

Project Management Framework

T W O

This is a very important chapter. Yes, we could say that about every chapter in this book, as they all will add to your understanding of project management and get you closer to passing the PMP exam. But this chapter is especially important.

This chapter includes an overview of terms and concepts used throughout this book. Understanding what is presented here will make the rest of your studying easier. Look for gaps in your knowledge as you read on.

Definition of a Project PAGE 4*

Because the art and science of project management revolves around projects, knowing the definition of a project—as the term is used on the exam—has helped many test takers get up to four questions right on the exam. Many people call their work a project when it is not.

On the exam, a project is assumed to have the following characteristics:

- It is a temporary endeavor—with a beginning and an end.
- It creates a unique product, service, or result.

Does the exam ask, “What is a project?” No, but it will describe situations, and in your analysis of those situations, you will need to ask questions such as, “Is this a project being described?”

So, what is a project? If your manager walked into your office today and said, “The system is broken. Can you figure out what is wrong with it and fix it?” Would this be a project?

QUICKTEST

- Project management
- Definition of a project
- Project team
- Project management team
- Stakeholder
- Stakeholder management
- Governance
- Project management office (PMO)
 - Supportive
 - Controlling
 - Directive
- Organizational project management (OPM)
- Organizational structure
 - Matrix
 - » Strong
 - » Weak
 - » Balanced
 - Functional
 - Project-oriented
- Project expediter
- Project coordinator
- Enterprise environmental factors
- Organizational process assets
 - Processes, procedures, and policies
 - Historical information
 - Lessons learned
- Assumption log
- Assumptions
- Constraints
- Work performance data, information, and reports
- Operational work
- Program management
- Portfolio management
- Expert judgment
- Meetings

* All page number references are to the PMBOK® Guide, Sixth Edition.

Are you reading on before you have thought through the question? If so, read it again, and think about your answer. This is an important concept, both for the exam and in the real world.

Of the thousands of students RMC has taught, very few came into our classes understanding that you must first take what you are given and organize the work into appropriate projects, phases, and a life cycle. The project planning process will produce schedules and budgets. Can you schedule “fix it” if you do not know what is wrong? You can’t; in fact, there are at least two projects in the previous scenario. The Project Management Processes chapter goes into more detail about dividing work into projects and life cycle phases.

Are you really working on projects? If you work at a help desk and someone contacts you about a problem they are having, you may be able to use a WBS, but do you need a network diagram? Do you need to use earned value management? How about management plans for scope, schedule, and cost? Probably not. Some activities are simply part of the company’s normal operations, rather than a project.

**TRICKS
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In preparing for the exam, make sure your definition of a project is in alignment with the PMBOK® Guide. You should have a large, plan-driven project in mind when you are studying for the exam, and when answering exam questions. Think of a project that is new to an organization (it has not been done before), utilizes resources from many countries, has more than 200 people on the team, lasts longer than one year, and has a budget of over \$10 million. Such an initiative would require you to use many of the tools of project management.

Regardless of whether you currently work on large projects, you will need to answer questions on the exam as if you do. There is a big difference between managing small and large projects. A large project requires using the full breadth of project management processes and tools.

On a small project, you walk over to the person you need to speak to when you have an issue to resolve. On a large project, you may have spent weeks planning communications. When there is an issue, you have to figure out who is involved and where they are located, look up their contact information and their preferred method of communication, and then communicate with them in that way. If you keep this large-project focus in mind as you read this book, you will see that the many different elements being described here as part of project management make sense, are necessary, and add value. And if the concepts make sense to you, you do not have to memorize them—you can use logic to answer questions on the exam.

**TRICKS
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TRADE**

Another thing to keep in mind for the exam is that you should assume project proposals are formally reviewed and approved by management in your organization after a comparison of all proposed projects. Projects are not selected arbitrarily or informally. (See the discussion of business documents as an input to Develop Project Charter in the Integration Management chapter.)

Why Projects Exist

Projects are created to provide business value and to deliver benefits defined in the business case¹ and the benefits management plan.² Projects are designed to bring a positive change to the organization, usually to add or improve products or services, and, in some cases, to satisfy legal or other regulatory requirements.

Operations and Projects PAGE 16

Most work done in organizations can be described as either operational or project work. Operational work is ongoing work to support the business and systems of the organization, whereas project work ends when the project is closed. It is important to understand the difference for the exam. You may see instances where the real problem in the question is that someone is attempting to manage ongoing (operational) work, such as manufacturing, as a project.

Although these are two distinct areas of work, they are closely connected. When a project is finished, the deliverables are transitioned to ongoing business operations so the benefits of the project work can be incorporated into the organization. A successful transition may require employee training or adjustments to operational processes. For example, when an insurance company's internal project to develop a new caseload tracking system is completed, employees will need to learn how to use the system and adjust their processes to incorporate it into their daily work so the benefits can be realized.

And this relationship goes both ways. While a project may develop a product or service to be used in operational work, the need to change or improve operational work may prompt the initiation of a project. For example, the need to develop a new caseload tracking system may have arisen from problems occurring in the organization's business operations. As another example, imagine the caseload tracking system has moved into operations and users have started working with it, but some bugs have been identified. Fixing these bugs would likely be addressed as the operational work of maintaining business systems rather than as a new project. If the organization decides new features or functions must be added to the caseload tracking system after it is in operation, however, this may prompt a new project.

Governance PAGE 16

Organizational governance refers to the overall structure of an organization, and it involves setting the policies and procedures for how work will be performed to meet high-level strategic goals. Also note that there are multiple levels of governance within an organization. Generally, a board of directors is responsible to ensure that work throughout the organization conforms to external (government or regulatory) and internal standards and requirements. Internal requirements include policies and procedures regarding portfolio, program, and project work, which help to ensure that these endeavors are within the strategic plan of the organization and that they contribute to the delivery of specific benefits or value. Every organization is different, and governance is designed to support the specific culture and attributes of the organization.

Project governance includes the framework within which project work is performed across the organization. It may involve the creation or enforcement of processes and policies regarding areas such as risk, resources, communications, and change management. Project governance can be established and administered by a project management office (PMO).³ We will discuss the various types of PMOs later in this chapter.

What Is Portfolio Management? PAGE 15

A portfolio includes programs, individual projects, and other related operational work that are prioritized and implemented to achieve a specific strategic business goal (see fig. 2.1). Combining programs, projects, and operations into one or more portfolios helps optimize the use of resources, enhances the benefits to the organization, and reduces risk. The programs and projects that make up a portfolio may not be related, other than by the fact that they are helping to achieve a common strategic goal. The work of an organization can comprise one or multiple portfolios. A project is included in a portfolio based on potential return on investment, strategic benefits, alignment with corporate strategy, and other factors critical to organizational success.

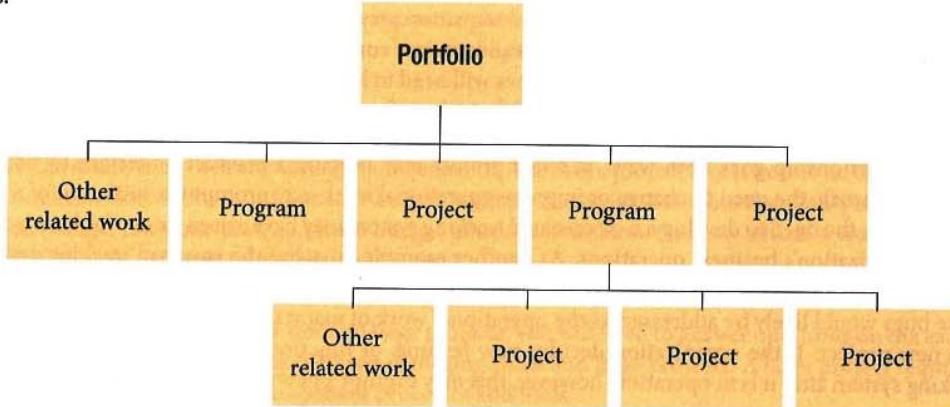


FIGURE 2.1 *Portfolio management*

What Is Program Management? PAGE 14

If you want to learn more about program management, visit RMC's website at rmcls.com for information about courses on this topic.

By grouping related projects into a program, an organization can coordinate the management of those projects (see fig. 2.2). The program approach focuses on the interdependencies between the projects and may help decrease risk, achieve economies of scale, and improve management. In addition to the work required to complete each individual project, the program also includes efforts such as the program manager's coordination and management activities. So, when you discover that your work encompasses more than one project, you can manage all the projects as a program if there is a benefit to doing so. However, this should be done only when the program approach adds value. Projects are combined into programs to provide coordinated control, support, and guidance. The program manager works to ensure projects and programs achieve the benefits for which they were initiated.

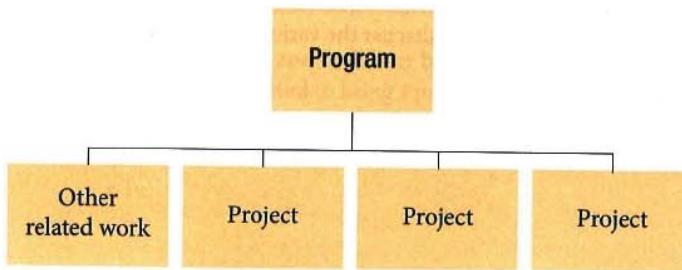


FIGURE 2.2 *Program management*

What Is Project Management? Why Is It Important? PAGE 10

Project management is both a science and an art. The science is the systematic process of managing work efficiently and effectively to deliver planned results. This includes tailoring efforts to meet the needs of the project and using the appropriate processes and tools to accomplish the work. The art of project management relates to how a project manager uses skills such as influencing, organizing, and strategizing, in addition to other interpersonal and team skills.

The *PMBOK® Guide* breaks project management into process groups and knowledge areas. The project management process groups are initiating, planning, executing, monitoring and controlling, and closing. Each of these process groups is discussed more fully in the Project Management Processes chapter. The knowledge areas are integration, scope, schedule, cost, quality, resource, communications, risk, procurement, and stakeholder management. The work of these process groups and the knowledge areas within them can occur simultaneously, and is iterated as the project progresses.

Chances are, there are some key aspects of project management you do not know. The answer to the question, “What is project management?” is described throughout this book. It can involve technical terms and processes, but it also involves roles and responsibilities and authority levels. Applying the practices, tools and techniques, and knowledge and skills of project management increases the likelihood of project success. As you read this book, you may find that project management involves more than you thought.

Effective use of project management ensures that the organization is focused on the most important work and, because of appropriately tailored planning efforts, the work is done correctly and in the most time- and cost-effective manner. Risks are identified and planned for before they occur, communication is managed effectively, and quality is achieved. These efforts result in satisfied stakeholders and achievement of business objectives.

What Is Organizational Project Management (OPM)?⁴ PAGE 16

Organizational Project Management (OPM) serves as a guide or driver for project, program, and portfolio management as well as other organizational practices. It is a framework for keeping the organization as a whole focused on overall strategy. OPM provides direction for how portfolios, programs, projects, and other organizational work should be prioritized, managed, executed, and measured to best achieve strategic goals and desired benefits. Figure 2.3 shows how organizational project management drives an organization with project, program, and portfolio management in place to achieve strategic goals. Understanding how these pieces interrelate, as depicted in this illustration, can help you answer questions correctly on the exam. Unless you are told otherwise, assume this organizational framework is in place when answering exam questions.

Project Management Framework T W O

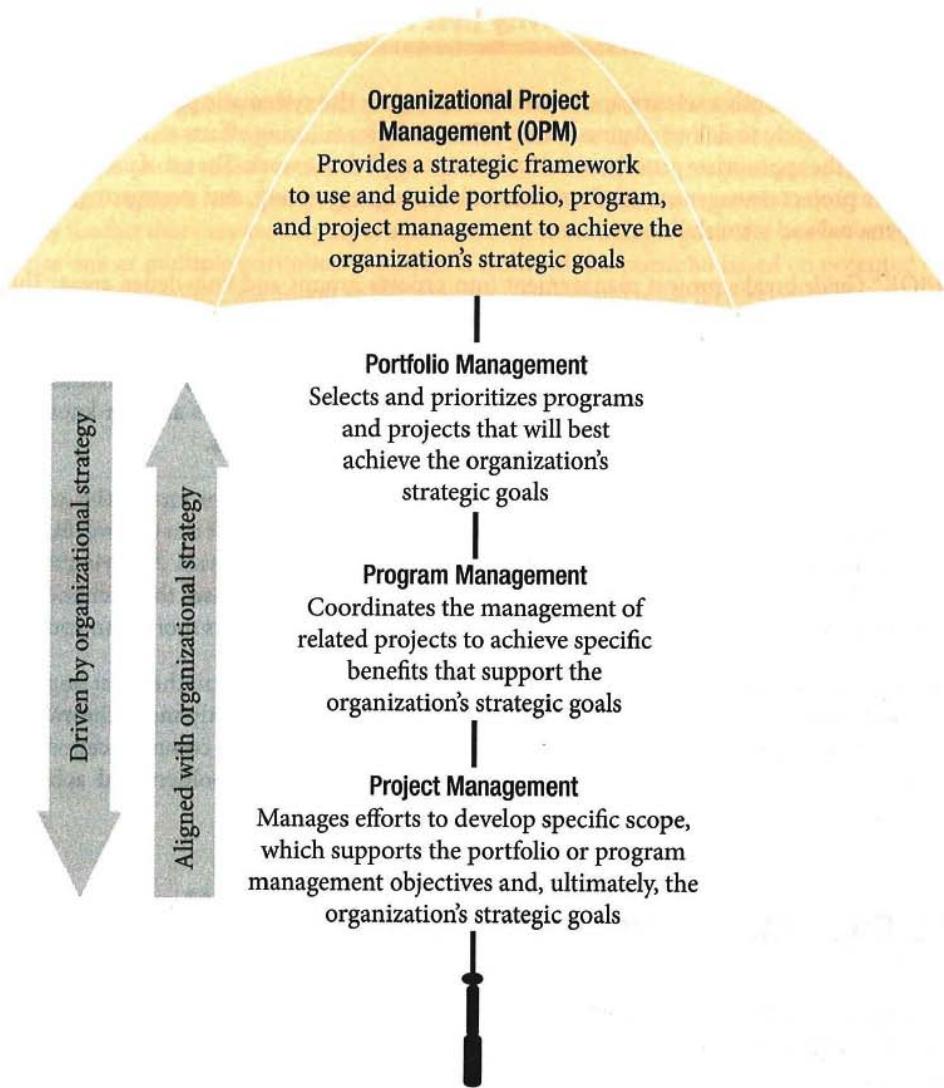


FIGURE 2.3 *Organizational project management*

A key point to understand is that all efforts in the organization—whether they are part of project, program, portfolio, or operational work—should be guided by the organization and support its strategic goals. This means that any changes to the organizational strategy will necessitate changes to the organization's portfolios, programs, projects, and operational work—both ongoing efforts and future initiatives. For example, if a project no longer aligns with the organizational strategy, the project may be changed midcourse to bring it into alignment, or it may be terminated.

Project Management Office (PMO) PAGE 48

The project management office (PMO) is a departmental unit within an organization that provides or ensures compliance with project governance. The office oversees and standardizes the management of projects. A PMO can take one of several different forms, including the following:

- **Supportive** A supportive PMO provides the policies, methodologies, templates, and lessons learned for managing projects within the organization. It typically exercises a low level of control over projects.
- **Controlling** A controlling PMO provides support and guidance on how to manage projects, trains others in project management and project management software, assists with specific project management tools, and ensures compliance with organizational policies. It typically has a moderate level of control over projects.
- **Directive** A directive PMO provides project managers for different projects, and is responsible for the results of those projects; all projects, or projects of a certain size, type, or influence, are managed by this office. A directive PMO has a high level of control over projects.

The PMO may:

- Manage the interdependencies among projects, programs, and portfolios.
- Integrate information from all projects to assess whether the organization is achieving its strategic objectives.
- Help provide resources.
- Recommend the termination of projects when appropriate.
- Monitor compliance with organizational processes.
- Help gather lessons learned into a repository and make them available to other projects.
- Provide templates for documents such as work breakdown structures or communications management plans.
- Provide guidance and project governance.
- Provide centralized communication about the projects.
- Be more heavily involved during project initiating than later in the project.
- Have representation on the change control board.
- Be a stakeholder.
- Prioritize projects.

Exercise Test yourself! Read the description of the PMO, and determine whether it is likely to be supportive, controlling, or directive, or a combination of the three.

Description	Type of PMO
1 Manages all projects throughout the organization	
2 Provides support and guidance; requires all projects within the organization to use designated project management software and templates, but doesn't otherwise exert control over the project	

Project Management Framework

T W O

Description	Type of PMO
3 Coordinates all projects within the organization	
4 Recommends common terminology, templates, reporting, and procedures to be used on projects throughout the organization to promote consistency and streamline efforts	
5 Appoints project manager	
6 Prioritizes projects	
7 Has the highest level of control over projects	

NOTE: You may prefer that the answers to the exercises were not listed right after the questions. If this is distracting for you, we recommend you keep a blank piece of paper available to cover the answers until you have completed each exercise and are ready to review it. Our analysis shows that having the answers right after the questions helps you more than it hurts.

Answer

Description	Type of PMO
1 Manages all projects throughout the organization	Directive
2 Provides support and guidance; requires all projects within the organization to use designated project management software and templates, but doesn't otherwise exert control over the project	Controlling
3 Coordinates all projects within the organization	Controlling or Directive
4 Recommends common terminology, templates, reporting, and procedures to be used on projects throughout the organization to promote consistency and streamline efforts	Supportive
5 Appoints project manager	Directive
6 Prioritizes projects	Controlling or Directive
7 Has the highest level of control over projects	Directive



When answering exam questions, assume there is a PMO in the organization, unless the question states otherwise. Read situational questions carefully to determine if the PMO is supportive, controlling, or directive.

Organizational Structure PAGE 45

A project does not operate in a vacuum. Projects are impacted by, and have an impact on, the cultural norms, management policies, and procedures of the organizations of which they are a part. These factors are increasingly important in global organizations in which team members are often located in different offices and in multiple countries. The best project managers look for these influences and manage them for the benefit of the project and the organization.

One of the primary forms of influence is how the company is organized. The organizational structure will dictate who the project manager goes to for help with resources, how communications must be handled, and many other aspects of project management. This influence is so important that an answer to a question on the exam can change depending on the structure of the organization being discussed.

Questions on the exam are often phrased in terms of the project manager's level of authority and how the form of organization impacts their management of projects. For example, exam questions may deal with who has the power in each type of organization (the project manager or the functional manager), or they may require you to understand the advantages and disadvantages to the project manager in each type of organization.

As you read through the following sections defining the different organizational structures, take the time to think about how each form would impact your work as a project manager and how you would solve problems in different situations within each structure.

Functional This is a common organizational structure. Functional organizations are grouped by areas of specialization within functional areas, such as accounting, marketing, or manufacturing. When you see "functional" on the exam, think "silo." Projects generally occur within a single department. If information or project work is needed from another department, employees transmit the request to the head of the department who communicates the request to the other department head. Otherwise, communication stays within the project. Team members complete project work in addition to normal departmental work.

Project-Oriented In a project-oriented, or projectized, organization, the entire company is organized by projects, and the project manager has control of the project. Personnel are assigned and report to a project manager. When you see "project-oriented" on the exam, think "no home." Team members complete only project work, and when the project is over, they do not have a department to go back to. They need to be assigned to another project or get a job with a different employer. Communication primarily occurs within the project. This type of organization can also be referred to as composite or hybrid.

Matrix⁵ This form is an attempt to maximize the strengths of both the functional and project-oriented structures. When you see "matrix" on the exam, think "two managers." The team members report to two managers: the project manager and the functional manager (for example, the engineering manager). Communication goes from team members to both managers. Team members do project work in addition to normal departmental work.

In a strong matrix, power rests with the project manager. In a weak matrix, power rests with the functional manager, and the power of the project manager is comparable to that of a coordinator or expediter. In a balanced matrix, the power is shared between the functional manager and the project manager.

As stated in the previous paragraph, the project manager's role in a weak matrix or in a functional organization might be one of the following:

Project Management Framework

T W O

- **Project expediter⁶** The project expediter acts primarily as a staff assistant and communications coordinator. The expediter cannot personally make or enforce decisions.
- **Project coordinator** This position is similar to the project expediter, except the coordinator has some authority and power to make decisions, and reports to a higher-level manager.

TRICKS OF THE TRADE The exam typically does not identify the form of organization being discussed. When it does not specify a form, assume matrix. If you remember this, you should get a few more questions right.

TRICKS OF THE TRADE A tight matrix has nothing to do with a matrix organization. It simply refers to colocation—the practice of locating the work spaces for the project team in the same room. Because it sounds similar to the other forms of organization, it has often been used as a fourth choice for these questions on the exam.

Exercise Test yourself! You can expect questions on the exam that will test your understanding of the advantages and disadvantages of the functional, project-oriented, and matrix organizational structures. Understanding the advantages and disadvantages of each will help you evaluate situations presented and choose the right answer within the identified constraints. Practice by listing your answers in the spaces below.

Functional

Advantages	Disadvantages

Project-Oriented

Advantages	Disadvantages

Matrix

Advantages	Disadvantages

Answer**Functional**

Advantages	Disadvantages
Easier management of specialists	People place more emphasis on their functional specialty to the detriment of the project
Team members report to only one supervisor	No career path in project management
Similar resources are centralized, as the company is grouped by specialties	The project manager has little or no authority
Clearly defined career paths in areas of work specialization	

Project-Oriented

Advantages	Disadvantages
Efficient project organization	No "home" for team members when project is completed
Team loyalty to the project	Lack of specialization in disciplines
More effective communications than functional	Duplication of facilities and job functions
Project manager has more power to make decisions	May result in less efficient use of resources

Matrix

Advantages	Disadvantages
Highly visible project objectives	Extra administration is required
Improved project manager control over resources (as compared to functional)	Project team members have more than one boss
More support from functional areas	More complex to monitor and control
Maximum utilization of scarce resources	Resource allocation is more complex
Better coordination	Extensive policies and procedures are needed
Better horizontal and vertical dissemination of information	Functional managers may have different priorities than project managers
Team members maintain a "home"	Higher potential for conflict

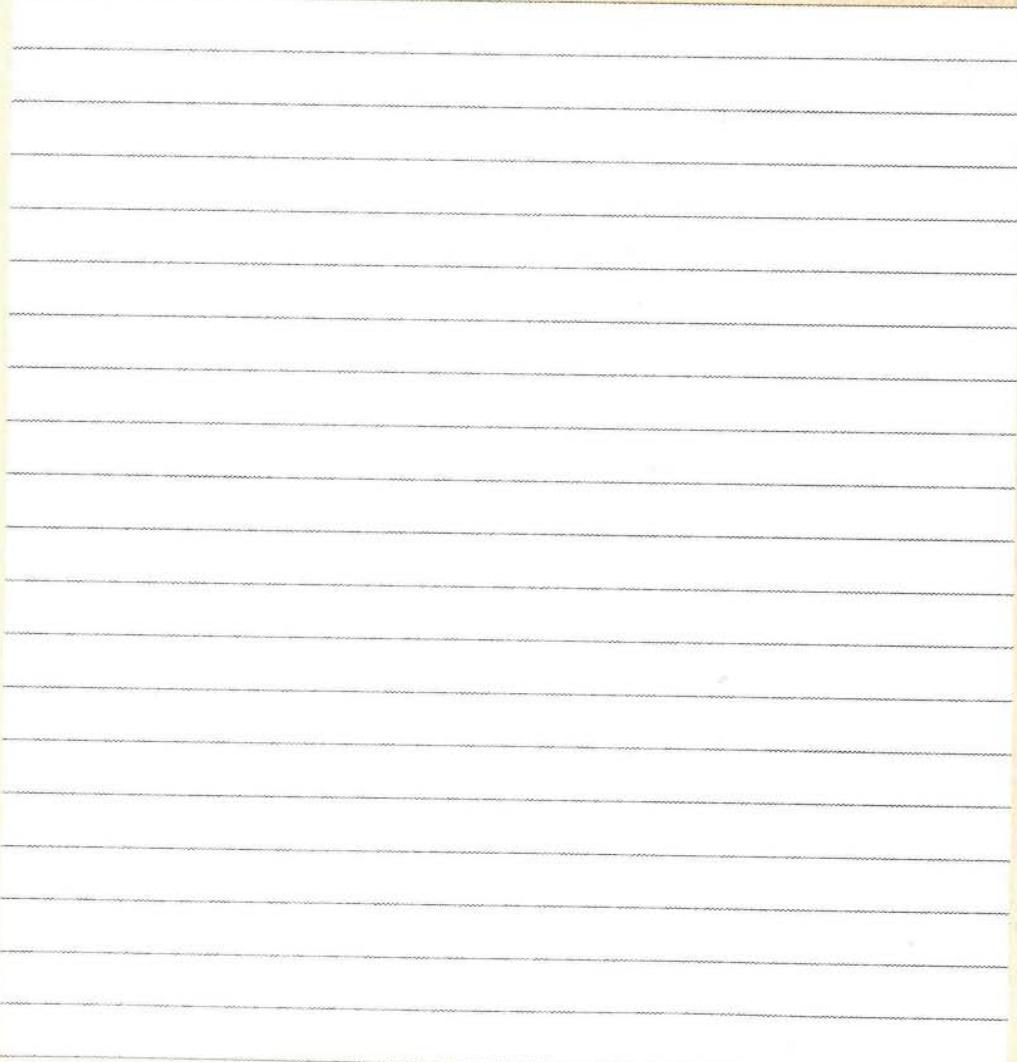
Now that we have discussed the organizational structure, let's look at specific roles within projects.

Project Roles

For the exam, it is important to understand who is involved in the project and what they should be doing. Some people actually fail the exam because they are not clear about roles within a project and do not really know what a project manager does, or at least do not understand how the exam expects the role to be performed. They may also have problems differentiating between what the team, project manager, and management should be doing.

This exercise will help you focus on roles and responsibilities within the context of the exam. The answers may provide you with new information or simply refresh your memory. You will see many of the items listed in the answers to these exercises as you read the rest of this book.

Exercise The Role of the Project Sponsor/Initiator Test yourself! Describe the role of the project sponsor/initiator.



Answer The Role of the Project Sponsor/Initiator A basic definition of a sponsor is one who provides the financial resources for the project; however, the exam has attributed additional duties to the sponsor—including providing support for the project and protecting the project from unnecessary changes. The role of the sponsor may be filled by two or more individuals, working together.

In procurement situations, the customer (buyer) may also be the sponsor. In such cases, the selling organization should also have a sponsor.

Think about your company's management as you read this. Do they know what their role is on projects? Do you? How can you help them better understand their role? Without having the sponsor or someone in management performing the functions detailed in the lists that follow, the project will suffer, wasting time and resources. Management must serve as a protector of the project (so long as the project continues to meet the organization's strategic goals). Management is anyone senior to the project manager in the organization, including program or portfolio managers.

Read the following list carefully to understand the role of the sponsor and/or senior management in an organization. Since the list is so long—and since many project managers have gaps in their knowledge here—we have organized this section by process group.

During or prior to project initiating, the sponsor:

- Has requirements that must be met
- Is a project stakeholder
- Participates in developing the business case for the project
- Helps to define the measurable project objectives
- Advocates for or champions the project, especially while the project concept is being put together
- Serves as a voice of the project or spokesperson to those who do not know about the project, including upper management
- Gathers the appropriate support for the project
- Ensures buy-in throughout the organization
- Provides funding
- Provides high-level requirements
- Provides information regarding the initial scope of the project
- May dictate milestones, key events, or the project end date (along with the customer)
- Determines the priorities between the constraints (if not done by the customer)
- Provides information that helps develop the project charter
- Gives the project manager authority as outlined in the project charter
- Sets priorities between projects
- Encourages the finalization of high-level requirements and scope by the stakeholders
- Guides the process to get the project approved and formalized, assisted by the project manager as necessary

During project planning, the sponsor:

- Provides the project team with time to plan
- May review the WBS
- Identifies risks

Project Management Framework

T W O

- Determines the reports needed by management to oversee the project
- Provides expert judgment
- Helps evaluate trade-offs during crashing, fast tracking, and reestimating
- Approves the final project management plan

During project executing and project monitoring and controlling, the sponsor:

- Supports the efforts of the project manager
- Protects the project from outside influences and changes
- Enforces quality policies
- Provides expert judgment
- Helps evaluate trade-offs during crashing, fast tracking, and reestimating
- Resolves conflicts that extend beyond the project manager's control
- Approves, rejects, or defers changes, or authorizes a change control board to do so
- May direct that a quality review be performed
- Clarifies scope questions
- Works with the project manager to monitor progress

During project closing, the sponsor:

- Provides formal acceptance of the deliverables (if they are the customer)
- Enables an efficient and integrated transfer of deliverables to the customer
- Supports the collection of historical records from the project

Exercise The Role of the Project Team

Test yourself! Describe the role of the team.

Answer The Role of the Project Team The project team is a group of people, including the project manager, who will complete the work of the project. The team members can change throughout the project as people are added to and released from the project.

Generally, it is the team's role to help plan what needs to be done by creating the WBS and schedule estimates for their work packages or activities. During project executing and monitoring and controlling, the team members complete activities to produce the deliverables represented in work packages and help look for deviations from the project management plan. More specifically, the team may help:

- Identify and involve stakeholders.
- Identify requirements.
- Identify constraints and assumptions.
- Create the WBS.
- Decompose the work packages for which they are responsible into schedule activities.
- Identify dependencies between activities.
- Provide schedule and cost estimates.
- Participate in the risk management process.
- Comply with quality and communications plans.
- Enforce ground rules.
- Execute the project management plan to accomplish the work defined in the project scope statement.
- Attend project team meetings.
- Recommend changes to the project, including corrective actions.
- Implement approved changes.
- Share new knowledge.
- Contribute to the lessons learned knowledge base.

In agile environments, team members are responsible for clarifying user stories with the customer so that they can estimate and plan the releases and iterations, hold reviews and retrospectives, and update the project information using tools such as Kanban boards and burndown charts.

On large projects, there may be too much project management work for one person to perform. Therefore, the project manager may select some project team members to help perform the project management activities. The *PMBOK® Guide* refers to these people as the project management team. Members of this team must have project management training. Keep all this information in mind when the exam uses the term "project management team" versus "project team" or "team."

Project Management Framework TWO

Exercise The Role of the Stakeholders Test yourself! Describe the role of the stakeholders as a group.

Answer The Role of the Stakeholders A stakeholder is anyone who will be impacted by the project or can positively or negatively influence the project. This includes the customer or end user, the project manager and team, the project's sponsor, program and portfolio managers, the project management office, functional or operational managers within the organization, other departments or groups within the organization (such as business analysis, marketing procurement, quality, or legal), and external sellers that provide services or materials for the project. Questions about the role of stakeholders and how they should be managed appear throughout the exam.

The stakeholders' role on a project is determined by the project manager and the stakeholders themselves. Stakeholders should be involved in planning the project and managing it more extensively than many people are used to on their real-world projects. For example, stakeholders may be involved in:

- Creating the project charter and the project scope statement
 - Developing the project management plan
 - Approving project changes and being on the change control board
 - Identifying constraints and assumptions

- Identifying requirements
 - Managing risk

In an agile environment, the project owner role can be filled by someone from the business who is responsible for working with the agile team to prioritize features and functions. This person may also:

- Attend reviews and accept the deliverables presented.
 - Be a risk owner.
 - Participate in phase gate reviews.
 - Be involved with governance.
 - Identify issues.
 - Document lessons learned.
 - Provide expert judgment.

Exercise The Role of the Functional or Resource Manager Test yourself! Describe the role of the functional or resource manager.

Answer The Role of the Functional or Resource Manager A functional or resource manager manages and is responsible for the human and physical resources in a specific department, such as IT, engineering, public relations, marketing, etc. They are responsible for working with the project manager to meet the needs of the project. As managers of people, facilities, or equipment, functional or resource managers maintain a calendar indicating availability of these resources for projects and other organizational work, and they coordinate with project managers who need the resources. This might involve negotiation if people, facilities, or equipment are needed by more than one project at the same time. If the project manager has issues with resources provided by the functional manager, the managers collaborate to resolve the issues.

The degree to which functional managers are involved in a project depends on the organizational structure. In a matrix organization, the functional managers and project manager share responsibility for directing the work of individuals and managing physical resources needed on the project. In a project-oriented organization, the project manager does all the directing of team resources. In contrast, the project manager does little directing in a functional organization, where that responsibility falls to functional managers. To avoid conflict, the project manager and functional managers must balance their respective needs regarding the use of resources to complete project and functional work. It is generally the responsibility of the project manager to manage this relationship by using clear communication and interpersonal and team skills, such as conflict management and emotional intelligence.

The specific activities performed by functional managers on a project vary greatly based on the type of organizational structure, as well as the type of project, but may include the following:

- Assigning specific individuals to the team and negotiating with the project manager regarding team and physical resources
- Letting the project manager know of other projects or departmental work demands that may impact the project
- Participating in the initial planning until work packages or activities are assigned
- Providing subject matter expertise
- Approving the final schedule during schedule development when it involves team or physical resources under their control
- Approving the final project management plan during project management plan development when it involves team or physical resources under their control
- Recommending changes to the project, including corrective actions
- Managing activities within their functional area
- Assisting with problems related to team or physical resources under their control
- Improving resource utilization
- Participating in rewards and recognition of team members
- Participating in risk identification
- Participating in quality management
- Sitting on the change control board

Exercise The Role of the Project Manager Test yourself! Describe the role of the project manager.

Answer The Role of the Project Manager To put it simply, the project manager is responsible for managing the project to meet project objectives and deliver value and benefits to the organization. Think about your role on projects. Do you have the knowledge, abilities, and authority described in this book? Do you fully plan and control your projects? Are you leading and managing your projects effectively?

Remember that as a project manager, you must come up with a project management plan that people agree to and believe is realistic, and, even more importantly, that you can stake your reputation on. A project manager is responsible for ensuring that a project is completed according to the project schedule and budget, including approved changes, and that it meets other objectives. The project manager is held accountable for delivering project benefits.

In today's project environments, people managing projects may not realize they lack knowledge of what proper project management involves, and many companies do not understand why project management is so important in delivering the benefits they want to realize. People with the title of project manager are often not really project managers at all; instead, their role is more of a project coordinator. Before taking the exam, it is important that you understand not only the project manager's role but also all the roles of other people involved in projects.

Project Management Framework

T W O

Remember that the work of the project manager may be shared by members of the project team, referred to as the project management team. This is described in the “Role of the Project Team” exercise.

The project manager’s level of authority can vary depending on the structure of the organization and other factors, such as whether they are assigned part-time or under contract. On the exam, however, the authority of the project manager has generally been interpreted to mean that the project manager:

- Is assigned to the project no later than project initiating
- Helps write the project charter
- Is in charge of the project, but not necessarily the resources
- Does not have to be a technical expert
- Identifies and analyzes constraints and assumptions
- Leads and directs the project planning efforts
- Selects appropriate processes for the project
- Identifies dependencies between activities
- Analyzes unrealistic schedule requirements, and takes action to produce a realistic schedule
- Develops time and cost reserves for the project
- Has the authority and accountability necessary to accomplish the project management work
- Says no when necessary
- Integrates the project components into a cohesive whole that meets the customer’s needs
- Finalizes and gains approval of the project management plan
- Influences the project team and the atmosphere in which the team works by promoting good communication, insulating the team from politics (both internal and external to the project), enhancing the positive aspects of cultural differences, and resolving team issues
- Spends more time being proactive than dealing with problems (being reactive)
- Understands how cultural differences may impact the project, particularly in the case of global teams, virtual teams, or projects involving multiple organizations
- Ensures professional interactions between the project team and other stakeholders
- Coordinates interactions between the project team and key stakeholders
- Understands and enforces professional and social responsibility
- Assists the team and other stakeholders during project executing
- Communicates
- Develops the team
- Uses rewards and recognition
- Identifies and delivers required levels of quality
- Identifies stakeholders, supports stakeholder engagement, and manages stakeholder expectations throughout the project
- Manages project knowledge, including sharing lessons learned
- Solves problems
- Makes decisions
- Demonstrates ethics and leadership
- Manages and controls resources

T W O Project Management Framework

- Maintains control over the project by measuring performance and determining variances from the plan
- Monitors risk, communications, and stakeholder engagement to ensure they are in conformance with expectations
- Determines the need for change requests, including recommended corrective and preventive actions and defect repair
- Approves or rejects changes as authorized, manages the change control board, and frequently sits on the change control board
- Uses metrics to identify variances and trends in project work, and is responsible for analyzing the impact of these variances and trends
- Works with team members to resolve variances from the project management plan
- Keeps the team members focused on risk management and possible responses to the risks
- Performs project closing at the end of each phase and for the project as a whole
- Performs or delegates most of the activities outlined in this book
- Applies project management knowledge and uses personal and leadership skills to achieve project success
- Is accountable for project success or failure

Other roles you may see referenced in scenario questions on the exam include the portfolio manager and the program manager, both of which are described in the following sections.

The Role of the Portfolio Manager

The portfolio manager is responsible for governance at an executive level of the projects or programs that make up a portfolio. A project is included in a portfolio based on the value of the project, the potential return on investment, whether it aligns with corporate strategy, whether the level of risk associated with the project is acceptable, and other factors critical to organizational success.

The work of the portfolio manager may include the following:

- Managing various projects or programs that may be largely unrelated to each other
- Ensuring selected projects provide value to the organization
- Working with senior executives to gather support for individual projects
- Getting the best return from resources invested

The Role of the Program Manager

The program manager is responsible for managing a group of related projects. Projects are combined into programs to provide coordinated control, support, and guidance. The program manager works to meet project and program goals.

The work of the program manager may include the following:

- Managing related projects to achieve results not obtainable by managing each project separately
- Ensuring projects selected support the strategic goals of the organization
- Providing oversight to adjust projects for the program's benefit
- Guiding and supporting individual project manager's efforts

In addition to understanding the basics we have just discussed, it is also important to become familiar with many terms you will see used throughout the rest of this book. Many of them are used in multiple processes and for different purposes throughout a project.

Organizational Process Assets (OPAs)

PAGE 39

Most organizations maintain two types of OPAs: processes, procedures, and policies and organizational knowledge repositories.

Processes, Procedures, and Policies Over time, organizations develop or adopt processes, procedures, and policies for projects. Collectively, these processes, procedures, and policies are referred to as organizational process assets, and they apply to aspects of the project such as quality, procurement, and resource management, as well as change control, safety, compliance, and more. Projects may recommend changes or ways to increase the efficiency of these processes and procedures, but they are generally owned by the project management office or other departments responsible for organizational governance.

Organizational Knowledge Repositories⁷ The other type of organizational process asset is organizational knowledge repositories, which include information on many facets of projects.

Historical knowledge bases are maintained and updated by every project, and made accessible to the rest of the organization as part of the historical information repository. It can be used to plan and manage future projects, thereby improving the process of project management and avoiding challenges experienced by past projects.

Historical information can include:

- Activities
- WBSs
- Benchmarks
- Reports
- Risks and risk response plans
- Estimates
- Resources used
- Project management plans
- Project documents
- Baselines
- Correspondence

Another part of historical information is lessons learned. We will discuss lessons learned in more detail in the Integration Management chapter. For now, you need to know that lessons learned, which are created throughout projects, document what went right, what went wrong, and what the team would do differently if they had the opportunity to start the project over again. The lessons learned register from each project becomes part of the lessons learned repository⁸ after project closure.

Other organizational knowledge repositories include:

- Configuration management, including file structure, file-naming conventions, baselines of organizational standards, and templates of project documents
- Financial data, including budgets and actual costs of completed projects
- Issue logs and documentation regarding defects on projects

- Metrics that may be useful for other projects
- Project management plans and baselines, as well as project documents, such as network diagrams, risk registers, and stakeholder registers

When answering questions on the exam, assume the organization has information such as historical records and lessons learned from previous projects and that the company has incorporated these records into an indexed organizational knowledge repository available to all.

Enterprise Environmental Factors PAGE 38

Enterprise environmental factors (EEFs) are similar to organizational process assets in that they provide context within which to plan the project. However, enterprise environmental factors are generally outside the control of the project team.

Enterprise environmental factors external to the organization include governmental or other rules and regulations that apply to the performing organization.

Internal enterprise environmental factors include the structure, culture, systems, and geographic location(s) of the organization. Resource-related EEFs include the technology and resources available for assignment to projects, such as documentation of the skills and abilities of internal and preapproved external resources that are available through approved agreements. EEFs related to project management may include a resource management system, a procurement system, and a quality management system.

When answering questions on the exam, assume that the impacts and limitations imposed by enterprise environmental factors are taken into consideration during planning and as the work is carried out.

EEFs are inputs to many planning, executing, and monitoring and controlling processes. The project may suggest improvements to the EEFs, particularly in the area of resource management.

Assumption Log

The assumption log is a repository of both assumptions and constraints. It is started at the time the project charter is developed. Assumptions and constraints are first identified at a high level in the business case and project charter. They will receive further attention as the project progresses. The assumption log is an input to many project processes, and assumption log updates are a frequent output.

Assumptions It is an important part of communication to understand what your management and stakeholders believe to be true about the project—these are assumptions. Assumptions are comparable to expectations, as they may not be entirely based on fact. Stakeholders may not realize they are making assumptions, and therefore may not articulate them when communicating their requirements. Incorrect assumptions introduce risk to the project, so they must be identified and managed by the project manager. The assumption log is a frequent input to planning processes, and updates to the log are outputs of many planning and control processes.

Constraints⁹ Constraints are easier to identify than assumptions, as they are usually clearly imposed by management or the sponsor. Constraints limit options during planning and beyond. A project manager must juggle many things on a project, including project constraints such as schedule, cost, risk,

Project Management Framework

T W O

scope, quality, resources, customer satisfaction, and any other factors that limit options (see fig. 2.4). For example, the date a milestone deliverable is due, the date by which the project must be completed, and the maximum allowable risk a project is allowed to have are all constraints. Constraints can be a challenge to manage.

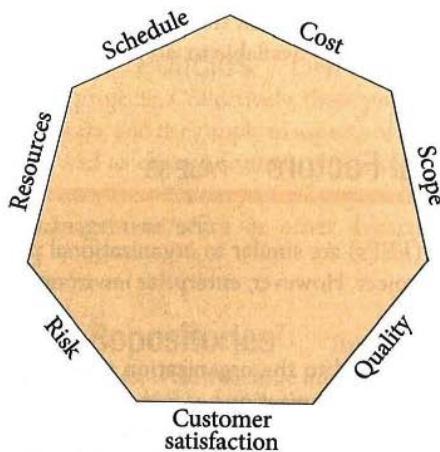


FIGURE 2.4 *Project constraints*

Management directly or indirectly sets the priority of each constraint. This prioritization is then used to plan the project, evaluate the impact of changes, and prove successful project completion. It is important to evaluate the effect a change to one constraint has on another. In other words, you probably cannot shorten the schedule without causing a negative impact on cost, risk, etc. This comes into play in planning, and as the project manager deals with change requests. For example, an additional activity may only take one day, but the cost of adding the activity must be evaluated, along with the impact to the critical path. The risk of adding or rejecting the requested activity must also be evaluated. Changes to the project plan generally impact multiple constraints. The project manager and team can assess them, but change requests that impact approved parts of the plan must go through integrated change control.

Constraints are discussed in many areas of this book. Take time to really understand the discussion of integrated change control in the Integration Management chapter, including how it relates to constraints. Understanding the relationship between the constraints and how they impact a project can help you get several questions right on the exam.

Stakeholders¹⁰ and Stakeholder Management¹¹

Stakeholders include more than the project manager, customer, sponsor, and team; stakeholders are any people or organizations whose interests may be positively or negatively impacted by the project or the product of the project. They can include individuals and groups you may not have thought about before, such as the project management team, the project management office, portfolio managers, program managers, other departments or groups within the organization (marketing, legal, or customer service, for example), functional or operational managers, and business analysts. Stakeholders may be actively involved in the project work or may fill an advisory role. Stakeholders may also be external to the organization, including government regulators, consultants, sellers, end users, customers, taxpayers, banks, and other financial institutions. People or groups who could exert positive or negative influence over the project but would not otherwise be considered part of the project are also considered stakeholders.

Think about how you involve stakeholders on your projects. Proper stakeholder management means you keep them informed, solicit their input, and work to satisfy their needs and expectations. Without this effort, the project may fail.

The topic of stakeholders is discussed throughout this book because a project manager should analyze and manage the needs and levels of influence of stakeholders throughout a project. The Stakeholder Management chapter includes an in-depth discussion of the concept of stakeholder management. Also note that the Resource Management and Communications Management chapters give a special focus to this topic.

Work Performance Data, Information, and Reports PAGE 26

A great deal of data and information is generated, considered, and communicated throughout the life of a project, from initial observations and measurements to analyzed content and reports. The *PMBOK® Guide* uses three different terms to identify the stages through which this data and information move. Work performance data includes the initial measurements and details about activities gathered during the Direct and Manage Project Work process in executing. When monitoring and controlling a project, work performance data is analyzed to make sure it conforms to the project management plan. It is also assessed to determine what the data means for the project as a whole. The result is known as work performance information. Work performance information can then be organized into work performance reports, which are distributed to the various stakeholders who need to receive and possibly act on the information.

For example, let's say a project team performs their assigned work according to the project management plan. They provide information and data on their progress: a certain activity took 10 hours and was completed on July 21st. This is work performance data. The next step is to look at how this data compares to the project management plan (in this case, the project schedule). The activity in this example was estimated to take 12 hours, with an estimated completion date of July 22nd. You need to analyze why this activity took less time than planned and what this will mean for the rest of the project. Why was the work completed early? Will this mean improved performance for the rest of the project? Did the team follow the communications management plan and notify resources assigned to successor activities about the anticipated early completion so they could start their work early? Should future activities be reestimated if similar resources will be performing similar work? The result of this analysis is work performance information. This information can then be organized into work performance reports that are distributed through the Manage Communications process. If the activity was on the critical path and had taken longer than scheduled, a formal change request might have been required to adjust the rest of the schedule.

Frequently Used Tools and Techniques

There are over 100 tools and techniques in the *PMBOK® Guide*, and there are many more that we discuss in this book. The key is to use the right ones for the right purpose under the right conditions. It is also important to realize tools and techniques can have multiple applications throughout the project management process.

You will see tools and techniques described throughout this book, in the knowledge area chapter(s) where they are primarily used. You don't have to be an expert at using all of them, but you do need to understand the purpose of each. The following tools and techniques are categorized by their function.

Data Gathering If you need to collect input from stakeholders, you can use one or more of the following data-gathering tools and techniques:

- Benchmarking
- Brainstorming
- Prompt lists
- Checklists
- Interviews
- Market research
- Questionnaires and surveys

Data Analysis Depending on the type of data you are working with and the depth of analysis you need to do, you can choose from many data analysis tools and techniques, including the following:

- Alternatives analysis
- Assumptions and constraints
- Cost-benefit analysis
- Document analysis
- Earned value analysis
- Performance reviews
- Reserve analysis
- Root cause analysis
- Simulation
- SWOT
- Trend analysis
- Variance analysis
- What-if analysis

Data Representation Throughout the project, you will gather and generate data from various sources for a number of purposes. You will likely need to communicate that information to others. This category includes options for representing, or communicating, data. Some tools and techniques are designed for a specific purpose. You will need to choose which ones to use based on the type and amount of data you are working with, the audience with whom you will be communicating, and, possibly, other considerations, such as the knowledge area you are working in. Data representation tools and techniques include the following:

- Affinity diagrams
- Cause-and-effect diagrams
- Control charts
- Flow charts
- Hierarchical charts
- Histograms
- Logical data models
- Matrix diagrams/charts
- Mind mapping

- Probability and impact matrices
- Scatter diagrams
- Stakeholder engagement assessment matrices
- Stakeholder mapping/representation
- Text-oriented formats

Decision-Making Throughout the project, you will have to make countless decisions, often with the input of the project team. There are many approaches to decision-making, including the following techniques, which are used in many project management processes:

- Multicriteria decision analysis
- Voting

Communication As you will read later in this book, a great deal of a project manager's time is spent communicating with management, the team, the customer, and other stakeholders. The following are several important communication techniques and concepts you will use throughout the project:

- Active listening
- Feedback
- Presentations
- Meeting management
- Communication methods
- Communications technology

Interpersonal and Team Skills Interpersonal and team skills are elements of the art of project management. Closely related to the communication techniques and concepts listed above, the following skills are essential for project success:

- Conflict management
- Cultural awareness
- Decision-making
- Emotional intelligence
- Facilitation
- Influencing
- Leadership
- Meeting management
- Motivation
- Negotiation
- Networking
- Observation/conversation
- Political awareness
- Team building

Estimating The project manager is responsible for leading estimating efforts for many aspects of the project, including schedule, cost, and resources. The following are common estimating techniques you will learn about in this book:

- Estimating
- Analogous
- Bottom-up
- Top-down
- Expert judgment

Project Management Information System (PMIS) An organization's project management information system is part of its enterprise environmental factors. The PMIS includes automated tools, such as scheduling software, a configuration management system, shared workspaces for file storage or distribution, work authorization software, time-tracking software, and procurement management software, as well as repositories for historical information. The PMIS is used in many planning, executing, and monitoring and controlling processes.

Expert Judgment Sometimes, the easiest way to get information is to consult experts. Often, those with expertise needed by the project are working on the team, or at least within the organization. Expert judgment is a common tool of the project management planning processes, although it is not frequently discussed in this book.

Meetings Meetings are often used in the planning processes of a project, although you will not always see meetings discussed in this book as a planning tool. Meetings can be an effective way to get input or feedback from groups of people, but they can be overused. The project manager is responsible for determining whether a meeting is worth the time of those who would attend it, or if there is a more efficient way to achieve an objective. The value of meetings, as well as some suggested ground rules for meetings, is discussed in the Resource Management chapter.

Make sure you are comfortable with all the concepts in this chapter before reading further; these concepts provide a basis for understanding much of the material presented in the remainder of this book.

Practice Exam

1. Understanding the culture, policies, and procedures of the organization in which the project is being performed is most challenging in:
 - A. Global organizations
 - B. Manufacturing organizations
 - C. Small organizations
 - D. Agile organizations

2. A project team is discussing the benefits and drawbacks of working on projects within their organization now that it has become project oriented. They can agree on many advantages for the team and for the organization, but also agree there are some drawbacks relative to the strong matrix structure the organization used to have. In a project-oriented organization, the project team:
 - A. Reports to many bosses
 - B. Has no loyalty to the project
 - C. Reports to the functional manager
 - D. Will not always have a “home”

3. A project manager is trying to complete a software development project, but cannot get enough attention for the project. Resources are focused on completing process-related work, and the project manager has little authority to assign resources. What form of organization must the project manager be working in?
 - A. Functional
 - B. Matrix
 - C. Expediter
 - D. Coordinator

4. A project manager has little project experience, but she has been assigned as the project manager of a new project. Because she will be working in a matrix organization to complete her project, she can expect communications to be:
 - A. Simple
 - B. Open and accurate
 - C. Complex
 - D. Hard to automate

5. A project team member is talking to another team member and complaining that many people are asking him to do things. If he works in a functional organization, who has the power to give direction to the team member?
 - A. The project manager
 - B. The functional manager
 - C. The team
 - D. The PMO

Project Management Framework

T W O

6. Two project managers have just realized that they are in a weak matrix organization and that their power as project managers is quite limited. One figures out that he is really a project expediter, and the other realizes she is really a project coordinator. How is a project expediter different from a project coordinator?
 - A. The project expediter cannot make decisions.
 - B. The project expediter can make more decisions.
 - C. The project expediter reports to a higher-level manager.
 - D. The project expediter has some authority.
7. Who has the most power in a project-oriented organization?
 - A. The project manager
 - B. The functional manager
 - C. The team
 - D. They all share power
8. All the following are characteristics of a project except:
 - A. It is temporary.
 - B. It has a definite beginning and end.
 - C. It has interrelated activities.
 - D. It repeats itself every month.
9. A framework for keeping an organization focused on its overall strategy is:
 - A. Organizational project management
 - B. The PMBOK® Guide
 - C. Project governance
 - D. Portfolio management
10. A project manager's primary responsibility is to deliver the product of the project within project constraints. Actions taken and changes made to the benefit of one constraint could negatively affect another. Which of the following best describes the major constraints on a project?
 - A. Scope, number of resources, and cost
 - B. Scope, cost, and schedule
 - C. Scope, schedule, cost, quality, risk, resources, and customer satisfaction
 - D. Schedule, cost, and number of changes
11. If a project manager is concerned with gathering, integrating, and disseminating the outputs of all project management processes, she should concentrate on improving the:
 - A. Work breakdown structure (WBS)
 - B. Communications management plan
 - C. Project management information system (PMIS)
 - D. Scope management plan

T W O Project Management Framework

12. A project manager is managing his second project. It started one month after the first one did, and both projects are still in process. Though his first project is small, the new project seems to be quickly growing in size. As each day passes, the project manager is feeling more and more in need of help. The project manager has recently heard that there was another project in the company last year that was similar to his second project. What should he do?
- A. Contact the project manager for the other project, and ask for assistance.
 - B. Obtain historical records and guidance from the project management office (PMO).
 - C. Wait to see if the project is impacted by the growth in scope.
 - D. Make sure the scope of the project is agreed to by all the stakeholders.
13. To obtain support for the project throughout the performing organization, it's best if the project manager:
- A. Ensures there is a communications management plan
 - B. Correlates the need for the project to the organization's strategic plan
 - C. Connects the project to the personal objectives of the sponsor
 - D. Confirms that the management plan includes the management of team members
14. Your management team has decided that all orders will be treated as projects and that project managers will be used to update orders daily, to resolve issues, and to ensure the customer formally accepts the product within 30 days of completion. Revenue from the individual orders can vary from \$100 to \$150,000. The project manager will not be required to perform planning or provide documentation other than daily status. How would you define this situation?
- A. Because each individual order is a "temporary endeavor," each order is a project.
 - B. This is program management since there are multiple projects involved.
 - C. This is a recurring process.
 - D. Orders incurring revenue over \$100,000 would be considered projects and would involve project management.
15. As a project manager, you have had to develop skills to help plan and manage projects successfully. Which skills would best help you encourage project teams to reach levels of high cooperation and achievement, promote a positive relationship with sellers on a project, and involve stakeholders appropriately through all aspects of the project?
- A. Active listening, negotiating, and political awareness
 - B. Networking, communication models, and SWOT
 - C. Sensitivity analysis, active listening, and leadership
 - D. Communication methods, team building, and claims administration
16. A project team is working on manufacturing a new product, but they are having difficulty creating a project charter. What is the best description of the real problem?
- A. They have not identified the project objectives.
 - B. They are working on a process and not a project.
 - C. The end date has not been set.
 - D. They have not identified the product of the project.

Project Management Framework

T W O

17. One of your team members informs you that he does not know which of the many projects he is working on is the most important. Who should determine the priorities between projects in a company?
 - A. The project manager
 - B. The project management team
 - C. The project management office (PMO)
 - D. The project team
18. The difference between a project, program, and portfolio is:
 - A. A project is a temporary endeavor with a beginning and an end, a program may include other nonproject work, and a portfolio is all the projects in a given department or division.
 - B. A project is a lengthy endeavor with a beginning and an end, a program combines two or more unrelated projects, and a portfolio combines two or more programs.
 - C. A project is a temporary endeavor with a beginning and an end, a program is a group of related projects, and a portfolio is a group of projects and programs related to a specific strategic organizational objective.
 - D. A project is a contracted endeavor with a beginning and an end, a portfolio is a group of projects with more open-ended completion dates, and a program combines two or more portfolios.
19. Operational work is different from project work in that operational work is:
 - A. Unique
 - B. Temporary
 - C. Ongoing and repetitive
 - D. A part of every project activity
20. Company procedures require the creation of a lessons learned register. Which of the following is the best use of lessons learned?
 - A. Historical records for future projects
 - B. Planning record for the current project
 - C. Informing the team about what the project manager has done
 - D. Informing the team about the project management plan
21. A complex aerospace engineering project is nearing completion. Because the work was highly technical and new to the organization, the product of the project was released two months later than planned. Despite the late delivery, management is appreciative of the effort expended and believes that this product will generate additional opportunities for the organization. Management also thinks that the experience of this team will provide great value for teams working on similar projects in the future. The sponsor requests that lessons learned be thoroughly documented. Lessons learned are best completed by:
 - A. The project manager
 - B. The team
 - C. The sponsor
 - D. The stakeholders

T W O Project Management Framework

22. Consideration of ongoing operations and maintenance is crucially important to products of projects. Ongoing operations and maintenance should:

- A. Be included as activities to be performed during project closure
- B. Be a separate phase in the project life cycle because a large portion of life cycle costs is devoted to maintenance and operations
- C. Not be viewed as part of a project
- D. Be viewed as a separate project

23. What is a program?

- A. An initiative set up by management
- B. A means to gain benefits and control of related projects
- C. A group of unrelated projects managed in a coordinated way
- D. A government regulation

24. A company is making an effort to improve its project performance and create historical records of past projects. What is the best way to accomplish this?

- A. Create project management plans.
- B. Create lessons learned.
- C. Create network diagrams.
- D. Create status reports.

Answers

1. Answer A

Explanation Understanding the culture, policies, and procedures of the organization in which the project is being performed is especially challenging in global organizations. The culture, policies, and procedures of the performing office may be different from those of the office from which the project is managed, and may also vary between international offices of the same organization.

This will influence how the project is managed.

2. Answer D

Explanation The main drawback of a project-oriented organization is that at the end of the project when the team is dispersed, they do not have a functional department (“home”) to which to return. They need to be assigned to another project or get a job with a different employer.

3. Answer A

Explanation In a functional organization, the project manager has the least support for the project and has little authority to assign resources. Project expeditor and project coordinator are roles in a weak matrix organization.

4. Answer C

Explanation Because a project done in a matrix organization involves people from across the organization, communications are more complex.

5. Answer B

Explanation In a functional organization, the team members report to the functional manager. The project manager probably reports to the functional manager as well.

6. Answer A

Explanation The project coordinator reports to a higher-level manager and has authority to make some decisions. The project expeditor has no authority to make decisions.

7. Answer A

Explanation In a project-oriented organization, the entire company is organized by projects, giving the project manager the most power.

8. Answer D

Explanation “It repeats itself every month” implies that the whole project repeats every month. Generally, the only things that might repeat in a project are some activities. The whole project does not repeat. This is more likely a characteristic of ongoing business operations.

9. Answer A

Explanation Organizational project management (OPM) provides a framework and direction for how projects, programs, portfolios, and organizational work should be done to meet the organization’s strategic goals.

10. Answer C

Explanation “Scope, schedule, cost, quality, risk, resources, and customer satisfaction” is the most accurate list of constraints, or competing demands, that a project manager must deal with.

T W O Project Management Framework

11. Answer C

Explanation The scope management plan and the WBS focus on project scope. The communications management plan addresses who will be communicated with, when, and in what format. The only choice that addresses gathering, integrating, and disseminating information is the PMIS.

12. Answer B

Explanation There are many things the project manager could do. Asking the other project manager for assistance is not the best choice, as the other project manager might not be an experienced mentor. Her advice might not be adequate to help this project manager. Waiting to assess the impact on the project is reactive; a project manager should be proactive. Gaining agreement of all the stakeholders on the project scope is also not the best choice. It would be helpful, but does not specifically address the issue in this situation. By contacting the PMO, the project manager can access the knowledge of many project managers, historical information from many projects, and the assistance of someone whose job it is to help.

13. Answer B

Explanation Connecting the project to the sponsor's objectives might be a good idea, but it does not address the issue of obtaining support throughout the performing organization. Neither ensuring there is a communications management plan nor confirming that the management plan includes the management of team members directly addresses the need to obtain support for the project. Correlating the need for the project to the organization's strategic plan is the best way to gain support for the project.

14. Answer C

Explanation Because orders are numerous and of short duration, this situation is a recurring process, not a project.

15. Answer B

Explanation Active listening, negotiating, and political awareness are all important interpersonal and team skills a project manager should strive to develop.

16. Answer B

Explanation Manufacturing a product is an ongoing process; it is operational work, not project work. Therefore, the manufacturing team would have no reason to create a project charter and would have difficulty doing so if they tried, because of the ongoing nature of the work. If the question referred to a team developing a new product, however, that would qualify as a project.

17. Answer C

Explanation Because the question talks about priorities between projects, this cannot be the role of the project manager, the project management team, or the project team. Determining priorities between projects is a role of the PMO.

18. Answer C

Explanation A project is a temporary endeavor with a beginning and an end, a program is a group of related projects, and a portfolio is a group of projects and programs related to a specific strategic organizational objective. Remember to use the process of elimination, ruling out any answer that is not completely correct.

19. Answer C

Explanation Operational work is that which is ongoing and frequently requires performing job functions repeatedly to sustain an organization.

Project Management Framework

T W O

20. Answer A

Explanation Notice that this question asks about the use of a tool of project management. Many people can learn from a book what a lessons learned register is, but questions like this can more readily be answered if you actually use the tool and know from experience its value. Ask yourself about the other tools of project management. Why are they beneficial? The best uses of lessons learned are as continuous improvement within the current project, historical records for future projects, and improving the organization's processes and systems. There are other tools that are better for accomplishing the things listed in the other choices.

21. Answer D

Explanation The best answer is stakeholders, as their input is critical for collecting all the lessons learned on each project. The term "stakeholders" includes all the groups mentioned in the other answer options.

22. Answer C

Explanation Remember the definition of a project: temporary and unique. Operations and maintenance are considered ongoing activities, not temporary. Therefore, such work is not considered a project or part of a project.

23. Answer B

Explanation Did you select "a group of unrelated projects managed in a coordinated way"? If so, you missed the word "unrelated." Programs are groups of related projects.

24. Answer B

Explanation Lessons learned help to avoid future pitfalls and use the good ideas of past projects. This leads to improvements in future projects. The organization benefits from creating a lessons learned repository.