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DEFINING PROJECT MANAGEMENT TODAY
Guiding People, Resources, and Processes to Successful Completion

Starting Point

Go to www.wiley.com/college/portny to assess your knowledge of the basics of project management.
Determine where you need to concentrate your effort.

What You’ll Learn in This Chapter

▲ The range of projects in today’s workplace
▲ Three essential elements of any project
▲ The contrasts between project management and general management
▲ The responsibilities of project managers
▲ Roles of key people associated with projects
▲ The challenges of project management
▲ Four types of projects based on product and process change
▲ On-site and off-site project management

After Studying This Chapter, You’ll Be Able To

▲ Understand the foundational knowledge of project roles, responsibilities, types, and terms in order to manage projects
▲ Differentiate among the roles of project managers, functional managers, functional employees, upper management, and project champions
▲ Propose solutions to common project management challenges
▲ Compare projects based on product and process change they involve
DEFINING PROJECT MANAGEMENT TODAY

INTRODUCTION

Dynamic companies organize their employees and resources around projects, which are managed by project managers. Project managers’ careful balancing of outcomes, schedules, and resources often determines whether a project is a success. Although project management is considerably different from general management, typical roles and responsibilities exist for the people involved in projects. The challenges of project management—most notably the high expectations from upper management combined with little or no hierarchical authority—are intense, but savvy, thoughtful project managers can impact the entire direction of an organization. Projects fall into four general categories, regardless of industry. Thanks to technology, project managers can manage people and resources anywhere in the world.

1.1 Understanding Project Management

Successful organizations create projects that produce desired results in established timeframes with assigned resources. As a result, businesses are increasingly driven to find individuals who can excel in this project-oriented environment.

People wanting to move ahead in their careers appear to be getting the message. Growing numbers of people at all levels in organizations are looking for ways to get a better handle on their projects. A Fortune magazine article recently identified “project manager” as the number-one career option. What the article didn’t say is that the majority of people who are becoming project managers aren’t doing so by choice. Instead, project management is often an unexpected but required progression in their chosen career paths.

Successful project managers need targeted skills and techniques so they can steer projects to successful completion.

1.1.1 Defining Projects

A project is a temporary endeavor undertaken to create a unique product or service. It is specific, timely, usually multidisciplinary, and always conflict ridden. Projects also vary greatly.

▲ Projects may be large or small. Installing a new subway system, which may cost more than $1 billion and take 10 to 15 years to complete, is a project, and so is preparing a report of monthly sales figures, which may take one day to complete.

▲ Projects may involve many persons or just one. Training all 10,000 members of an organization’s staff in a new affirmative-action policy is a project, as is rearranging the furniture and equipment in an office.

▲ Projects may be planned formally or informally. Many projects are included in an organization’s annual plan and require formal approval of
all work to be performed, all personnel assignments, and all resource expenditures. Others projects are assigned to workers in the course of a conversation, with no mention of budget or additional staff.

▲ **Projects may be tracked formally or informally.** For some projects, all hours spent are faithfully recorded on time sheets and all dollars expended are separately identified in the organization’s financial system. For others, no record of hours spent is ever kept and expenditures are just considered as part of the organization’s operating budget.

▲ **Projects may be performed for external or internal clients and customers.** Repairing a piece of equipment that your company sold to a customer is a project. Writing an article for your organization’s internal newsletter is also a project.

▲ **Projects may be defined by a legal contract or an informal agreement.** A signed contract between a builder and a customer to construct a house defines a project; a promise made to install a new software package on a colleague’s computer similarly defines a project.

In the workplace, the following two terms are often confused with a project:

1. A **process** is a series of steps by which a particular job function is routinely performed. A company’s annual budgeting process or the procedure a manager goes through to procure new office equipment are examples of processes. A process is not a one-time activity that achieves a specific result; instead, a process defines how a particular job is to be done every time it’s done. Processes, such as the activities performed to buy needed materials, are often included as parts of projects.

2. A **program** is work performed towards achieving a long-range goal. A health-awareness program and an employee-morale program are examples. A program never completely achieves its goal (for example, the public will never be totally aware of all health issues). Instead, one or more projects may be performed to accomplish specific results that are related to the program’s goal (such as conducting a workshop on how to minimize the risk of heart disease). In this case, a program is comprised of a series of projects.

### 1.1.2 Defining Project Management

**Project management** is the process of guiding a project from its beginning through its performance to its closure. Project management includes the following three basic operations, or activities:

1. **Planning** includes specifying results to be achieved, determining schedules, and estimating resources required. Chapter 4 deals with project planning in detail.
2. Organizing includes defining people’s roles and responsibilities. See Sections 1.4 and 4.2.

3. Controlling includes reconfirming people’s expected performance, monitoring actions and results, addressing problems encountered, and sharing information with interested people. The chapters in Part IV deal with these responsibilities.

1.1.3 Why Projects and Project Management?

The reason that more organizations and businesses are organizing their operations around projects and assigning project managers to specific goals is simple. Projects attach the responsibility and authority for achieving an organizational goal on an individual or small group when the job does not clearly fall within the definition of routine work.

**FOR EXAMPLE**

The Power of Projects

For Daimler-Chrysler, team-based product development programs that integrate product design, engineering, manufacturing, and marketing have not only improved its products, they’ve also allowed significant reductions in time-to-market. By organizing employees in project-based groups, Daimler-Chrysler cut almost 18 months from its new product development timeline and produced several new car lines (notably the LH sedans, Neon, and Viper models) that have sold well and received high-quality ratings. In addition to the value of good design, the economic value of the time saved is immense—faster design saves labor and overhead costs, as well as encourages earlier sales and return on the investment (in Daimler-Chrysler’s case amounting to hundreds of millions of dollars).

2. **Organizing** includes defining people’s roles and responsibilities. See Sections 1.4 and 4.2.

3. **Controlling** includes reconfirming people’s expected performance, monitoring actions and results, addressing problems encountered, and sharing information with interested people. The chapters in Part IV deal with these responsibilities.

**SELF-CHECK**

1. What are the three main activities of project management?

2. Which of the following is a project?
   (a) conducting a 5-phase lab test based on FDA guidelines
   (b) sending out late-payment form letters by the 15th of each month
   (c) creating a new log for incoming packages
   (d) encouraging employees to invest in the company’s 401(k) program
1.2 Defining Project Success

No matter the specific characteristics of a project, the same three core elements are essential.

1. **Outcome**: a project has at least one goal (and often several goals) of creating a specific product (a new car) or result (10 percent reduction in the number of negative customer service surveys).

2. **Schedule**: project work begins and ends on specific, established dates.

3. **Resources**: projects require amounts of people, funds, equipment, facilities, and information.

Figure 1-1 illustrates that each of the three core elements affects the other two. Expanding desired outcomes may require more time (a later end date, for example) or more resources (additional staff). Moving up the end date may necessitate paring down the results to be accomplished or increasing project expenditures (exceeding the established budgets) by paying overtime to project staff.

The performance of the project—and the effectiveness of the project manager—is measured by the degree to which these goals are achieved. Specifically,

- **Outcome**: does the project meet the agreed-upon specifications to the satisfaction of the customer?
- **Schedule**: is the project on time or early?
- **Resources**: is the project within or under budget?

![Figure 1-1](image-url)

The three essential elements of any project.
Acting in response to the three essentials, a project team works to achieve the desired results. The type of information a project manager needs to plan and manage a project is the same, although the ease and the time required to develop it may differ. The more thoroughly a project manager plans and manages a project, the more likely the project will be deemed a success.

When project information is determined accurately and completely and shared effectively, project managers dramatically increase their chances of project success. When pieces of this information are vague, missing, or not shared effectively, the chances of success are reduced.

1.2.1 Meeting Specifications
A client sets the expectations of a project's outcomes; this makes each project unique. The success of outcome-related goals—meeting specifications—is set primarily by the customer or client. For the purposes of this book, the client can be someone or some organization outside the company performing the project or someone or some organization within the company performing the project.

Some management theorists insist that quality is a separate and distinct goal of the project along with time, cost, and specifications. However, this book considers quality an inherent part of the project specifications, not separable from them.

1.2.2 Factoring in Uncertainty
If this were a predictable world, no project would ever go awry. Managing projects would be relatively simple, requiring only careful planning. However, this is an uncertain world, filled with chance events and uncertainty. The best-made plans often go awry. Uncertainty ensures that projects travel a rough road.

**FOR EXAMPLE**

**Balancing Outcomes, Schedules, and Resources**
When a construction project—such as building a new suburban home by May 1—falls behind schedule due to bad weather, the contractor, acting as project manager, can get the project back on schedule by adding resources to the project. In the case of building a home, additional resources mean more labor and/or additional equipment. If the budget cannot be raised to cover the additional resources, the contractor may have to negotiate with the client for a later delivery date. If neither cost nor schedule can be negotiated, the contractor may have to swallow the added costs (or pay a penalty for late delivery) and accept lower profits.
1.3 COMPARING PROJECT MANAGEMENT AND GENERAL MANAGEMENT

All projects are carried out under conditions of uncertainty. Well-tested software routines may not perform properly when integrated with other well-tested routines. A chemical compound may destroy cancer cells in a test tube—and even in the bodies of test animals—but may kill the host as well as the cancer. As a result, project managers spend a great deal of time adapting to unpredicted change.

1.3 Comparing Project Management and General Management

Project management differs from general management largely because projects differ from “nonprojects.” For example:

▲ Each project is unique. Project managers must be creative and flexible, and have the ability to adjust rapidly to changes. When managing nonprojects, the general manager tries to “manage by exception.” In other words, for nonprojects, almost everything is routine and is handled routinely by subordinates. The manager deals only with the exceptions. For the project manager, almost everything is an exception.

▲ Projects have a higher potential for conflict than nonprojects. Project managers must have special skills in conflict resolution.

▲ Project success is absolutely dependent on detailed planning. The project plan is the immediate source of the project's budget, schedule,

SELF-CHECK

1. Your manufacturing team is responsible for producing 500 office chairs every week. Which of the three core elements of a project are these chairs?

2. Of the three core elements of a project, resources refers to which of the following?
   (a) funds
   (b) facilities
   (c) people
   (d) all of the above

3. In most cases, the client or customer ultimately determines whether a project meets specifications and can be considered a success. True or false?
control, and evaluation. Detailed planning is critically important. Project planning is discussed in Section 4.1.

▲ Project budgets and schedules are constructed differently from standard, nonproject budgets and schedules. Budgets for nonprojects are primarily modifications of budgets for the same activity in the previous quarter or year. By contrast, project budgets are newly created for each project and often cover several periods in the future. A project budget is derived directly from the project plan that calls for specific activities. These activities require resources, and such resources are the heart of the project budget. Similarly, the project schedule is also derived from the project plan.

▲ Projects are accomplished in unique ways. In a nonproject manufacturing line, for example, the sequence in which various things are done is set when the production line is designed. The sequence of activities usually is not altered when new models are produced. On the other hand, each project has a schedule of its own. Previous projects with deliverables similar to the one at hand may provide a rough template for the current project, but its schedule is set by the project’s unique plan and by the date on which the project is due for delivery to the client.

▲ Projects are often multidisciplinary. The routine work of most organizations takes place within a well-defined structure of divisions,

FOR EXAMPLE

Win-Win Negotiating and Ink-Jet Printers

Win-win negotiating is a valuable skill for any manager, but for the project manager it is almost essential to job success. Win-win negotiation involves taking a creative, collaborative approach to solving problems. For example, in a product development project for a new ink-jet printer, the design engineer working on the project suggests adding more memory to the printer so it can print faster. The project manager initially opposes this suggestion, feeling that the added memory will make the printer too costly. After comparing the proposed product with the competition and discussing their concerns, the design engineer and project manager agree that they need to search for another alternative (sometimes referred to as the “third alternative”) that will increase the printer’s speed without increasing its costs. A couple of days later, the design engineer identifies a new ink that can simultaneously increase the printer’s speed and actually lower its total and operating costs.
departments, sections, and similar subdivisions. The typical project cannot thrive under such restrictions. Most projects need technical knowledge, information, and special skills from various departments to be successful. Section 4.6 discusses the multidisciplinary nature of projects.

▲ Projects often don’t fit into traditional managerial hierarchy. A reasonably well-defined managerial hierarchy still exists in general management; subordinates report to superiors and the lines of authority are clear. In project management, this is rarely the case. The project manager may be relatively low in the hierarchical chain of command and still have a high level of responsibility for completing a project successfully. Responsibility without the authority of rank or position is so common in project management that it is the rule, not the exception.

1. Projects typically combine professionals from similar disciplines while nonprojects require individuals from various disciplines and departments to work together. True or false?

2. Where do project budgets and schedules typically come from?

3. Nonproject work is largely about routine processes and responses, while project work can be described by which of the following?
   (a) it is uncontrollable and random
   (b) it requires unique solutions to exceptional situations
   (c) it is based on previous, successful examples
   (d) it requires a highly analytical manager

1.4 Defining Project Roles

Various individuals and groups are often involved in a single project. The following people typically play critical roles in a project’s success:

▲ Project manager: the person ultimately responsible for the successful completion of the project.

▲ Functional managers: the team members’ direct-line supervisors.
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▲ Functional employees or project team members: people responsible for successfully performing individual project activities.
▲ Upper management: people in charge of the organization's major business units.

1.4.1 Considering the Project Manager's Role

Project managers are responsible for all aspects of the project. This doesn't mean they have to do everything themselves, but it does mean that project managers must see that everything gets done satisfactorily.

Project managers are specifically responsible for the following:

▲ Describing objectives, schedule, and resource budgets.
▲ Ensuring a clear, feasible project plan for how everyone will reach performance targets.
▲ Creating and sustaining a focused and committed team.
▲ Selecting or creating a team's operating practices and procedures.
▲ Managing the accomplishment of objectives, within time and budget targets.
▲ Monitoring performance against plans and dealing with any problems that arise.
▲ Resolving priority, work approach, or interpersonal conflicts.
▲ Controlling project changes.
▲ Reporting on project activities.
▲ Keeping clients informed and committed.
▲ Contributing to team members' performance appraisals.

Some companies use the terms project director or project leader, rather than project manager. Check with the expectations of the specific organization, but usually project manager and project director describe the same position. Project leaders, however, often do not have traditional management responsibilities (budgeting, employee evaluations, and so on) but are responsible for stimulating a shared vision and creating positive interpersonal relationships. But again, check with the specific organization for its expectation of project leaders—this may be its term for project manager.

The project manager's job is challenging. He or she must coordinate technically specialized professionals—who often have limited experience working together—to help them achieve a common goal. The project manager's own work experience is often technical in nature, yet his or her success requires a keen ability to identify and resolve sensitive organizational and interpersonal issues. Attitude and approach are critical to having the greatest chances for success.
1.4.2 Considering the Functional Manager’s Role

Functional managers are responsible for orchestrating their staffs’ assignments among different projects, as well as providing the resources to allow their staffs to perform their assignments in accordance with the highest standards of technical excellence. Specifically, functional managers are responsible for the following:

▲ Developing or approving plans that specify the type, timing, and amount of resources needed to do tasks in their area of specialty.
▲ Ensuring team members are available to perform their assigned tasks when needed and for the amount of time promised.
▲ Providing technical expertise and guidance to help team members solve problems related to their project assignments.
▲ Providing the equipment and facilities for a person to do his or her work.
▲ Helping people maintain their technical skills and knowledge.
▲ Ensuring consistent methodological approaches on all projects throughout the organization dealing with a particular area.
▲ Completing team members’ performance appraisals.
▲ Recognizing performance with salary increases, promotions, and job assignments.
▲ Approving team members’ requests for annual leave, administrative leave, training, and other activities that will take time away from the job.

1.4.3 Considering the Functional Employee’s Role

Functional employees—also known as project team members—must satisfy the requests of both their functional managers and their project manager. Team member responsibilities are related to project assignments and can include the following:

▲ Ensuring specific tasks are performed in accordance with the highest standards of technical excellence.
▲ Performing assignments on time and within budget.
▲ Maintaining special skills and knowledge as needed to complete work.

In addition, team members are responsible for working with and supporting other team members’ project efforts. Such help may entail the following:

▲ Considering the effect an action might have on other team members’ tasks.
▲ Identifying situations and problems that might affect team members’ tasks.
▲ Keeping team members informed of progress, accomplishments, and any problems.
1.4.4 Considering the Role of Executives and Upper Management

Upper management creates the organizational environment; oversees the development and use of operating policies, procedures, and practices; and funds and encourages the development of required information systems.

More specifically, executives are responsible for the following:

▲ Setting policies and procedures for addressing resource priorities and conflicts.
▲ Creating and maintaining labor and financial information systems.
▲ Providing facilities and equipment to support the performance of project work.
▲ Defining the limits of managers' decision-making authority.

Before a project begins its life cycle, the parent organization typically must select or approve it for funding. Committees of upper managers usually go through a selection process to ensure that several conditions are considered before committing to undertake any project. These conditions vary widely from firm to firm, but several conditions are common, such as the following:

▲ Is the project potentially profitable?
▲ Does it have a chance of meeting our return-on-investment target?
▲ Does the company have, or can it easily acquire, the knowledge and skills to carry out the project successfully?
1.4.4 CONSIDERING THE ROLE OF EXECUTIVES AND UPPER MANAGEMENT

▲ Does the project involve building competencies that are considered consistent with our company’s strategic plan?

Although the selection process is usually complete before a project manager is appointed to a project, the project manager needs to know exactly why the organization selected the specific project because this sheds considerable light on what the project (and hence the project manager) is expected to accomplish, from senior management’s point of view.

The project may have been selected because it appeared to be profitable, or was a way of entering a new area of business, or a way of building a reputation of competency with a new client or in a new market. The knowledge of the reason for the project’s selection can be very helpful to the project manager by indicating senior management’s goals for the project, which will point to the desirability of some trade-offs and the undesirability of others.

SELF-CHECK

1. Project managers are typically responsible for which of the following?
   (a) determining whether a project is profitable
   (b) ensuring team members are available to work on the project
   (c) defending the rationale for the project
   (d) sustaining the focus and vision of the project team

2. Maintaining project participants’ technical skills is most commonly the responsibility of which of the following?
   (a) functional employees and functional managers
   (b) functional managers and project managers
   (c) functional employees and upper management
   (d) project managers and functional employees

3. Upper management can impact projects by doing which of the following?
   (a) hiring only the best functional employees
   (b) evaluating employees and projects managers rigorously
   (c) funding the purchase of a critical piece of equipment
   (d) monitoring the schedule and budget of the project
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1.5 The Project Manager as a Planning Agent

The rules for performance in traditional organizations have historically been quite simple: a boss makes assignments, employees carry them out. Questioning an assignment was a sign of insubordination or incompetence.

The rules for most successful companies and organizations have changed. Today, the following is more likely:

▲ Your boss generates ideas; you must assess what it takes to implement them.
▲ Your boss tells you what he or she wants to achieve and the constraints for doing it. You must check to be sure the project meets the real need and then translate general expectations into specific results.
▲ You must determine the work to be done, schedules that can be met, and the resources required.
▲ You stay on top of the work performed and identify issues and concerns as they arise.

In many ways, the process doesn't make sense any other way. If a boss does all the detailed project planning, who creates visions and strategies? And a boss's assertion that something is possible doesn't automatically mean that it is. Knowledgeable, technical experts must get involved in developing the plans. The project manager has an opportunity to understand the expectations and proposed approaches and to raise any questions.

The hard part, though, is that most bosses, when assigning a project, don't remind project managers that they need to clarify the assignment, assess its feasibility, and so on. In fact, sometimes project managers are specifically directed not to spend time on further planning and analysis, but to start work at once in order to have any chance of meeting the aggressive time frames set.

Successful project managers must take the initiative for planning and controlling projects, whether or not they're asked to do this. Bosses want project managers to successfully complete the assigned project (even though it may, at times, feel like this isn't the case to harried project managers). Approaching a project assignment as a planning agent—giving the situation careful thought, questioning all assumptions, and develop strategies to meets goals—gives the project manager the greatest chance to meet expectations.

1.6 Identifying Project Champions

A project champion is a person in a high position in the organization who strongly supports a project. Project champions are not necessarily part of a project team (see Section 1.4), although sometimes they are.
1.6 IDENTIFYING PROJECT CHAMPIONS

SELF-CHECK

1. Careful assessment and planning are critical to successful project management. Unfortunately, which of the following situations often occurs?
   (a) Upper management usually does the planning and then hands off plans to project managers.
   (b) Upper management rarely asks project managers to assess and plan prior to beginning a project.
   (c) Upper management usually demands extensive plans from project managers.
   (d) None of the above.

2. For project managers to function as planning agents, project managers must do which of the following?
   (a) Appropriately question all project assumptions
   (b) Be must empowered by their bosses to analyze the project
   (c) Determine the work to be done and the resources required
   (d) All of the above

A project champion does the following:

▲ Advocates for a project in disputes, planning meetings, and review sessions.
▲ Takes necessary actions to help ensure a project is successfully completed.
▲ Has sufficient power and authority to help resolve conflicts over resources, schedules, and technical issues.
▲ Is willing to have his or her name cited as a strong supporter of the project.

Sometimes the best champion is one whose support is never called into service. Just knowing that this person supports a project helps others appreciate its importance and encourages others to work diligently to ensure its success.

If a project doesn’t have a natural champion (for example, the executive who originally suggested the idea for the project), savvy project managers work hard to recruit one. Find people who can reap benefits from the project and who have sufficient power and influence to encourage serious, ongoing organizational commitment to the project. Explain to this person why it’s in his or her best interest for the project to succeed and how specifically his or her help is necessary.
1.7 Meeting the Demands of Project Management

Project management can be richly rewarding work and is often a critical step in an employee’s progression from employee to higher levels of supervision and management. However, it is not easy work. Some of the most significant challenges of project management include the following:

▲ **High responsibility, little authority.** Unlike their general management counterparts, project managers have responsibility for accomplishing a project, but generally little or no legitimate authority to command the required resources from the existing functional departments. The project
manager must be skilled at negotiation, creative problem-solving, and compromise to obtain these resources.

▲ Project overload. Because projects are, by definition, temporary, many project managers find themselves assigned to multiple projects at any one given time. Many project managers are asked to accept a new project in addition to—not in lieu of—existing assignments. Upper management often assumes that project managers will handle the difficulties. Also, when conflicts arise over a person’s need to spend time on his or her different assignments, guidelines or procedures to resolve them might not exist or might be inadequate.

▲ Team members often have never worked together before. Many project teams are composed of people who haven’t worked together before—in fact, some may not even know each other. These unfamiliar relationships may slow the project down because team members might have different operating and communicating styles, might use different procedures for performing the same type of activity, and might not have had the time to develop a sense of mutual respect and trust for each other. The project manager must do everything in his or her capability to quickly form flexible, open, and trust-based working relationships between team members (see Section 10.2).

▲ No direct authority. For most projects, the project manager and team members have no direct authority over each other. Therefore, common rewards such as salary increases, superior performance appraisals, and job promotions are not available to encourage top performance. And a project manager can’t settle conflicts over time commitments or technical direction with one, unilateral decision. For the project manager, negotiation, discussion facilitation, and listening skills are essential.

▲ Client demands. In addition to being responsible for the success of the project to his or her superiors, a project manager is also responsible to the client. Clients are motivated to stay in close touch with a project they have commissioned. Because clients support the project, they feel they have a right to intercede with suggestions (requests, alterations, demands). Cost, schedule, and performance changes are the most common outcomes of client intercession, and the costs of these changes often exceed the client’s expectations.

▲ High communications demands. A major part of any project manager’s job is to keep senior management up to date on the state of the project. In particular, the project manager needs to keep management informed of any problems affecting the project—or any problem likely to affect the project in the future. A golden rule for project managers is, “Never let the boss be surprised!” Violating this rule can cost the project manager credibility, trust, and possibly his or her job. Project managers must
inform senior management about problems in order to assist in its solution. Doing this in a timely, honest, and proactive fashion builds trust between the project manager and senior managers—and between the project manager and the project team.

**FOR EXAMPLE**

**Persuasion: An Essential Project Manager Skill**

According to author and consultant Jay Conger, successful project managers must be skillful at persuading others if they want to meet the demands of project management in today's workplace. In his article for the *Harvard Business Review*, Conger breaks down the skill of persuading others into four essential elements: (1) effective persuaders must be credible to those they are trying to persuade; (2) they must find goals held in common with those being persuaded; (3) they must use “vivid” language and compelling evidence; (4) they must connect with the emotions of those they are trying to persuade.

**SELF-CHECK**

1. The “high responsibility, little authority” challenge of project management means which of the following?
   
   (a) Project managers are highly responsible for project expectations but have little authority to make assignments.
   
   (b) Project managers are highly responsible for results but have little authority to enforce decisions.
   
   (c) Project managers are highly responsible for team cohesiveness but have little authority to reward team members.
   
   (d) none of the above

2. In the rapid-prototyping division of a circuit board manufacturer, Bruno typically manages five small projects with intermittent deadlines. When his boss assigns him an additional large project with a deadline in the next month, Bruno is likely to experience which of the following?
   
   (a) shifting responsibility
   
   (b) scope creep
   
   (c) project manifestation
   
   (d) project overload
1.8 Classifying Projects

Most organizations and companies fund a mix of projects, spread appropriately across various areas of interest, with the hope of making diverse, significant contributions to the organization's goals (and financial interests).

One way to describe many of the projects (particularly product/service development projects) is in terms of the extent of product and process changes. Wheelwright and Clark (1992) suggest a model called the aggregate project plan, or portfolio project plan, which summarizes the various types of projects an organization engages in. Four categories of projects exist, based on the extent that a project requires product change and process change:

1. **Derivative projects.** These are projects with objectives or deliverables that are only incrementally different in both product and process from existing offerings. They are often meant to replace current offerings or add an extension to current offerings (e.g., lower priced version, upscale version).

2. **Platform projects.** The planned outputs of these projects represent major departures from existing offerings in terms of either the product/service itself or the process used to make and deliver it, or both. As such, they become “platforms” for the next generation of organizational offerings, such as a new model of automobile or a new type of insurance plan. If successful, platform projects eventually form the basis for future derivative projects.

3. **Breakthrough projects.** Breakthrough projects typically involve a newer technology than platform projects. It may be a “disruptive” technology that is known to the industry or something proprietary that the organization has been developing over time. Examples include the use of fiber-optic

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**FOR EXAMPLE**

**P&G Makes Way for the Web**

With Tide®, Ivory®, Crest®, and Cover Girl®, Procter & Gamble (www.pg.com) has some of the best-known and best-selling brands in the world. Rather than relying on more than 100 years of popular products, P&G relies on a portfolio of projects to expand existing brands and products and research new lines. For example, P&G's roster of recent projects includes derivative projects (new berry-inspired shades of lipstick), platform projects (Olay® cosmetic products for every part of the body, not just the face), breakthrough projects (TideBuzz, which uses detergent and electrostatic pulses to fight stains), and R&D projects (disposable diapers with rash-preventing ingredients in the absorbent lining).
cables for data transmission, cash-balance pension plans, and hybrid gasoline-electric automobiles.

4. **R&D projects.** These projects are “blue-sky,” visionary endeavors, oriented toward using newly developed technologies or existing technologies in a new manner. They may also be for acquiring new knowledge or developing new technologies themselves.

### SELF-CHECK

1. A project that uses cutting-edge technology is best defined as which of the following?
   - (a) platform project
   - (b) blue-sky project
   - (c) R&D project
   - (d) breakthrough project

2. A portfolio approach to projects ranks an organization’s projects based on profitability. True or false?

3. A project that builds on established projects with only incremental differences and updates is best described as what type of project?

### 1.9 Managing Projects Off-site and On-site

More and more often, project teams are geographically dispersed. Many projects are international, and team members may be on different continents. For example, most aircraft engines are still designed in the United States while most engine construction occurs in Asia.

Geographically dispersed projects are referred to as **virtual projects**—possibly because so much of the communication is conducted by e-mail, through Web sites, by telephone or video conferencing, and by other high-technology methods.

Although long-distance project management is commonplace and no longer prohibitively expensive, it is beset with special problems. Written and voice-only communication (and even in video conferencing when the camera is not correctly aimed) does not allow communicators to see one another. In such cases, facial expression, vocal tone, and body language—all important tools in delivering a message—are not communicated between the parties. Two-way, real-time communication is the most effective way to transmit information or instructions. For virtual projects to succeed, communication between project manager and project team must be frequent, open, and two-way.
FOR EXAMPLE

An Innovative Approach

A sales manager for a national chain of automobile parts was assigned the task of training all sales representatives in his company in a new order entry process. The company had several hundred sales representatives located throughout the country, and he was to have the training completed within one month. In the past, the manager had delivered company training in instructor-led, on-site programs. After some preliminary consideration, though, he was convinced that it would take at least three months to design and present to all the sales representatives around the country using an instructor-led program. He was ready to tell his boss that the task was impossible when a colleague suggested presenting the training through his company's intranet. Using this new strategy, he completed the project ahead of schedule and at a considerable savings to the company.

1. Locating a project manager off-site usually
   (a) boosts productivity and collaboration.
   (b) only works for high-tech projects.
   (c) requires the project manager to take extra care communicating with team members.
   (d) all of the above

2. One of the greatest challenges of managing a virtual project is which of the following?
   (a) the lack of real-time, two-way communication
   (b) the fact that team members cannot be closely monitored
   (c) the financial demands of new technology to make such projects possible
   (d) the accessibility of managers
SUMMARY

In today’s project-based job market, project managers provide the critical services of planning, organizing, and controlling the progress and success of medium- to large-size initiatives for organizations. General management with its hierarchy and rigid-reporting structure bares little resemblance to project management where project participants have distinct roles and responsibilities and project managers must develop a host of specialized skills. Many organizations engage in a range of projects, while some project managers find themselves, with the aid of technology, orchestrating complex projects with resources and team members located all over the world.

KEY TERMS

Aggregate project plan A summary of the various types of projects an organization engages in. Also known as portfolio project plan.

Breakthrough projects Projects involving newer technology that may disrupt the status quo in an industry or marketplace.

Client The entity for whom the project is being done; can be someone or some organization outside or within the company performing the project.

Controlling Project management responsibility that includes reconfirming people’s expected performance, monitoring actions and results, addressing problems encountered, and sharing information with interested persons.

Derivative projects Projects with objectives or deliverables that are only incrementally different in both product and process from existing offerings.

Functional employees Individuals within projects who must satisfy the requests of both their functional managers and their project manager; also known as project team members.

Functional managers Individuals in an organization or company who are responsible for orchestrating their staffs’ assignments among different projects, as well as providing the resources to allow their staffs to perform their assignments in accordance with the highest standards of technical excellence.
Organizing

Project management responsibility that includes defining people's roles and responsibilities.

Outcome

A project-specific goal related to creating a specific product, service, or result.

Planning

Project management responsibility that includes specifying results to be achieved, determining schedules, and estimating resources required.

Platform projects

Projects that represent major departures from existing offerings in terms of either the product or service itself or the process used to make and deliver it.

Portfolio project plan

See aggregate project plan.

Process

A series of steps by which a particular job function is routinely performed.

Program

Work (often multiple projects) performed towards achieving a long-range goal.

Project

A temporary endeavor undertaken to create a unique product or service.

Project champion

A person in a high position in the organization who strongly supports a project.

Project management

The process of guiding a project from its beginning through its performance to its closure. Project management requires planning, organizing, and controlling.

Project managers

Individuals responsible for seeing that all aspects of projects are completed satisfactorily.

Project team members

See functional employees.

R&D projects

Projects that are visionary and use newly developed technologies or existing technologies in a new manner.

Resources

The amount of people, funds, equipment, facilities, and information need for a project.

Schedule

Plan that lists specific, established dates for work to begin and end.

Upper management

The people in charge of the organization's major business units.

Virtual projects

Geographically dispersed projects that can be managed through e-mail, Web sites, and other high-technology methods.
DEFINING PROJECT MANAGEMENT TODAY

ASSESS YOUR UNDERSTANDING

Go to www.wiley.com/college/portny to assess your knowledge of the basics of projects and project management. Measure your learning by comparing pre-test and post-test results.

Summary Questions

1. What is an example of a project, process, and program that you might find in the new product development department at a software development firm?

2. A project
   (a) is a temporary arrangement undertaken to achieve a specific goal.
   (b) is limited by three elements: outcome, resources, and schedule.
   (c) can include people from various departments and specialties.
   (d) is all of the above.

3. Poor project managers end up spending much of their time negotiating with other departments and individuals to ensure their projects have adequate resources. True or false?

4. What are the four major roles associated with any project?

5. What are the two key differences between derivative, platform, breakthrough, and R&D projects?

6. How do the roles and responsibilities of a project manager directly contribute to the challenges of project management?

Applying This Chapter

1. In your job as an assistant manager at a fast food restaurant, you are frequently responsible for training new hourly workers to operate all the facility’s food preparation equipment. How could you expand your experience and expertise in training new activities into a process, a project, and perhaps even a program?

2. As project manager for an electronics manufacture, you are supposed to design a new, low-cost MP3 player in three months’ time working with a team of three technicians. Because outcome, schedule, and resources are all interrelated, what are some options you might consider if you suddenly lose two of your technicians?

3. The major road paving project is three months behind schedule and nearly $1 million over budget. Given traditional roles and responsibilities,
how might a project manager, a functional manager, a functional employee, and a member of upper management appropriately respond to the situation?

4. Marissa’s boss returns from an upper management off-site meeting and assigns the following public relations project to her: Marissa will project manage a team of writers, designers, and computer programmers in developing an anti-smoking Web site targeting teenagers. The Web site should use state-of-the-art online technology, be highly interactive, and be able to go live in six weeks. This is Marissa’s first project management assignment, but past Web site projects that she’s been part of have taken between 12 and 18 weeks to go live and didn’t use extensive technology. How can Marissa approach this challenging project as a planning agent?

5. For the last year, you have project managed an initiative to gather and test crop samples from a fertilizer testing site located two miles south of your office. Your next project will resemble more of a virtual project, with you managing the gathering and testing of crop samples by regional teams located at four sites spread across the United States. How might your project management style need to adjust to meet this change?

6. Few products that manufacturers introduce as innovations truly count as such. Review the New Product section of a manufacturer’s Web site or promotional materials. (If you don’t have a manufacturer you want to review, visit the New Products page for Glade Air Freshening products at www.glade.com/new.aspx.) Considering the definitions of the four types of projects outlined in Section 1.8, which products are derivative, platform, breakthrough, or R&D projects?
YOU TRY IT

Process, Project, or Program?
Review your current resume’—if you don’t yet have a resume’, begin drafting a list of responsibilities and achievements at each of your jobs, beginning with the most recent and working back. Carefully consider each position you list on your resume’ and determine whether each responsibility or task involved work on a process, project, or program (refer to Section 1.1 for definitions). You don’t need to add your identifications to your resume’, but prepare yourself for future job interviews by becoming able to quickly highlight an example of a difficult or important process you mastered, a project you participated on, a project (or portion of a project) that you lead or managed, and a larger program that you contributed to in some way.

Project Management Trio: Outcome, Schedule, Resources
Try thinking of your next class project in terms of outcome, schedule, and resources. For your project to be successful, you need to have a clear sense of each element. For example, do you know the expected outcome for the assignment? What about the schedule—not only the final due date, but do you know what deadlines you need to hit to consistently work towards the final date? Have you identified all your resources? What people, information sources, equipment, facilities, and funds (if any) do you have access to to complete the project?

Your Champions
List several projects you’ve lead or worked on in the last two years. Your project may come from a variety of places—your job, volunteer organizations, community groups, church, family, or hobbies and interests. These projects could be large and formal (reorganizing your company’s accounts payable department) or small and informal (planning and executing a friend’s surprise birthday party). Review your project list and consider whether each project had a project champion (see Section 1.6). What specifically did each person do to champion your project? Is there anyone you’ve listed who might be worth considering to champion a project for you in the future? In what ways can you continue being in contact with these potential champions?

Your Challenges, Your Solutions
Select a project from your past that you led. Review the list of common project management challenges in Section 1.7. Which of these challenges did you encounter while you lead your project? The solutions that worked for you and your projects in the past are likely to be useful for future projects. What did you do to successfully meet the challenge(s)?
CASE STUDY

Handstar Inc. was created by two college roommates to develop software applications for handheld computing devices. In four years, it has grown to ten employees with annual sales approaching $1.5 million. Handstar’s original product was an expense report application that allowed users to record expenses on their handheld computer and then import these expenses into a spreadsheet that then created an expense report in one of five standard formats.

Based on the success of its first product, Handstar subsequently developed three additional software products: a program for tracking and measuring the performance of investment portfolios, a calendar program, and a program that allowed users to download their e-mail messages from PCs and read them on handheld computers.

The two founders of Handstar have recently become concerned about the competitiveness of the firm’s offerings, particularly since none of them has been updated since their initial launch. Therefore, they asked the directors of product development and marketing to work together to prepare a list of potential projects for updating Handstar’s current offerings as well as to develop ideas for additional offerings. The directors were also asked to estimate the development costs of the various projects, product revenues, and the likelihood that Handstar could retain or obtain a leadership position for the given product. Also, with the continuing popularity and growth of Internet-based businesses, the founders asked the directors to evaluate the extent to which the products made use of the Internet.

The product development and marketing directors identified three projects related to updating Handstar’s existing products. The first project would integrate Handstar’s current calendar program with its e-mail program. Integrating these two applications into a single program would provide a number of benefits to users, such as allowing them to automatically enter the dates of meetings into the calendar based on the content of an e-mail message. The directors estimated that this project would require 1250 hours of software development time. Revenues in the first year of the product’s launch were estimated to be $750,000. However, because the directors expected that a large percentage of the users would likely upgrade to this new product soon after its introduction, they projected that annual sales would decline by 10 percent annually in subsequent years. The directors speculated that Handstar was moderately likely to obtain a leadership position in e-mail/calendar programs if this project was undertaken and felt this program made moderate use of the Internet.

The second project related to updating the expense report program. The directors estimated that this project would require 400 hours of development time. Sales were estimated to be $250,000 in the first year and to increase 5 percent annually in subsequent years. The directors speculated that completing this project would almost certainly maintain Handstar’s leadership position in the expense report category, although it made little use of the Internet.

The last product enhancement project related to enhancing the existing portfolio tracking program. This project would require 750 hours of development time and would generate first-year sales of $500,000. Sales were projected to increase 5 percent annually in subsequent years. The directors felt this project would have a high probability of maintaining Handstar’s leadership position in this category and the product would make moderate use of the Internet.

The directors also identified three opportunities for new products. One project was the development of a spreadsheet program that could share files with spreadsheet programs written for PCs. Developing this product would require 2500 hours of development time. First-year sales were estimated to be $1 million with an annual growth rate of 10 percent. While this product did not make use of the Internet, the directors felt that Handstar had a moderate chance of obtaining a leadership position in this product category.

The second new product opportunity identified was a Web browser. Developing this product would require
1875 development hours. First-year sales were estimated to be $2.5 million with an annual growth rate of 15 percent. Although this application made extensive use of the Internet, the directors felt that there was a very low probability that Handstar could obtain a leadership position in this product category.

The final product opportunity identified was a trip planner program that would work in conjunction with a PC connected to the Web to download travel instructions to the user’s handheld computer. This product would require 6250 hours of development time. First-year sales were projected to be $1.3 million with an annual growth rate of 5 percent. Like the Web browser program, the directors felt that there was a low probability that Handstar could obtain a leadership position in this category, although the program would make extensive use of the Internet.

In evaluating the projects, the founders believed it was reasonable to assume each product had a three-year life. They also felt that a discount rate of 12 percent fairly reflected the company’s cost of capital. An analysis of payroll records indicated that the cost of software developers is $52 per hour including salary and fringe benefits. Currently there are four software developers on staff, and each works 2500 hours per year.

Questions
1. Which projects would you recommend for Handstar?
2. Assume the founders weigh a project’s revenue-generating capabilities as twice as important as both obtaining/retaining a leadership position and making use of the Internet. Knowing this preference, which projects do you recommend Handstar pursue?
3. In your opinion, is hiring an additional software development engineer justified?