CHAPTER 1

Understanding foundational concepts of project management

This chapter describes foundational concepts of the PMBOK® Guide. It will introduce you to the purpose and content of the PMBOK® Guide, and provide some definitions of projects, project management, program management, portfolio management, organizational project management, operations management, organizational strategy, business value, and the project life cycle. All of these foundational concepts are important to ensure that you understand the terminology used by the PMBOK® Guide, which also appears in the PMP® exam. It is important that you take time to fully understand these foundational concepts, because they underpin many of the processes, tools, and techniques that come later in the book.

EXAM TIP

Remember that the PMP® exam is testing a lot of elements, including your understanding of the PMBOK® Guide terminology and concepts. You may come across questions that have an answer that is what you would actually call something in real life but it is not how the PMBOK® Guide would refer to it. In this instance, always answer according to the PMBOK® Guide. Also, pay close attention to not only the terms but also the various inputs and outputs.

In this chapter, you will learn how to do the following:

■ Introduce and outline the key foundational terms, purpose, and contents of the PMBOK® Guide.

■ Understand the differences and interrelationships between project, program, and portfolio management.

■ Understand the relationship between organizational project management, operations management, and organizational strategy.
Understand the role that business value and strategic planning have in project management.

Define organizational process assets and their benefit to project management.

Define enterprise environmental factors and the ways in which they can assist and constrain a project.

Define and understand the characteristics of the project life cycle, including project phases.

The purpose of the PMBOK® Guide

MORE INFO  THE PMBOK® GUIDE

You can read more about the purpose of the PMBOK® Guide, 5th edition, in the guide itself, in Chapter 1, section 1.1.

The full title of the PMBOK® Guide is A Guide to the Project Management Body of Knowledge. If you break that down into its component parts, you can get an understanding of what sort of document it is.

First of all, it is a guide. This means that it is not a prescriptive instruction manual that must be followed to the letter, and individuals and organizations can, and do, choose to only implement appropriate portions of the PMBOK® Guide. It presents the information as a guide for you to use when and if it is useful. Obviously, it is a guide to the profession of project management. Because the profession of project management is both relatively young and also very wide in its application, any book purporting to be about it is necessarily going to be both iterative and also broad in the information contained within it. This is the fifth edition of the PMBOK® Guide and represents a major change from previous versions, with an extra knowledge area and more in-depth coverage of foundation topics. The development and updating of the PMBOK® Guide is an ongoing process, with an updated edition being released every three to four years. Make sure you have access to the latest copy of the PMBOK® Guide. It is also aligned with ISO 21500:2012.

EXAM TIP

ISO 21500:2012 is an international standard for project management developed by the International Organization for Standardization (the initials ISO come from the French way of saying this). It provides guidance and a high-level description of concepts and processes that are considered to form good or best practice in the profession of project management.

Finally, as a body of knowledge, it contains what is considered to be a fairly complete set of knowledge about the profession of project management. Many professions, including civil
engineering, software engineering, contracting, and even massage therapy have bodies of knowledge associated with them.

Overall, the PMBOK® Guide presents what is generally recognized to be good practice in the profession of project management. This means that the processes, tools, and techniques that it presents are useful to most projects most of the time. It is up to the organization or the project management team to determine which, if any, of the processes, tools, or techniques are useful for any project they are working on. This process of selecting only those processes, tools, and techniques that actually provide benefit when managing your projects is called tailoring.

**Real world**

The PMBOK® Guide is not a project management methodology. It is a framework document containing the collection of what is considered good project management practice for projects of any size, complexity, and industry. In order to build a project management methodology, you are directed to take from the PMBOK® Guide only those processes, tools, and techniques that are appropriate and add value to your project via the process of tailoring.

In addition to representing a robust body of knowledge, the PMBOK® Guide also presents standardized terminology. This means that there is generally a single word or phrase to define and describe each element of project management. It allows project managers and project team members within the same organization, and between organizations, to communicate effectively.

**Real world**

The benefit of a standardized terminology cannot be underestimated. I have been in many situations with people from differing organizations who make simple mistakes because they use different words for the same thing. I remember once I asked a contract manager on my team for the project schedule, and he sent me the schedule of materials. After three requests and increasing confusion on both sides, we finally figured out that I was requesting what he referred to as the project timeframe. On another occasion, I was assisting a firm that was growing rapidly and recruiting project managers every week. The biggest challenge they faced was the different terminology all these experienced project managers used. We worked on developing a common organization-wide project management vocabulary to improve communication between all the project managers and project team members.
Of course, your main interest in the PMBOK® Guide is that it is a very useful text upon which to base your study for the Project Management Professional (PMP®) certification. Passing the PMP® examination requires knowledge of the entire contents of the PMBOK® Guide, as well as knowing the “Project Management Institute Code of Ethics and Professional Conduct.”

**EXAM TIP**

Even if you have a photographic memory and could remember every page of the PMBOK® Guide, you would not necessarily score 100 percent on the PMP® examination because the PMP® examination is based upon the results of a role delineation study about what professional attributes a project manager should have. The PMBOK® Guide presents a very useful text upon which to base your study. This is because the contents of the PMBOK® Guide are built upon the knowledge of many disciplines, and often a single phrase or sentence in the PMBOK® Guide can refer to an entire other subject area. That is why simply studying the PMBOK® Guide is not the best approach to preparing to sit the PMP® examination. This book will not only introduce you to the entire contents of the PMBOK® Guide but also present a lot of other information so you are prepared to pass the examination.

**Quick check**

1. How should you use the PMBOK® Guide in your projects?
2. Apart from offering a collection of good practices in project management, what other main benefit does the PMBOK® Guide provide?

**Quick check answers**

1. By selecting from it only those processes, tools, and techniques that are appropriate for your projects based on size, complexity, and industry.
2. It provides a standardized terminology, or lexicon, for the profession of project management.

**What is a project, a program, and a portfolio?**

**MORE INFO PROJECT, PROGRAM, PORTFOLIO**

You can read more about the definition of a project, a program, and a portfolio in the PMBOK® Guide, 5th edition, in Chapter 1, section 1.2.
It may seem straightforward to define exactly what a *project* is, but it is important that you know how the PMBOK® Guide defines one. There are several key elements that separate project work from ongoing or operational work.

The first and most important element of a project is that it has a defined start and end, making it a temporary endeavor. On the other hand, operational, or ongoing, work is ongoing and repetitive.

A project also delivers something unique, something that hasn’t been done before. Ongoing work is repetitive and delivers the same thing every day or every year.

Finally, a project delivers a product, service, or result. This allows projects to be used to deliver a range of deliverables in many industries, whether they are based on goods or services.

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**EXAM TIP**

There are only two types of work in the world, according to the PMBOK® Guide. All work is either operational work or project work. If it is operational work, then it is repetitive and ongoing. If it is project work, then it has a defined start, middle, and end and delivers a product, service, or result.

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**Real world**

You may find a degree of overlap between project work and operational work. There are certainly some projects that bear a striking resemblance to each other and perhaps could be construed as ongoing work. It is the unique aspect of each—and that it is done slightly differently, in a different location, to produce a slightly different product, service, or result—that makes it a project.

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A *portfolio* of projects includes all the projects, whether interdependent or not, that an organization is undertaking. They are only connected by their common goal of delivering the organization’s strategic goals.

A *program* of projects describes projects that have some sort of interdependency between them. They may all be part of a larger deliverable; for example, you could have several projects, each of which makes a different part of a new aircraft, but the final deliverable depends on managing the projects together as a program. The projects may also share a common goal, and the program manager needs to monitor and resolve any actual or potential conflicts in the pursuit of those goals.

A project can be part of a program and part of a portfolio. Figure 1-1 shows that all programs are part of a portfolio, but that projects can either be directly part of a portfolio or part of a program.
FIGURE 1-1 A portfolio encompasses all projects and programs within an organization.

Project, program, and portfolio management are separate yet interrelated elements of the profession of project management. The combination of the project management, program management, and portfolio management disciplines is viewed as integral and necessary to deliver the organizational strategy and, therefore, any action undertaken in any of the three elements should always align with the organization’s strategy.

Portfolio management ensures that all projects selected to be completed by the organization align with the organizational strategy. Portfolio management has an organizational scope that reflects the organizational strategy. Often projects or programs are grouped together into a single portfolio that reflects a specific strategy.

EXAM TIP

The PMBOK® Guide places a great deal of emphasis on the alignment of organizational strategy and the profession of project management as a strategic enabler for delivering the strategy. Always assume that the default position in a question is that an organization has a strategy and is using project management to achieve that strategy.

Program management focuses on managing interdependencies within projects with a common goal or capability. Program managers are skilled at forecasting, anticipating, and dealing with real or perceived conflict between projects in the same program. All programs have projects, but not all projects are part of programs.
EXAM TIP
An interesting distinction made by the PMBOK® Guide is that if the relationship between separate projects is based upon having a shared client or seller, or shared technology or resources, then the projects should be managed as a portfolio rather than a program.

The project management office (PMO) is the part of the organization responsible for project management excellence. It provides support for the project manager, which can mean many things, depending on the level of organizational project management maturity. A project management office can simply be a place where a project management methodology is developed and stored, or at the other end of the spectrum, it can be where all the project managers are located, a place that provides common reporting and manages shared resources and it is responsible for portfolio, program, and project management across the entire organization.

The PMBOK® Guide defines three main types of project management office, differentiated by the level of control and influence they have, as shown in Figure 1-2. The supportive project management office provides templates and basic processes and captures lesson learned. The controlling project management office may take responsibility for development and implementation of a project management methodology and provide project governance as well. The directive project management office takes direct control of management of projects within the organization.

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<thead>
<tr>
<th>Supportive</th>
<th>Controlling</th>
<th>Directive</th>
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<tr>
<td>Low</td>
<td>Level of control and influence</td>
<td>High</td>
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FIGURE 1-2 The types of project management office (PMO) can be shown on a spectrum from supportive to directive.

The type of project management office an organization should have also depends upon the level of organizational project management maturity the organization has attained. Organizational project management maturity is a way of assessing where an organization is currently with its level of sophistication and maturity around project management processes, tools, templates, and methodology, and then assessing where they should be. Organizations handling large and complex projects should be at a higher level of project management maturity than organizations managing small and simple projects. Organizations with a high level of project management maturity should have a more directive project management office.

EXAM TIP
If you find a reference to OPM3 in the exam, it is referring to the Organizational Project Management Maturity Model, which is a tool from the Project Management Institute (PMI) for assessing an organization’s level of portfolio, program, and project management maturity.
Quick check

1. What are the three key elements that distinguish project work from ongoing work?
2. What are the key differences between a program and a portfolio of projects?
3. How would you describe the main differences between project, program, and portfolio management?
4. What function would a project management office play in an organization with a high level of project management maturity?

Quick check answers

1. First, a project has a temporal element defining a start and an end, making it temporary rather than ongoing. Second, it delivers something unique and never done before. Finally, it involves delivery of a product, service, or result.

2. In a program of projects the projects share an interdependency, whereas in a portfolio of projects the projects are only united by the fact that they are all being completed by the same organization.

3. Portfolio management is the top-level selection process of projects to ensure that they deliver the organization's strategy. A program of projects contains projects that share a common goal or capability, and individual projects are focused on delivering a product, service, or result that will contribute to achievement of the organizational strategy. Remember that all programs have projects, but not all projects are part of programs.

4. An organization with a high level of project management maturity will use a directive project management office to take control of the way in which all projects are selected, managed, reported on, and communicated about within the organization.

What is project management?

MORE INFO PROJECT MANAGEMENT
You can read more about the definition of project management in the PMBOK® Guide, 5th edition, in Chapter 1, section 1.3.

Project management takes the tools, techniques, and skills contained in the PMBOK® Guide and applies them to the project to deliver the product, service, or result. It is a proactive, rather than a reactive, discipline.
EXAM TIP
Being proactive is a key point about professional project management. If there is any question in the exam that gives you the option to be proactive, it is probably the correct answer.

The PMBOK® Guide, 5th edition, contains a description of 47 project management process in 10 knowledge areas. These 47 processes are placed within five process groups of initiating, planning, executing, monitoring and controlling, and closing to describe the stage in the project in which they are best used. Managing a project means taking the appropriate process and the tools and techniques associated with it and applying them appropriately to the work that needs to be done. Project management, then, is simply the application of any of the PMBOK® Guide knowledge areas with the goal of delivering a product, service, or result.

One of the tasks of project management is the balancing of competing constraints on a project. These constraints can be scope, quality, schedule, budget or cost, resources, and risk. If any one of these constraints changes, it will likely place additional pressure on one or more of the other constraints. For example, if you have to deliver a project in a shorter time period, you may need additional budget to complete the work, and your known risks may increase while quality decreases.

EXAM TIP
You should know that one important aspect of project management is about recognizing and navigating your way through competing constraints on a project. This is evident in planning a project and also when considering a request for a change to a project, where a request for more time may impact schedule, risk, or quality.

An important aspect of project management is that, generally speaking, you cannot know everything there is to know about a project at the outset and, thus, project management is highly iterative. This means that you may be able to accurately define the work to be done for the next few weeks, but you can’t plan as well beyond that because there is more uncertainty. So you plan in an iterative manner, meaning that you plan many times, each time with more information. Progressive elaboration is an iterative process that acknowledges that you will know more the more you do. For example, at the beginning of a software project you may know the general expected outcome and the first steps on the path to delivering it, but as you move along in the project you become more aware of the magnitude of the work and can plan the project schedule, budget, and risks better.

Rolling wave planning is another type of iterative planning where you plan in detail the next appropriate time period and, as you keep progressing throughout a project, you keep planning that same length of time in detail.
EXAM TIP
If you find the term “progressive elaboration” or “rolling wave planning” in the examination, it is referring to the concept of knowing more about the project the more work you do.

Real world
It is important to let your project stakeholders know that projects are generally iterative and subject to progressive elaboration, to counter the expectation that you can plan everything at the beginning of a project.

Quick check
1. How would project management differ from managing an ongoing business activity?
2. How does iterative planning differ from progressive elaboration of a project?

Quick check answers
1. Project management uses the process, tools, and techniques of the PMBOK® Guide, is subject to multiple interdependent constraints, and is subject to iterations and progressive elaboration. It is also a temporary endeavor with a defined end. Ongoing operational business activity may or may not be subject to interdependent constraints, and it does not have a defined end.

2. You can deliberately choose to plan iteratively even with a known scope of work. You can decide to focus your detailed planning activities on the immediate future and revisit the planning stages as the project progresses. Progressive elaboration, or rolling wave planning, implies that not everything is known about a project and more will become known as the project moves along.

Project management, operations management, and organizational strategy

MORE INFO
Project management, operations management, and organizational strategy
You can read more about project management, operations management, and organizational strategy in the PMBOK® Guide, 5th edition, in Chapter 1, section 1.5.
As you already know, project management is all about delivering a product, service, or result. After this product, service, or result has been delivered as part of the entire project work or simply as part of a project phase, it normally gets handed over to operational management. Operational management differs from project management in that it is a permanent part of any organization and is focused on the ongoing activities of the business, whereas project management is focused on the temporary activities of project delivery. Operational management also provides the overall strategy for the organization, which is used to help select the right projects.

Obviously, each area intersects at the point where the deliverable is handed over. At this point, the normal operations of the organization may need to change or adapt to accommodate the deliverable. This is one role of operational managers.

**EXAM TIP**

For the exam, you need to know the difference between operational work and project work, and that operational management often takes responsibility for the deliverable for the project when it has been completed.

**Real world**

An important tip for any project manager is to include the end users responsible for use and maintenance of any deliverable in the list of stakeholders to be consulted. They will often have real-world experience in the use and ongoing maintenance of the deliverable that perhaps the people who design the deliverable don’t.

The *business value* is the sum of all tangible and intangible values in the organization. It can include all capital assets of an organization as well as intangible elements such as brand recognition. Organizations strive to increase their business value, and they can use project management to help them do this. The successful creation of business value is enhanced by having a clear strategy and using the strategy to select projects that deliver appropriate business value. In this way, project management can contribute to the business value of an organization.

More specifically, portfolio management selects the projects that align with organizational strategy, program management manages interconnected projects, and project management delivers unique products, service, and results, all of which contribute to greater business value. The creation of business value is the final link in the process whereby project management can be viewed as a key strategic enabler for a business.
Real world
It is important that project managers have a sound understanding of operational management objectives so they understand why their projects are important and how they fit into the overall organization strategy and add business value. In my own career I have found that a business education has helped my project management and, conversely, my project management experience has helped my operational management efforts.

Quick check
1. Describe the two main points at which the worlds of operational management and project management intersect.
2. What are the key elements that make up business value?
3. How can project management contribute to the creation of business value?
4. How does portfolio management assist in the creation of business value?

Quick check answers
1. The first point of intersection is that operational management provides the overall organizational strategy that is used to select the right projects. The second main point where the two worlds meet is when operational management takes ownership of any project deliverable.
2. Business value is made up of both the tangible and intangible elements of a business.
3. Project management delivers products, services, or results that add either tangible or intangible business value.
4. Portfolio management focuses on ensuring that any projects selected are aligned with the organizational strategy and that the strategy delivers increased business value.
Organizational influences on project management

MORE INFO  ORGANIZATIONAL INFLUENCES
You can read more about the organizational influences on project management in the PMBOK® Guide, 5th edition, in Chapter 2, section 2.1.

Projects are not completed in a vacuum, devoid of influence by an organization's culture, style, or structure. It is important for a project manager to recognize that each of these elements can positively or negatively influence the outcome of a project. Different organizations have different cultures. These cultures can be observed by noting such things as the values, beliefs, and expectations held by senior management; any relevant policies and procedures that the organization has; its motivation and reward systems; its tolerance toward risk; its attitudes toward hierarchy and power and authority relationships; and such things as the expected work and work hours. The organizational culture is usually established by the founders of the organization, developed by the current employees, and perpetuated through its ongoing recruitment policies.

REAL WORLD

Often in the real world you will find organizations that do the same work technically but have completely different organizational cultures. I know of several people who have left one organization to go to a competitor, only to return within a few months because they didn't like the particular organizational culture.

In addition to the internal organizational culture founded by recruitment policies and current employees, an organization's culture can also be influenced by the broader cultural environment in which it operates. This includes factors such as employment market conditions, level of competition, and external political influences. It is up to the project manager to make sure he or she assesses and understands how these cultural factors may impact the project. This creates challenges for the project manager, who must be aware of issues around multiculturalism, particularly with the increase of globalization and the use of project team members from different countries.

EXAM TIP

Both the organization's culture and its structure are enterprise environmental factors because they sit outside of the direct realm of the project and can assist or constrain the project.
So far this chapter has looked at the impact of organizational culture upon projects. Other important aspects of organizational influence upon projects are organizational process assets and enterprise environmental factors.

**Organizational process assets**, as the name suggests, are any existing plans, procedures, policies, templates, and knowledge bases that the organization owns that can be used to assist the project. Organizational process assets appear as inputs into most of the 47 planning processes in the PMBOK® Guide. Specific examples of organizational process assets include the project management methodology, any blank templates, any change control processes and procedures, any financial control reporting requirements, any defined communication methods, any standardized approach to risk management the organization has, and any project closure guidelines, requirements, or checklists.

**Enterprise environmental factors** are always external to the project but not necessarily external to the organization; they are just not under the control of the project team. Enterprise environmental factors feature as inputs into most of the 47 planning processes in the PMBOK® Guide. Specific examples of enterprise environmental factors include the organizational culture and structure, any relevant government or industry standards that can affect the project, any personnel administration requirements, any external marketplace conditions, the stakeholder risk tolerances, the external political climate, and any project management information systems, including any software owned by the organization. Many people assume that project management software is an organizational process asset; however, it is generally considered to be an enterprise environmental factor because it is usually licensed rather than owned.

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**Real world**

The most common form of organizational process asset that most project managers encounter is the project management methodology that an organization has. A project management methodology itself can mean many things. It can be as simple as a range of blank templates available to the project manager, or at the other end of the spectrum it can be a fully defined set of processes, procedures, templates, and databases that must be used for all projects.

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**EXAM TIP**

A general rule of thumb for remembering the difference between organizational process assets and enterprise environmental factors is that, generally speaking, organizational process assets can be used to assist a project, whereas enterprise environmental factors will often constrain a project. Additionally, as the name suggests, with organizational process assets the organization must own the assets.
Quick check

1. What are some of the main defining characteristics of an organization’s culture?
2. Why should a project manager be aware of the organizational culture?
3. How is an organization’s culture established and perpetuated?

Quick check answers

1. The main defining characteristics of an organizational culture can be observed in the organization’s visions and values, beliefs, policies, procedures, reward systems, tolerance for risk, work ethic, and view of authority relationships.

2. A project manager needs to be aware of the overall organizational culture and specific elements within it because these will affect the projects he or she is working on, and it is best to leverage those parts of the organizational culture that contribute to project success and mitigate those parts of the organizational culture that may increase the chances of project failure.

3. The culture of an organization generally reflects the values of its founding members. It is then perpetuated and reproduced by both senior managers and leaders, and the organization’s recruitment policies.

The project life cycle

MORE INFO  PROJECT LIFE CYCLE
You can read more about the project life cycle in the PMBOK® Guide, 5th edition, in Chapter 2, section 2.4.

The project life cycle is central to the PMBOK® Guide. It forms the basis for the five PMBOK® Guide process groups. The project life cycle provides a framework and also describes the generally sequential activities undertaken in any project, beginning with the process of starting or initiating the project, organizing and preparing to do the work of the project, then carrying out the defined project work, and finally recognizing the closeout of a project.

The concept of the project life cycle moving from a project’s beginnings to its closure can be applied to an entire project or to the different phases within the project. Project phases are best used when there is a clear and defining milestone between activities. For example, a project may have a design phase that requires signoff on the design (which would be the milestone) before the project is allowed to proceed to the implementation phase. Project phases can be performed in a linear, sequential fashion, with successive phases having to wait until a predecessor phase is complete before proceeding. Alternatively, phases can also overlap, with the successive phase able to start prior to the completion of the predecessor phase.
A project management methodology takes an approach based on the project life cycle and perhaps its phases, and describes the processes that will be followed and the tools and templates to be used. Most project management methodologies are built upon the concept of the project life cycle and have different procedures that reflect different parts of the project life cycle.

**Real world**

There are many different types of project management methodologies in existence. They range from the highly iterative agile methodologies used in information technology projects to the more predictive methodologies also known as waterfall methodologies, where there is a clear linear progression from start-up through to closure of a project. In developing an appropriate project management methodology for an organization, consideration must be given to the type of projects, the size of projects, the organizational culture, the timeframe for project delivery, and the maturity of the organization. The development of a project management methodology is not a one-size-fits-all proposition. In fact, a good methodology will always be flexible enough to accommodate different projects.

The concept of the project life cycle incorporating the initiation, planning, execution, and closing phases of the project is based upon the Shewhart and Deming *Plan-Do-Check-Act (PDCA)* cycle. This cycle starts with making a plan, then doing what you planned, then checking that what you are doing is what you planned, then acting if you find any variance between what you are doing and what you planned to do, and then going back and planning again. Figure 1-3 shows the Shewhart and Deming Plan-Do-Check-Act (PDCA) cycle.

**FIGURE 1-3** The Shewhart and Deming Plan-Do-Check-Act cycle shows the iterative nature of project management.
This cycle forms the basis of the initiating, planning (Plan), executing (Do), monitoring and controlling (Check and Act), and closing process groups of the PMBOK® Guide. Figure 1-4 shows the PMBOK® Guide process groups.

**FIGURE 1-4** The PMBOK® Guide process groups can be shown as an iterative cycle of activity.

**EXAM TIP**
Take care to read any questions about life cycles to determine whether they are referring to the project life cycle or the product life cycle. The project life cycle refers to the project from initiation to closing. The product life cycle refers to the design, manufacturing, use, and obsolescence of the product. The product life cycle can be many years longer than the project life cycle.

The five PMBOK® Guide process groups describe work to be done in each of the 10 specific knowledge areas. Table 1-1 shows how the five process groups and the 10 knowledge areas from the PMBOK® Guide overlap.

**TABLE 1-1** The PMBOK® Guide process groups and knowledge areas

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<tr>
<th></th>
<th>Initiating processes</th>
<th>Planning processes</th>
<th>Executing processes</th>
<th>Monitoring and Controlling processes</th>
<th>Closing processes</th>
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<tr>
<td><strong>Project Integration management</strong></td>
<td>Develop Project Charter</td>
<td>Develop Project Management Plan</td>
<td>Direct and Manage Project Work</td>
<td>Monitor and Control Project Work</td>
<td>Close Project or Phase</td>
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<td><strong>Project Scope management</strong></td>
<td>Plan Scope Management Collect Requirements Define Scope Create WBS</td>
<td>Validate Scope Control Scope</td>
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<td>Project Time management</td>
<td>Initiating processes</td>
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<td>Plan Schedule</td>
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<td>Sequence Activities</td>
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<td>Assurance</td>
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<td>Plan Risk Responses</td>
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The project life cycle

CHAPTER 1

EXAM TIP

Try memorizing this table to help you remember the sequence of processes in the exam. An easy way to remember the knowledge areas is to use a mnemonic. My favorite, after you remove the word Project from each one, is: In Summer The Cruel Queen Hates Cold Runny Porridge Snacks. Notice that the first letter of each word in the sentence links to the first letter in each of the knowledge areas. Try making up your own mnemonic. If you are a numbers sort of person, try remembering the following number sequence 2 - 24 - 8 - 11 - 2. Those numbers are the number of processes in the Initiating, Planning, Executing, Monitoring and Controlling, and Closing process groups, respectively. Another set of numbers is 6 - 6 - 7 - 4 - 3 - 4 - 3 - 6 - 4 - 4, which are the numbers of processes in each knowledge area from Integration Management through Stakeholder Management.

Quick check

1. What sort of projects benefit from a phased approach?
2. What are the four parts of the Shewhart and Deming cycle?
3. What are the five PMBOK® Guide process groups?

Quick check answers

1. Projects that have well-defined milestones are suitable for a phased approach.
2. The four parts are Plan, Do, Check, and Act.
3. The five PMBOK® Guide process groups are Initiating, Planning, Executing, Monitoring and Controlling, and Closing a project.
Exercises

The answers for these exercises are located in the “Answers” section at the end of this chapter.

1. Consider the following scenarios. For each scenario, decide whether it is a project, a program, a portfolio, or ongoing work.

A. The implementation of a new piece of software to run an organization’s payroll
B. The construction of a new house
C. The development of a new housing subdivision
D. Filming the first movie of a movie trilogy
E. Increasing sales from the previous year
F. The design phase of a new piece of software
G. The range of projects an organization is undertaking to increase market share
H. The installation of new servers as part of a major upgrade to an organization’s software and hardware systems
I. A new marketing campaign designed to bring in more business
J. The development of a new product that will increase operational profit
K. Several different pieces of software being developed that use the same developers
L. All the new house projects being undertaken by a construction company
2. Practice filling out the following blank table with process groups, knowledge areas, and processes.

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Chapter summary

- This chapter introduced you to many foundational concepts of the PMBOK® Guide. It began by looking at the purpose and contents of the PMBOK® Guide and then went on to define a project and the unique characteristics that differentiate projects from ongoing or repetitive work. It is important that you understand how project work is different from ongoing or operational work.

- The chapter then looked at the differences between and the relationships among project management, program management, and portfolio management. The link to portfolio management also includes consideration of the link between projects and strategic planning and how project management can be a strategic enabler for an organization. Ultimately, the strategic decisions made and the way in which project management can support them will deliver increased business value.

- The role of the project management office (PMO) in any organization is an important one and reflects the level of organizational project management maturity that the organization has attained. The primary function of a PMO and whether it is supportive, controlling, or directive is a direct reflection of the level of maturity of the organization.

- The role of organizational process assets and enterprise environmental factors in the success or failure of project management is important. Additionally, organizational process assets and enterprise environmental factors feature in many of the 47 processes of the PMBOK® Guide as inputs.

- The concept of the project life cycle, which begins with the start of a project and moves through the organization, preparation, and execution of the planned project work, and finally the closing of the project, is a central concept to many of the processes and knowledge areas in the PMBOK® Guide. The concept of the project life cycle can also be applied to separate project phases.

Chapter review

Test your knowledge of the information in Chapter 1 by answering these questions. The answers to these questions, and the explanations of why each answer choice is correct or incorrect, are located in the “Answers” section at the end of this chapter.

1. What is the primary role of the portfolio manager?
   A. To deliver the unique product, service, or result of the project
   B. To provide project governance and sponsorship
   C. To assess all potential projects against known organizational strategic goals
   D. To directly manage people assigned to several different projects
2. What is the primary purpose of the PMBOK® Guide?
   A. To provide a flexible methodology for all projects, no matter how large or small
   B. To identify a project management framework based on what is generally recognized as good practice
   C. To define a prescriptive approach to managing projects
   D. To present all the known project management information in a concise manner

3. What is the best description of rolling wave planning?
   A. Project management planning activities that become more detailed as you move through the project
   B. Only planning the first phase of a project
   C. Planning the entire project before starting execution
   D. Only planning the next phase in a project

4. What is the relationship between successful projects and an organization's strategic goals?
   A. There is no relationship between the two, because they are separate and distinct parts of an organization.
   B. The successful delivery of projects can be a strategic enabler and deliver strategic goals.
   C. The project selection methodology will determine what an organization's strategic goals are.
   D. Projects deliver programs, which in turn deliver portfolios, which in turn deliver strategy.

5. What is the best role for a project management office in an organization with a low level of project management maturity?
   A. Directive
   B. Controlling
   C. Supportive
   D. Enabling

6. What is the name for a group of related projects managed in a coordinated way to obtain a synergy not found by managing them individually?
   A. Multi projects
   B. Portfolio
   C. Program
   D. Strategy
7. The PMBOK® Guide process groups are based upon which life cycle model?
   A. The Check-Plan-Do-Act cycle
   B. The Plan-Do-Check-Act cycle
   C. The Plan-Check-Act-Do cycle
   D. The Do-Check-Act-Plan cycle

8. How many processes are there in the Risk Management knowledge area?
   A. Three
   B. Four
   C. Five
   D. Six

9. How many processes are there in the Monitoring and Controlling process group?
   A. 9
   B. 10
   C. 11
   D. 12

10. Which knowledge area does not have a Monitoring and Controlling process?
    A. Cost Management
    B. Initiating
    C. Human Resource Management
    D. Closing
This section contains the answers to the questions for the “Exercises” and “Chapter review” sections in this chapter.

Exercises

1. Consider the following scenarios. For each scenario, decide whether it is a project, a program, a portfolio, or ongoing work.

   A. The implementation of a new piece of software to run an organization’s payroll
      This is an example of a project.

   B. The construction of a new house
      This is an example of a project.

   C. The development of a new housing subdivision
      This would generally be viewed as either a very large project or a program. This demonstrates that there is a grey area between projects, programs, and portfolios.

   D. Filming the first movie of a movie trilogy
      The first movie will be viewed as a project; the entire trilogy would be viewed as a program.

   E. Increasing sales from the previous year
      This is an example of ongoing work.

   F. The design phase of a new piece of software
      Because this is a phase, it would best be viewed as part of a program.

   G. The range of projects an organization is undertaking to increase market share
      This is an example of a program with a common goal of increasing market share.

   H. The installation of new servers as part of a major upgrade to an organization’s software and hardware systems
      This is an example of a project that is part of a broader program.

   I. A new marketing campaign designed to bring in more business
      Marketing is generally considered to be an ongoing activity rather than a project.
J. The development of a new product that will increase operational profit
   This is an example of a project that will be handed over to the operations side of
   the organization.

K. Several different pieces of software being developed that use the same developers
   Merely using the same developers doesn’t mean that these projects are part of a
   program. Instead, they should be considered as individual projects that are part of
   a portfolio.

L. All the new house projects being undertaken by a construction company
   This is an example of a portfolio of projects.

2. Practice filling out the following blank table with process groups, knowledge areas,
   and processes.

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<th>The PMBOK® Guide process groups</th>
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The PMBOK® Guide process groups

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<th>Executing processes</th>
<th>Monitoring and Controlling processes</th>
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<td>▪ Control Stakeholder Engagement</td>
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Chapter review

1. **Correct answer: C**
   - **Incorrect:** The project manager takes responsibility for delivering the product, service, or result of a project.
   - **Incorrect:** It may be that on occasion a portfolio manager may provide some governance and sponsorship advice, but it is not the portfolio manager’s primary role.
   - **Correct:** The portfolio manager operates at a strategic level within the organization.
   - **Incorrect:** It would be the program manager or even a functional manager who would take responsibility for managing people on several projects, depending on the type of organizational structure in place.

2. **Correct Answer: B**
   - **Incorrect:** The PMBOK® Guide does not provide a methodology. You are able to build a methodology from the contents of the PMBOK® Guide via the process of tailoring.
   - **Correct:** The PMBOK® Guide collects and presents what is generally considered to be good practice across a wide range of industries and presents this information as a framework rather than a methodology.
   - **Incorrect:** The PMBOK® Guide emphasizes in several places that, through the process of tailoring, you should only take from the PMBOK® Guide what is appropriate to your project.
   - **Incorrect:** The PMBOK® Guide does not claim to present all known project management information, only that which is generally considered good practice across a wide range of industries.

3. **Correct Answer: A**
   - **Correct:** Rolling wave planning acknowledges that you will iteratively plan the project as you move along the project life cycle.
   - **Incorrect:** Only planning the first phase of a project is typical for phased projects, because there may be an important milestone between phases that prevents further planning.
   - **Incorrect:** Planning the entire project before starting is a very rare occurrence and probably only suitable for small, easily defined projects.
   - **Incorrect:** Iteratively planning a phase of a project is not an example of rolling wave planning.
4. **Correct Answer: B**
   - **Incorrect:** There is a strong relationship between successful projects and an organization achieving its strategic goals.
   - **Correct:** By selecting projects that deliver strategic goals and then successfully delivering these projects, an organization can achieve its strategic goals.
   - **Incorrect:** It is the organization’s strategy that dictates which projects get selected.
   - **Incorrect:** There is not always a direct linear connection between projects, programs, portfolios, and strategy.

5. **Correct answer: C**
   - **Incorrect:** Directive project management offices are generally best in an organization with a high level of project management maturity.
   - **Incorrect:** Controlling project management offices are generally a sign of an organization improving its organizational project management maturity.
   - **Correct:** Supportive project management offices are generally a sign of a low level of project management maturity, because they do not support a lot of complexity.
   - **Incorrect:** This is a made-up term and is not from the PMBOK® Guide.

6. **Correct Answer: C**
   - **Incorrect:** Multi projects is a made-up term that does not describe a coordinated approach to interrelated projects.
   - **Incorrect:** Portfolios are groups of projects related only by the fact that they are being performed by a single organization.
   - **Correct:** A program is a group of projects related in some way and that are managed to achieve benefits not gained by managing them independently.
   - **Incorrect:** Strategy is the organization’s future direction and how it is going to achieve this.

7. **Correct Answer: B**
   - **Incorrect:** The correct order requires planning to come first and checking to come after doing.
   - **Correct:** The Plan-Do-Check-Act cycle by Shewhart and Deming describes an iterative approach to management.
   - **Incorrect:** The correct order requires checking to come after doing and before acting.
   - **Incorrect:** The correct order requires planning to come first.
8. **Correct Answer: D**
   
   A. **Incorrect:** There are six processes, not three, in the Risk Management knowledge area.
   
   B. **Incorrect:** There are six processes, not four, in the Risk Management knowledge area.
   
   C. **Incorrect:** There are six processes, not five, in the Risk Management knowledge area.
   
   D. **Correct:** The six processes in the Risk Management knowledge area are Plan Risk Management, Identify Risks, Perform Qualitative Risk Analysis, Perform Quantitative Risk Analysis, Plan Risk Responses, and Control Risks.

9. **Correct Answer: C**
   
   A. **Incorrect:** There are 11 processes, not 9, in the Monitoring and Controlling process group.
   
   B. **Incorrect:** There are 11 processes, not 10, in the Monitoring and Controlling process group.
   
   C. **Correct:** The 11 processes in the Monitoring and Controlling process group are Monitor and Control Project Work, Perform Integrated Change Control, Validate Scope, Control Scope, Control Schedule, Control Costs, Control Quality, Control Communications, Control Risks, Control Procurements, and Control Stakeholder Engagement.
   
   D. **Incorrect:** There are 11 processes, not 12, in the Monitoring and Controlling process group.

10. **Correct Answer: C**
    
    A. **Incorrect:** The Cost Management knowledge area has the Control Costs process, which is part of the Monitoring and Controlling process group.
    
    B. **Incorrect:** The Initiating process group is not a knowledge area.
    
    C. **Correct:** The Human Resource Management knowledge area does not have a Monitoring and Controlling process, because it is usually the functional manager who monitors and controls project staff.
    
    D. **Incorrect:** The Closing process group is not a knowledge area.
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