framing for a single-story house is a major change, and would certainly increase the cost and probably delay the completion date.

The impact a change has on accomplishing the project objective may be affected by when the change is identified. Generally, *the later in the project that changes are identified, the greater their effect on accomplishing the project objective*. The aspects most likely to be affected are the project budget and the completion date. This is particularly true when work that has already been completed needs to be "undone" to accommodate the required change. For example, it would be very expensive to change the plumbing or wiring in a new office building after the walls and ceilings are completed because some of them would need to be torn out and new ones installed. However, if such a change was made much earlier in the project—for instance, while the building was still being designed—the accommodation would be easier and less costly. The drawings could be changed so that the plumbing and wiring would be installed correctly the first time.

The project manager, project team, contractor, or sponsor/customer may initiate changes. Some changes could be necessary as a result of the occurrence of a previously defined risk, such as a new product development not meeting certain test criteria, which would mean additional redesign work.

When it is determined that corrective actions or changes are necessary, decisions must be made regarding how to update the baseline plan. These decisions often mean a trade-off involving time, cost, scope, and quality. For example, reducing the duration of an activity may require either increasing costs to pay for more resources or reducing the scope of the activity (and possibly not meeting the customer's technical requirements). Similarly, reducing project costs may require using materials of a lower quality than originally planned. Once a decision is made on which actions to take, they must be incorporated into the schedule and budget. It is necessary to develop a revised schedule and budget to determine whether the planned corrective measures or changes result in an acceptable schedule and budget. If not, further revisions must be made until an acceptable revised baseline plan is agreed upon.

The performing phase of the project life cycle ends when the sponsor or customer is satisfied that the project objective has been accomplished and that the requirements have been met, and accepts the project deliverables.

CLOSING

The final phase of the project life cycle is closing the project. The process of closing the project involves various actions, including collecting and making final payments, evaluating and recognizing staff, conducting a postproject evaluation, documenting lessons learned, and archiving project documents.

The project organization should ensure that copies of appropriate project documentation are properly organized, filed, and archived so that they can be readily retrieved for use in the future. For example, using some actual cost and schedule information from a completed project may be helpful when developing the schedule and estimated costs for a proposed project.

An important task during this phase is evaluating performance of the project. The project team should identify lessons learned and make recommendations for improving performance on future projects. To encourage the use of this information, a knowledge base system should be established that includes an easily

accessible repository to retrieve lessons learned and information from previous projects.

Feedback should also be obtained from the sponsor or customer to determine whether the anticipated benefits from the project were achieved, assess the level of customer satisfaction, and obtain any feedback that would be helpful in future business relationships with this customer or other customers.

Project Management Process

Project management is planning, organizing, coordinating, leading, and controlling resources to accomplish the project objective. The project management process involves *planning the work and then working the plan.* A coaching staff may spend hours preparing a unique plan for a game; the team then executes the plan to try to accomplish the objective—victory. Similarly, the project management process involves two major functions: first *establishing a plan* and then *executing that plan* to accomplish the project objective.

Reinforce Your Learning

8. Project management involves first _____ a _____ and then _____ that _____.

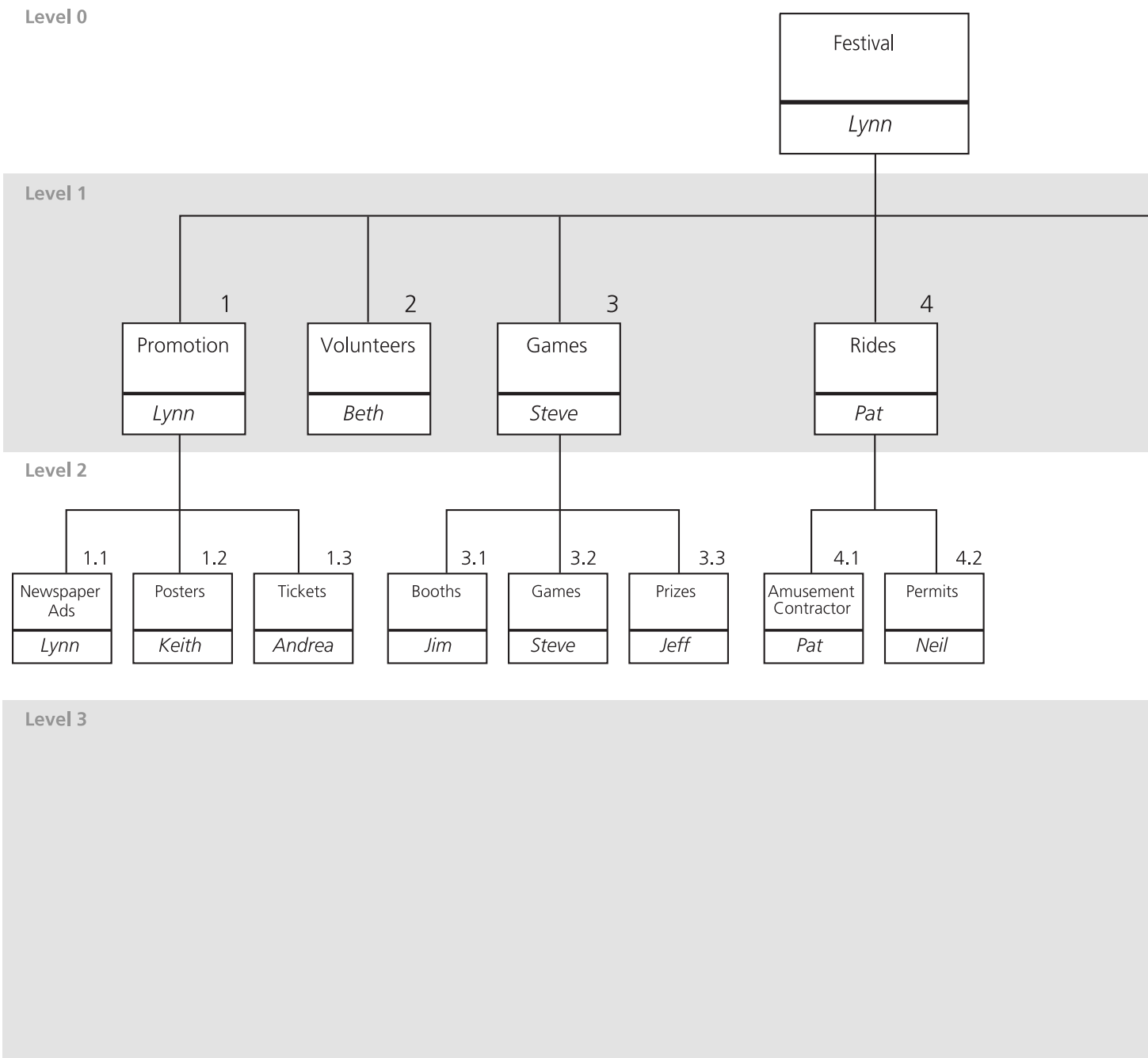
Once the sponsor has prepared a project charter to authorize going forward with a project, the front end effort in managing a project must be focused on establishing a realistic baseline plan that provides a set of integrated documents that shows how the project scope will be accomplished within budget and on schedule. The project objective establishes what is to be accomplished. The **planning** process determines *what* needs to be done (scope, deliverables), *how* it will get done (activities, sequence), *who* will do it (resources, responsibility), *how long* it will take (durations, schedule), and *how much* it will cost (budget). It includes the following steps:

Reinforce Your Learning

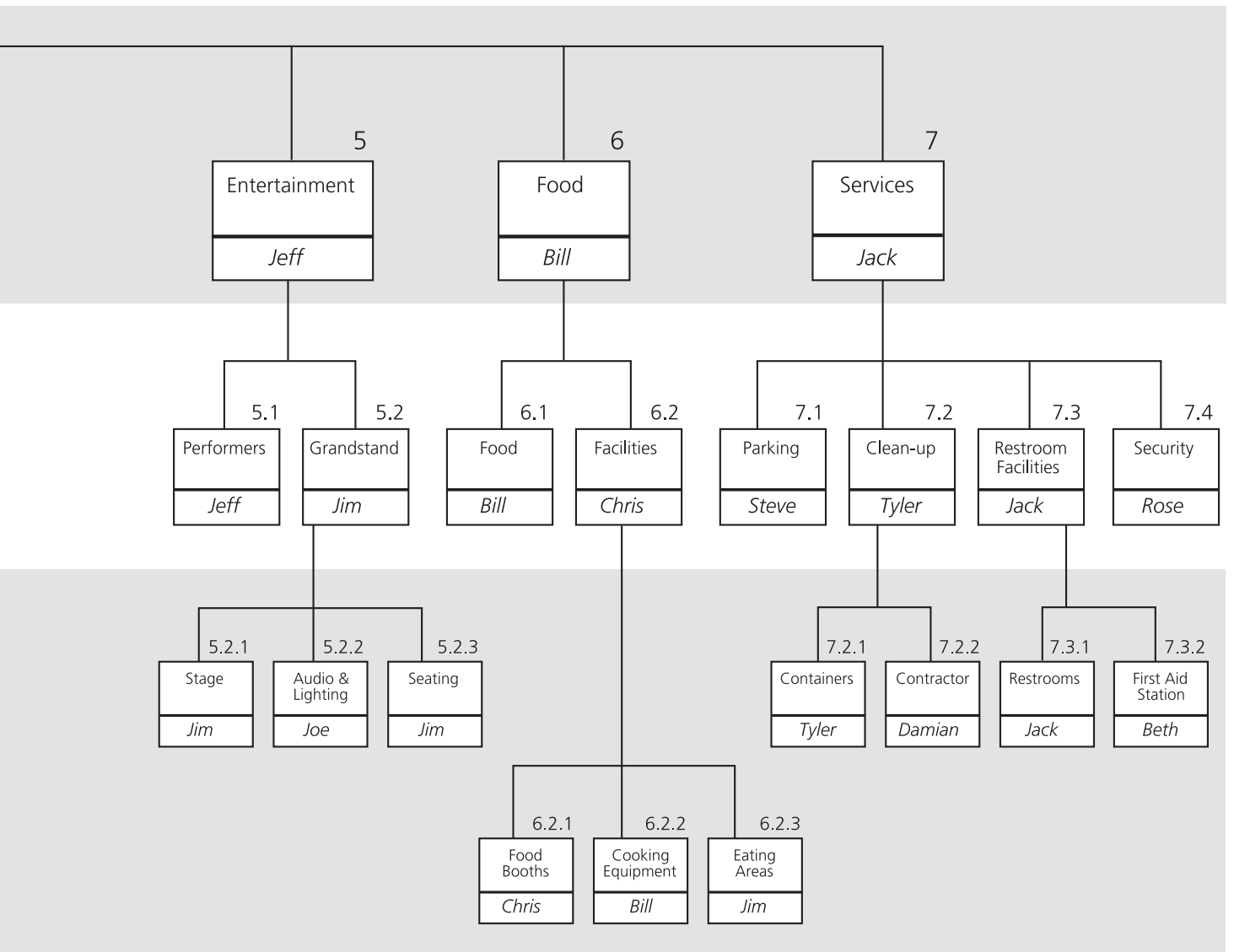
9. The project _____ must be agreed upon by the _____ and the organization that will _____ the project.

1. *Establish project objective.* The objective must be agreed upon by the sponsor or customer and the organization that will perform the project.
2. *Define scope.* A project scope document must be prepared. It should include customer requirements, a statement of work, as well as a list of deliverables and associated acceptance criteria that can be used to validate that the work and deliverables meet specifications.
3. *Create a work breakdown structure.* Subdivide the project scope into pieces or **work packages**. Although projects may seem overwhelming when viewed as a whole, one way to conquer even the most monumental endeavor is to break it down into smaller components. A **work breakdown structure (WBS)** is a hierarchical decomposition of the project work scope into work packages to be executed by the project team that will produce the project deliverables. Figure 1.3 is an example of a WBS.
4. *Assign responsibility.* The person or organization responsible for each work item in the WBS must be identified in order to inform the project team of who is responsible and accountable for the performance of each work package and any associated deliverables. For example, Figure 1.3 indicates who is responsible for each work item.
5. *Define specific activities.* Review each work package in the WBS and develop a list of the detailed activities that need to be performed for each work package and to produce any required deliverables.
6. *Sequence activities.* Create a **network diagram** that shows the necessary sequence and dependent relationships of the detailed activities that need to be performed to achieve the project objective. Figure 1.4 is an example of a network diagram.

FIGURE 1.3 Work Breakdown Structure

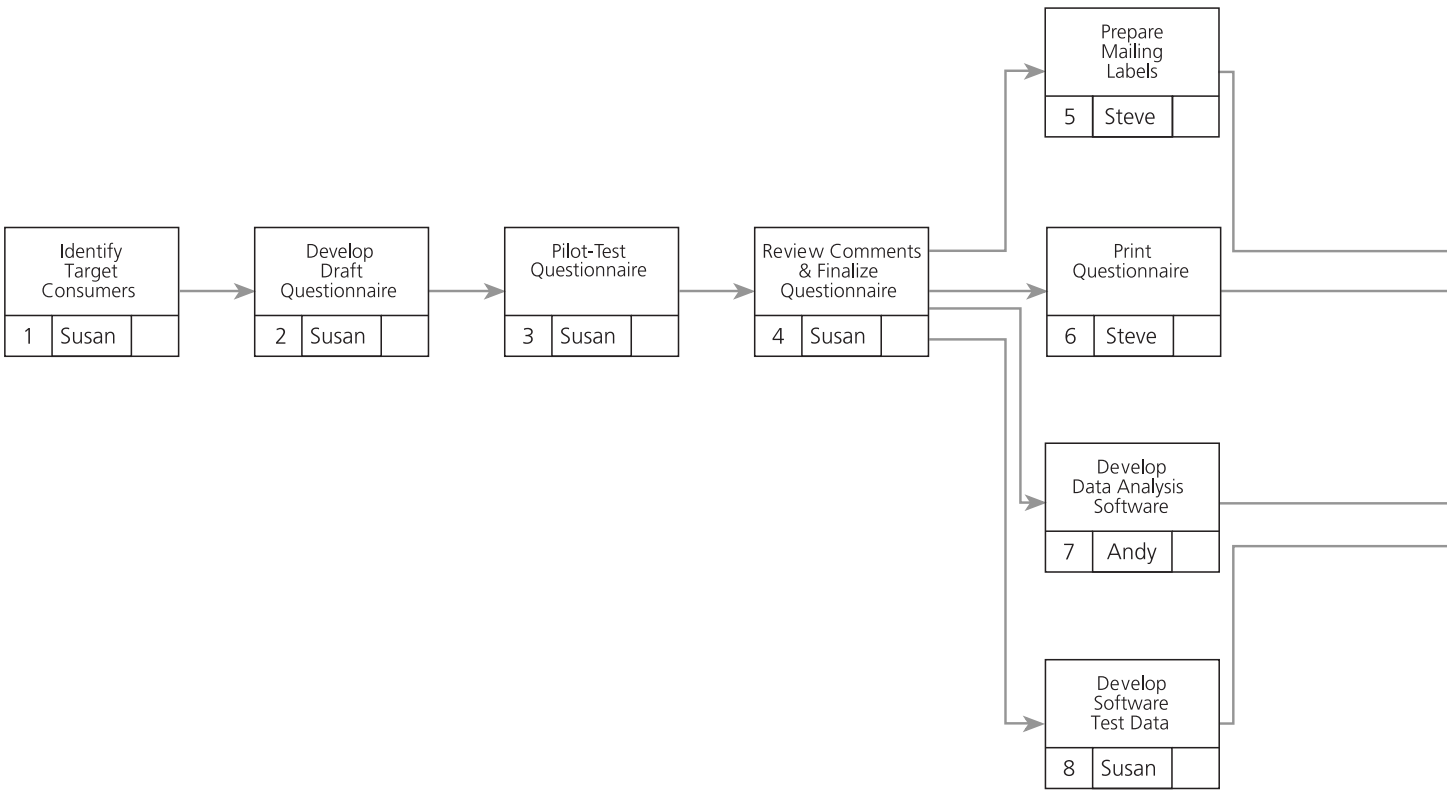


7. *Estimate activity resources.* Determine the types of resources, such as the skills or expertise required to perform each activity, as well as the quantity of each resource that may be needed. Resources include people, materials, equipment, and so on that may be required to perform each activity.

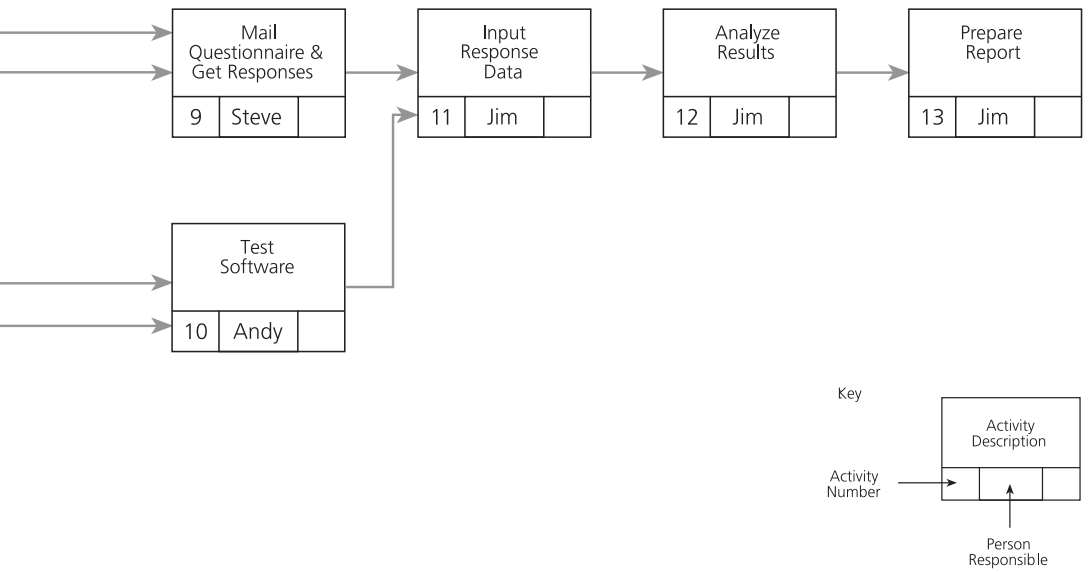


Resource estimates must consider the availability of each type of resource, whether it is internal or external (such as subcontractors), and the quantity available over the duration of the project. Designate a specific individual to be responsible for each activity.

FIGURE 1.4 **Network Diagram**



8. *Estimate activity durations.* Make a time estimate for how long it will take to complete each activity, based on the estimate of the resources that will be applied.
9. *Develop project schedule.* Based on the estimated duration for each activity and the dependent relationships of the sequence of activities in the network diagram, develop the overall project schedule, including when each activity is expected to start and finish, as well as the latest times that each activity must start and finish in order to complete the project by the required completion date. Figure 1.5 is an example of a project schedule.
10. *Estimate activity costs.* Activity costs should be based on the types and quantities of resources estimated for each activity as well as the appropriate labor cost rate or unit cost for each type of resource.
11. *Determine budget.* A total budget for the project can be developed by aggregating the cost estimates for each activity. Similarly, budgets can be determined for each work package in the WBS by aggregating the cost estimates for the detailed activities for each work package. Other costs, such as project or organizational administrative, indirect, or overhead costs, should also be included in the budget and be appropriately allocated to each activity or work package. Once the total budget is determined for the overall project or



for each work package, a time-phased budget needs to be developed to distribute the budget over the duration of the project or work package based on the project schedule for when each activity is expected to start and finish. Figure 1.6 is an example of a time-phased project budget.

Once the project schedule and budget are developed, it must be determined whether the project can be completed within the required time, with the allotted funds, and with the available resources. If not, adjustments must be made to the project scope, activity resource or duration estimates, or resource assignments until an achievable, realistic **baseline plan** for accomplishing the project scope within budget and on schedule can be established.

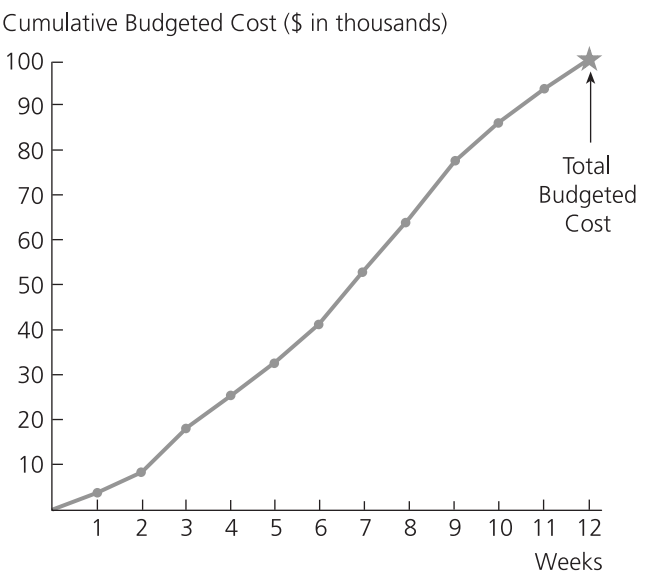
The result of the planning process is a **baseline plan**. Taking the time to develop a well-thought-out plan is critical to the successful accomplishment of any project. Many projects have overrun their budgets, missed their completion dates, or only partially met their requirements because there was no viable baseline plan before the project was started.

The baseline plan for a project can be displayed in graphical or tabular format for each time period (week, month) from the start of the project to its

FIGURE 1.5 Project Schedule

	Activity	Respon.	Dur. Estim.	Earliest		Latest		Total Slack
				Start	Finish	Start	Finish	
1	Identify Target Consumers	Susan	3	0	3	–8	–5	–8
2	Develop Draft Questionnaire	Susan	10	3	13	–5	5	–8
3	Pilot-Test Questionnaire	Susan	20	13	33	5	25	–8
4	Review Comments & Finalize Questionnaire	Susan	5	33	38	25	30	–8
5	Prepare Mailing Labels	Steve	2	38	40	38	40	0
6	Print Questionnaire	Steve	10	38	48	30	40	–8
7	Develop Data Analysis Software	Andy	12	38	50	88	100	50
8	Develop Software Test Data	Susan	2	38	40	98	100	60
9	Mail Questionnaire & Get Responses	Steve	65	48	113	40	105	–8
10	Test Software	Andy	5	50	55	100	105	50
11	Input Response Data	Jim	7	113	120	105	112	–8
12	Analyze Results	Jim	8	120	128	112	120	–8
13	Prepare Report	Jim	10	128	138	120	130	–8

FIGURE 1.6 Time-phased Project Budget



completion. Plans are discussed and illustrated in Chapters 4–7. Information should include:

- The start and completion dates for each activity
- The amounts of the various resources that will be needed during each time period
- The budget for each time period, as well as the cumulative budget from the start of the project through each time period

Once a baseline plan has been established, the plan must be executed. The executing process involves performing the work according to the plan, monitoring and controlling the work, and managing changes so that the project scope is achieved within the budget and schedule to the customer's satisfaction. It includes the following elements:

1. *Perform the work.* All the activities in the baseline plan, as depicted in the network diagram, must be performed in accordance with the project schedule and technical specifications. All deliverables must be produced and meet their acceptance criteria. Accomplishing this requires coordination of the project team, including external resources, and regular communication with all stakeholders, including the sponsor or customer, to make sure that expectations are being met.
2. *Monitor and control progress.* While the project work is being performed, it is necessary to monitor progress to ensure that everything is going according to plan. It is also necessary to measure actual progress and compare it to planned progress. If, at any time during the project, the comparison of actual progress to planned progress reveals that the project is behind schedule, overrunning the budget, or not meeting the technical specifications, corrective action must be taken to get the project back on track within the scope, schedule, and budget constraints of the project objective. Be aware, for instance, that adding resources to make up time and get back on schedule may result in overrunning the planned budget. If a project gets too far out of control, it may be difficult to achieve the project objective without sacrificing the scope, budget, schedule, or quality. The key to effective project control is measuring actual progress and comparing it to planned progress on a timely and regular basis and taking any needed corrective action immediately. Hoping that a problem will go away without corrective intervention is naive. Based on actual progress, it is possible to forecast a schedule and budget for completion of the project. If these parameters are beyond the limits of the project objective, corrective actions need to be implemented at once.
3. *Control changes.* During the performance of the project work, changes will occur for a variety of unexpected reasons, such as some activities taking longer than expected to complete, resources not being available when needed, materials costing more than anticipated, or the occurrence of identified risks. Also, the project manager, contractor, or the sponsor/customer can request changes to the project scope based on new information or the result of project reviews. Changes are fine if the customer and the project manager or contractor agree on them, and both parties are aware of the impact the changes may have on the scope, schedule, budget, and accomplishment of the project objective. It is important to manage and control changes to minimize any negative impact on the successful accomplishment

of the project objective. A change control system needs to be established for the process and procedures that define how changes will be documented, approved, and communicated. Agreement must be reached with the sponsor or customer on such a system, and it must be communicated to all project participants.

Attempting to perform a project without first establishing a baseline plan is foolhardy. It is similar to starting a vacation without a roadmap, itinerary, and budget. You may end up in the middle of nowhere—out of money and out of time!

Stakeholder Engagement

Project **stakeholders** are individuals or entities involved in, or who may influence, or may be affected by a project, such as the customer/sponsor; project team, including the project manager, subcontractors, and consultants; end users or consumers; and advocacy groups. In addition to the customer/sponsor and the project team including subcontractors and suppliers, stakeholders can be organizations or groups of people who may be supportive or adversarial or may want to be kept informed about the project because of potential impact.

Examples of stakeholders for various projects include:

Staff of a medical practice who will use a new electronic health records system

Community or neighborhood that will be affected by the route of a new highway

Small retailers near the construction of a new shopping mall

Advocacy group that is concerned about the environmental and safety impact of a new chemical facility

Advisory groups such as parents who provide input to the design of new playground at a childcare center, or emergency room staff who provide input to the redesign and expansion of an emergency room

Government regulatory agencies that are concerned about code enforcement, pharmaceutical drug trials, or conducting public forums to solicit citizen comments for certain types of projects

It is important to identify a project's stakeholders as early as possible in the project life cycle. The project sponsor may identify specific stakeholders in the project charter authorizing the project. Additionally, the project manager can ask or have a brainstorming session with the project team to identify stakeholders, or perhaps to create advisory groups to provide input and guidance to the project or portions of a project. The project manager can also network with other organizations, such as community groups, nonprofit organizations, professional organizations, or local government officials, to help identify potential stakeholders. Identifying potential stakeholders as early as possible in the project will help to avoid surprises later. For example, if a certain group finds out about a particular issue with a project, and they were not informed about it beforehand or included, it can create an adversarial situation and make it more difficult to build a trust relationship.

As potential stakeholders are identified, a list should be created that includes key contact information, role or specific topics of interest, expectations, any known issues, and areas of potential influence for each stakeholder. Such a document is sometimes referred to as a **stakeholder register**. During the performance of the project, information about stakeholders may change or additional

stakeholders may be identified. The stakeholder register is a convenient tool to keep all stakeholder information consolidated and up-to-date.

The project manager and team need to build a relationship with each stakeholder that is tailored to each stakeholder's specific interests in the project. The project team needs to be proactive and take the initiative to contact and engage each stakeholder, listen to their interests, needs, expectations and concerns, rather than waiting for the stakeholders to approach and then be in a reactive or defensive mode. Good relationships are built on trust and respect; and trust and respect are built on being honest, ethical, and delivering on promises. The project team should welcome stakeholder input, involvement, discussions, and debate. It will build support for the project. Stakeholders' concerns should be addressed early, positively, and in a timely manner, and not confrontationally, put off, ignored, or dismissed. The project manager needs to provide opportunities for regular two-way communication with each stakeholder, not just when an issue or concern is identified. The project manager and team need to listen, be open-minded, thoughtful, and behave professionally, and not dominate the discussions, overreact, become defensive, or lose control of their emotions. In most situations, each stakeholder should be dealt with separately because each has their unique interests and concerns, rather than dealing with all stakeholders as a group.

An **issue log** should be created of specific issues or concerns or questions that various stakeholders identify so that the project manager, project team, or sponsor/customer can address them and make sure they are not forgotten or dismissed without an adequate follow-up and response. The project team should keep the issue log up-to-date indicating the status of which issues have been addressed or resolved, new issues added, and those that may require negotiation to resolve specific disputes. If any stakeholder's specific issue cannot be satisfied or resolved, it is important that a detailed clear explanation be provided, so that the stakeholder knows the reasons or rationale behind the decision, even if they may not agree with it.

Reinforce Your Learning

10. What are the keys to successful stakeholder engagement?

Stakeholder engagement and support are important to the successful performance of a project and accomplishment of the project objective. Regular and open communication, trust, respect, open-mindedness, and a positive win-win attitude are keys to successful stakeholder engagement.

Global Project Management

Globalization adds a unique dimension to managing projects. It changes the dynamics of the project and adds a layer of complexity that can adversely affect the project outcome if the project participants are not aware of what they might encounter regarding cultural differences and multinational economic transactions. For example, there could be a project contractual outsourcing requirement to spend a percentage of the project budget on wages and materials in the customer's country by employing indigenous labor to perform certain project tasks and using in-country suppliers for project materials. Factors external to the project itself, or to the project or customer organizations, can create a dynamic and perhaps unstable environment over the life of the project, introduce sources of risk, and affect the success of the project. Such influencing factors can include:

- Currency fluctuations and exchange rates
- Country-specific work codes and regulations, such as hours per day, holidays, and religious observances

- Corporate joint ventures and partnerships creating entities with a presence and facilities in multiple countries
- Political relations between countries
- Availability of high-demand workforce skills

Large international events, such as the Olympics or rebuilding a region after a natural disaster, require multilingual project teams. Global projects can be multinational and multilingual, with participants who are located in various countries and who speak different languages. These aspects can create barriers to communication, team development, and project performance.

Global project management requires an additional set of competencies. It is helpful for the project manager and team to have foreign language skills and also knowledge and understanding of other countries and cultures, as well as geography, world history, and international economics (currencies, exchange rates, export/import transactions, and so forth). There is a need to have awareness and understanding of the culture and customs (meal times, eye contact, possible differing roles of men and women, dress codes, religious practices, lines of authority, communication protocol, and so forth) and etiquette (for example, in some countries crossing your legs when sitting is considered an insult, or shaking hands or touching someone of the opposite sex is frowned upon) of the countries of the various project participants (project team, customer, subcontractors, and suppliers). It is also vital to have an awareness of the geopolitical environment of the countries of the various project participants, in particular the country of the customer, or where the project is being delivered or implemented.

Technology enables project participants to be just a click away, despite being thousands of miles apart physically. It also helps to reduce the impact that time zone differences among the locations of various project participants can have on project communication. One way to facilitate communication in multilingual project teams is to utilize software that translates e-mails and documents among the languages of the various project participants.

Globalization and the Internet have also brought new opportunities for firms, as seen in multisourcing project work elements to more competitive participants worldwide as well as in purchasing materials and services from suppliers around the globe.

Cultural awareness and sensitivity are not only important but also imperative for successful global project management. Learning and understanding the culture and customs of other project participants demonstrate respect, help build trust, aid in developing an effective project team, and are critical for successful global project management.

See the section on valuing team diversity in Chapter 11 and the section on collaborative communication tools in Chapter 12 for additional related information. Also see Appendix C for a list of project management associations around the globe.

Reinforce Your Learning

11. _____ and sensitivity are not only important but also _____ for successful _____ project management.

Project Management Associations

The Project Management Institute (PMI) is a premier worldwide not-for-profit association for practitioners in the project management profession and individuals who want to learn more about the profession. Founded in 1969, PMI has about 500,000 members in over 200 countries and has about 280 chapters in more than 90 countries. Additionally, the association has over 30 online communities of practice where peers can collaborate on specific topics of interest.

PMI publishes *A Guide to the Project Management Body of Knowledge (PMBOK® Guide),* which provides a framework of processes and guidelines for the application of project management concepts, practices, and techniques. The association also created the *PMI Code of Ethics and Professional Conduct*, which sets standards and establishes expectations for professional behavior.

PMI offers a certification program that provides the opportunity to earn certifications in various project management disciplines. There are well over 750,000 individuals worldwide who hold PMI certifications. Additional and current information about the Project Management Institute can be found at http://www.pmi.org.

There are also many other project management associations around the globe. Appendix C provides a list of approximately 60 such associations. Their website addresses can be found on this book's student companion website.

Benefits of Project Management

The ultimate benefit of implementing project management techniques is having a satisfied customer—whether you are the customer of your own project, such as remodeling your basement, or a business (contractor) being paid by a customer to perform a project. Completing the full project scope in a quality manner, on time, and within budget provides a great feeling of satisfaction. For a contractor, it could lead to additional business from the same customer in the future or to business from new customers referred by previously satisfied customers.

"Hey! Great for the customer, but what about me? What's in it for me?" If you are the project manager, you have the satisfaction of knowing you led a successful project effort. You also have enhanced your reputation as a project manager and positioned yourself for expanded career opportunities. If you are a member of a project team that successfully accomplished a project, you feel the satisfaction of being on a winning team. You not only contributed to the project's success but also probably expanded your knowledge and enhanced your skills along the way. If you choose to remain an individual contributor, you will be able to make a greater contribution to future, more complex projects. If you are interested in eventually managing projects, you will be in a position to take on additional project responsibilities. When projects are successful, everybody wins!

CRITICAL SUCCESS FACTORS

- Planning and communication are critical to successful project management. They prevent problems from occurring or minimize their impact on the accomplishment of the project objective when they do occur.
- Taking the time to develop a well-thought-out plan before the start of the project is critical to the successful accomplishment of any project.
- A project must have a clear objective of what is to be accomplished and defined in terms of end product or deliverable, schedule, and budget, and agreed upon by the customer.
- Involve the sponsor or customer as a partner in the successful outcome of the project through active participation during the project.
- Achieving customer satisfaction requires ongoing communication to keep the customer informed and to determine whether expectations have changed.
- The key to effective project control is measuring actual progress and comparing it to planned progress on a timely and regular basis and taking any needed corrective action immediately.
- After the conclusion of a project, the project performance should be evaluated to learn what could be improved if a similar project were to be done in the future. Feedback should be obtained from the sponsor or customer and the project team.
- Identify, engage, and build relationships with stakeholders as early as possible to gain their support.
- Learning and understanding the culture and customs of other project participants will demonstrate respect, help build trust, and aid in developing an effective project team, and it is critical for successful global project management.

SUMMARY

A project is an endeavor to accomplish a specific objective through a unique set of interrelated activities and the effective utilization of resources. It has a clear objective that establishes what is to be accomplished in terms of the end product or deliverable, schedule, and budget. A project also has interdependent activities, uses various resources, has a specific time frame, is a unique one-time endeavor, has a sponsor or customer, and involves a degree of uncertainty. The successful accomplishment of the project objective could be constrained by many factors, including scope, quality, schedule, budget, resources, risks, customer satisfaction, and stakeholder support.

The project life cycle has four phases: initiating, planning, performing, and closing the project. In the initiating phase, projects are identified and selected. They are then authorized using a document referred to as a project charter. The planning phase includes defining the project scope, identifying resources, developing a schedule and budget, and identifying risks, all of which make up the baseline plan for doing the project work. In the performing phase, the project plan is executed and activities are carried out to produce all the project deliverables and to accomplish the project objective. During this phase, the project progress is monitored and controlled to assure the work remains on schedule and within budget, the scope is fully completed according to specifications, and all deliverables meet acceptance criteria. Also, any changes need to be documented, approved, and incorporated into an updated baseline plan if necessary. In

the closing phase, project evaluations are conducted, lessons learned are identified and documented to help improve performance on future projects, and project documents are organized and archived.

Project management is planning, organizing, coordinating, leading, and controlling resources to accomplish the project objective. The project management process involves two major functions: first establishing a plan and then executing that plan to accomplish the project objective. The planning process includes the following steps: establish the project objective, define scope, create a work breakdown structure, assign responsibility, define specific activities, sequence activities, estimate activity resources, estimate activity durations, develop a project schedule, estimate costs, and determine the budget. The executing process involves three elements: perform the work, monitor and control progress, and control changes.

Project stakeholders are individuals or entities involved in, or who may influence, or may be affected by a project. They can be organizations or groups of people who may be supportive or adversarial or may want to be kept informed about the project because of potential impact. It is important to identify a project's stakeholders as early as possible in the project life cycle. A stakeholder register should be created that includes key contact information, role or specific topics of interest, expectations, any known issues, and areas of potential influence for each stakeholder. The project manager and team need to build a relationship with each stakeholder that is tailored to each stakeholder's specific interests in the project. Stakeholder engagement and support are important to the successful performance of a project and accomplishment of the project objective. Regular and open communication, trust, respect, open-mindedness, and a positive win-win attitude are keys to successful stakeholder engagement.

Globalization changes the dynamics of a project and adds a layer of complexity that can adversely affect the project outcome if the project participants are not aware of what they might encounter regarding cultural differences and multinational economic transactions. Factors external to the project itself, or to the project or customer organizations, can create a dynamic and perhaps unstable environment over the life of the project, introduce sources of risk, and affect the success of the projects. Global projects can be multinational and multilingual, with participants who are located in various countries and who speak different languages. Technology (for example, computers, Internet access) enables project participants to be just a mouse-click away, despite being thousands of miles apart physically. Global project management requires an additional set of competencies. Cultural awareness and sensitivity are not only important but also imperative for successful global project management. Learning and understanding the culture and customs of other project participants demonstrate respect, help build trust, aid in developing an effective project team, and are critical for successful global project management.

The Project Management Institute is a premier worldwide not-for-profit association for practitioners in the project management profession. It publishes *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, which provides a framework of processes and guidelines for the application of project management concepts, practices, and techniques.

The ultimate benefit of implementing project management techniques is having a satisfied customer—whether you are the customer of your own project or a business (contractor) being paid by a customer to perform a project. Completing the full project scope in a quality manner, on time, and within budget provides a great feeling of satisfaction to everyone involved in the project.

QUESTIONS

1. Define project.
2. Define the term project objective, and give some examples.
3. List some examples of resources that are used on a project.
4. What role does a customer have during the project life cycle? Why is it important to satisfy the customer?
5. What aspects of a project might involve some degree of uncertainty? Why?
6. Define scope, schedule, cost, and customer satisfaction. Why are these considered to be constraints?
7. List and describe the main phases of the project life cycle.
8. List and describe the steps required to develop a baseline plan.
9. Why must a manager monitor the progress of a project? What can be done if a project is not proceeding according to plan?
10. Think of a project in which you were involved and identify the stakeholders and what "stake" each had in the project.
11. Describe how a global project can be more complex than a project performed within just one country. How might these elements affect the successful outcome of the global project?
12. List some benefits of using project management techniques.
13. Consider a project in which you are currently involved (or in which you have recently been involved).
    a. Describe the objectives, scope, schedule, cost, and any assumptions made.
    b. Where are you in the project life cycle?
    c. Does this project have a baseline plan? If yes, describe it. If not, create it.
    d. Are you or is anyone else monitoring the progress of the project? If so, how? If not, how could you do so?
    e. Describe some unexpected circumstances that could jeopardize the success of the project.
    f. Describe the anticipated benefits of the project.

CASE STUDY

E-Commerce for a Small Supermarket

Matt and Grace own a small supermarket in a rural town with a large and growing elderly population. Because of their remote location, they don't have any competition from the large chain stores. A small private liberal arts college, with about 1,500 students, is also located in the town.

"I think we need an app and a website for our store," Matt tells Grace.

"Why?" asks Grace.

"Everybody has an app. It's the wave of the future!" responds Matt.

"I'm still not clear, Matt. What would be on our app or on our website?" Grace asks.

"Well, for one thing we could have a picture of our market with me and you standing in front of it," says Matt.

"What else?" asks Grace.

Matt answers, "Ah, maybe people could look up stuff and order it through the app or the website. Yeah, those college kids would think that's great; they're into using smartphones all the time. That will increase our business. They'll buy food from our store rather than the pizza and burgers they always eat or get delivered from Sam's Sub Shop. And those people who live in the senior citizens' apartments would use it, too. I heard they're teaching them how to use computers, smartphones, and tablets. And maybe we can even set up a delivery service."

"Hold on," says Grace. "Those college students get pizza and subs from Sam's at all hours of the night, long after we're closed. And I think the senior citizens enjoy getting out. They have a van that brings some of them here each day to shop, and they really don't buy much anyway. And how will they pay for what they order through the app or the website? I'm all for keeping up with things, but I'm not sure this makes sense for our little supermarket, Matt. What would we be trying to accomplish?"

"I just explained it to you, Grace. It's the way all businesses are going. We either keep up with things or we'll be out of business," replies Matt.

"Does this have anything to do with that Chamber of Commerce meeting you went to in Big Falls last week, where you said they had some consultant talking about e-business or something?" asks Grace.

"Yeah, maybe," Matt says. "I think I'll give him a call and tell him to stop by and tell him what I want."

"How much is all this going to cost us, Matt?" asks Grace. "I think we need to think about this some more. You know we are probably going to have to pave the parking lot this summer."

Matt answers, "Don't worry. It'll all work out. Trust me. Our business will increase so much, it'll pay for itself in no time. Besides, it can't cost that much; this consultant probably does these kinds of projects all the time."

CASE QUESTIONS

1. What are the needs that have been identified?
2. What is the project objective?
3. What are some things Matt and Grace should do before they talk with the consultant?
4. What should the consultant tell Matt and Grace?

GROUP ACTIVITY

Select two course participants to use this case script to role-play Matt and Grace in front of the class. Then divide the course participants into groups of three or four to discuss the case questions. Each group must choose a spokesperson to present its responses to the entire class.

OPTIONAL ACTIVITY

Have each course participant contact a business that went "online" and ask the business what led it to that decision and if the project met its initial expectations.

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