CHAPTER 1
Introduction to Project Management

LEARNING OBJECTIVES—

This chapter presents a broad introduction to project management. After completing this chapter, each student should be able to perform the following:

Core Objectives

- Define a project and project management in your own words, using characteristics that are common to most projects, and describe reasons why more organizations are using project management.
- Describe major activities and deliverables at each project life cycle stage.
- List and define the ten knowledge areas and five process groups of the project management body of knowledge (*PMBOK*®).
- Delineate measures of project success and failure, and reasons for both.
- Contrast predictive or plan-driven and adaptive or change-driven project life cycle approaches.

Behavioral Objectives

- Identify project roles and distinguish key responsibilities for project team members.
- Describe the importance of collaborative effort during the project life cycle.

TEACHING STRATEGIES

- Each chapter starts with learning objectives stated in measurable form as shown above. All chapters will have core objectives, which we believe any student of project management, should master. Chapters also include behavioral and/or technical objectives, which you can also use depending on what you wish to emphasize. If you start with slides that list the objectives, you can emphasize that the students need to be able to accomplish each. We find it helpful to paraphrase a few of them and pick one to ask the students why they think it is included.
- Many students will not have read the first chapter before the first class. Mike's introductory essay on how he successfully climbed Mount Aconcagua (second highest of the Seven Summits after Mount Everest) whereas others died in the attempt is a great attention getter.
- We believe in active learning, so we include at least one breakout session every hour. These are often preceded by an introduction of the material and we pose at least one question or framework for the students to follow. We find a few simple rules are fun for the students and encourage participation. Ask one person to record what the group discussed/decided. Ask a different person to be the group's spokesperson – that way at least two people stay alert. Ask the spokesperson to state what they learned from the exercise and "ditto" does not count. That means they cannot take the easy way out and say another group took their idea. This encourages volunteers to report first and forces teams to think beyond the obvious lesson and think creatively. If there are points we

especially want to emphasize, we will summarize by repeating the points (and crediting the groups who made them) or introducing them if no group mentioned them. The first example breakout session follows.

- Once we briefly cover what a project is (students in discussion will provide examples) and why project management is important, we ask the students to work in groups of four or five with large paper or sections of a chalk or white board. We ask them to describe project success and reasons for each for about 10 minutes. Alternatively, you can ask the students to describe project failure and the causes of it. Either way, you set the expectation that students will actively participate in every class. It also serves as in introduction to the need to develop both soft and hard skills.
- Since some students enjoy software, we mention MS Project early. An easy way to do this is to have the students look at the inside front cover on the left to see what MS Project is used for and where it is covered in the book.
- We like to cover the concept of project life cycles. It is easy to use a house-building project as an example since the walk-through to inspect the project result helps students envision the idea of an approval to pass from one stage to the next.
- The increasing popularity of the agile (adaptive or change-driven) approach to projects creates another opportunity for discussion. You can introduce the extremes of totally plan-driven versus totally adaptive project schedules and ask what type of projects might lend themselves to each and what are some of the advantages and disadvantages of each. This discussion can culminate with the idea that contemporary project management can use parts of both and that we will explore differences throughout the course. An agile icon appears in the margin in many places in the text where either different methods and/or different terminology is used in agile versus plan-driven approaches. The corresponding text is in alternate color to call attention to it. There is also an agile appendix that lists all of the ways agile is emphasized differently than traditional project management and the chapter in which each point is covered in the text.
- An introduction to PMI® is useful. It sets the stage for discussing accreditation, process groups, knowledge areas, and glossary terms. We take this opportunity to encourage students to become student members at a greatly reduced cost.
- Several features of this text help a student to understand *The Guide to the Project management Body of Knowledge*6$5^{th}$ *ed.* (*PMBOK® Guide*). This most current version of the guide is what students will need to completely understand if the wish to challenge a Project Management Professional (PMP) or Certified Associate in Project management (CAPM) certification exam.
    1. You can ask the students to look at the inside front cover of the book on the right side to see both how the *PMBOK® Guide* is structured and exactly where each process is covered in the text.
    2. You can also have the students turn to the back inside cover for a flowchart of the processes in the order in which they should be performed. This *PMBOK® Guide* flowchart emphasizes primarily the things students will need to learn to create the various planning and control documents that will help them plan and manage a project. At the start of each chapter, we include the portion of the flowchart that

is covered in that chapter. One slide is available in the PowerPoint deck of the overall flowchart and several smaller sections of the flowchart are available as slides also so when you introduce topics, you might also want to remind students visually where they are in the planning flow.

3. The *PMBOK® Guide* topics for each chapter are listed in the margins of the second chapter page.
4. Key terms consistent with the *PMBOK® Guide* and numerous other, more detailed PMI publications are listed immediately after the project summary.
5. At the end of each chapter we include study suggestions for the CAPM and PMP exams for the topics covered in the chapter. We also include one assessment section is *PMBOK® Guide* questions. These questions are very similar to CAPM and PMP exam questions. Correct answers to each of these questions along with page references from both this text and the *PMBOK® Guide* appear in this IM.
6. Finally, Appendix A starting on page 439, is a summary of study suggestions for anyone who wishes to take one of the certification exams. We have taught many exam preparation classes both for PMI and for private providers.

- The Project Customer Tradeoff Matrix gives the opportunity to discuss how a project manager can make consistently better decisions by fully understanding the customer. It also is an early opportunity to discuss the challenges of honest, open communications and ethical challenges that can arise. We like to use two different projects in the same industry that made different trade-off decisions as an example. For us it is easy since one of our universities built our on-campus arena with a strong emphasis on cost control and had to play one more season in our old facility while one of the professional teams in town placed so much emphasis on playing their entire season in their new stadium that their overrun cost more than our entire arena!
- Project roles are briefly introduced here, but described in much greater detail in Chapter 3. You may wish to tell your students that even though they are studying to be project managers, it is important for them to understand other roles that need to be accomplished. Project managers spend a large percentage of their time communicating and these roles describe many of the people with whom they will communicate. One further point regarding project roles is that while all projects require planning and control work, when it is done, by whom, and the titles of the people involved often differ on agile vs. traditional projects and to make matters more confusing, often different departments in the same organization are more accepting of agile than others, so titles can vary dramatically.
- We like to use real projects as teaching vehicles. The end of Chapter 1 is a good place to introduce the projects. See specific ideas in example project section below. Appendix D lists many of the project planning and control documents that are in common use. You will likely want to assign a variety of these as assignments. If it is the first time you are using real projects for class, you might start with just the most basic documents such as charter, communication plan, WBS, and schedule. As you gain more experience, you can assign quite a few of these. You can also use ones you do not assign as homework as in-class exercises so you can give the students very rapid feedback. Examples and

instructions for all of these are in the text and grading suggestions appear in the appropriate chapter where each is covered.

- Appendix C has answers to selected problems. In each case, at least one other structurally similar problem is in the text with the answers here in this IM, but not in the text.

SPECIFIC SUGGESTIONS FOR TEACHING PROJECT MANAGEMENT ONLINE

- Don't assume anything specifically, about students that they understand about the course and your instructions.
- Spell out everything even if you repeat some of the instructions. Nothing should be ambiguous. Assignment instructions should be crystal clear. Like Murphy's law, if something can be misunderstood, it will be. Online instructors should be aware of this.
- Develop clear policies and processes for course delivery. To the extent possible, appearance, features, and delivery of the learning management system such as Blackboard should be consistent and clear. While consistency in course delivery is important for quality assurance, each instructor can be creative within the defined boundaries to break monotony and to bring unique perspectives.
- Get acknowledgement from students – confirmation that they understand course policies. Ask them to acknowledge in writing.
- Assignment instructors should be clear and unambiguous. Wherever possible, grading rubric should be shared with the students. Evaluation criteria must be spelled out.
- When assessing student submissions, provide a detailed individual feedback and wherever applicable, provide general feedback to the entire class. Feedback should be based on the assessment criteria defined for each assignment
- Student submissions reflect their understanding of the teaching material and learning modules. They help us to develop an understanding of the effectiveness of our teaching material. A critical analysis will give us ideas to improve pedagogy for future learning modules.
- Establish a friendly and conversational tone in writing lessons, feedback, and other communications with students. In communicating with students through discussion forums or by email, informal and friendly tone will help in connecting with the students.

A tone of positivity will help in encouraging students to focus on the subject. Teaching material should also provide intrinsic motivation. However, we must remember that most of the distance students are committed to studies and are motivated to do well.

- Assessment criteria for each assignment must be linked to learning objectives of the course.
- Make the distinction and a fine balance between "nice to know" and "necessary to know."
- Provide illustrations for complex and difficult concepts. Technology must be employed to illustrate these concepts (synchronous conference meetings, phone calls, videos, and one-to-one online sessions).
- Share student submissions with the entire class (after obtaining permission from the student) as a good example.
- Teams are put together which represent diversity in qualifications and experience.

LECTURE AND WORKSHOP OUTLINE

1.1 What is a project?

A **project** is a new, time-bound effort that has a definite beginning and a definite ending with several related and/or interdependent tasks to create a unique product or service

Each project has unique **stakeholders** people and groups who can impact the project or might be impacted by either the work or results of the project.
Project management is the art and science of using knowledge, skills, tools, and techniques efficiently and effectively to meet stakeholder needs and expectations.

1.2 History of Project Management

All through history projects have been conducted
Formal discipline starting 1950s – scheduling and control
Recent years – more focus on communications, leadership, teamwork, and agile

1.3 How Can Project Work be Described?

Projects vs. operations
Soft skills and hard skills
Authority and responsibility
Project life cycle
Agile (adaptive) approach
Initiating, planning, executing, closing

1.4 Understanding projects

Project Management Institute (PMI)
Project Management Body of Knowledge (PMBOK®)
    Process groups
    Knowledge areas
PMI Talent Triangle
Selecting and Prioritizing Projects
Project Goals and constraints
Defining Project Success and Failure
Using Microsoft Project to Help Plan and Measure Projects
Types of projects
    Industry – PMI Special Interest Groups (SIGs)
    Size
    When project manager is able to clearly determine scope
    Application – organizational change, quality improvement, R&D, Information Systems (IS), construction
Scalability of project tools

1.5 Project roles

Traditional Roles
Executive roles
    Sponsor, Customer, Steering Team, Project Management Office (PMO)
Managerial roles
    Project Manager, Functional Manager, Facilitator,
Associate roles
    Core Team Member, Subject Matter Expert (SME)

Agile Roles
Executive Roles
    Customer (product owner), Sponsor (product manager), Portfolio Team, Project Management/Scrum Office
Managerial Roles
    Customer (product owner), Scrum Master, Functional Manager, Coach
Associate Roles
    Team member

1.6 Overview of book

PART 1 ORGANIZING PROJECTS

Chapter 1: Introduction to Project Management

Chapter 2: Project Selection and Prioritization

Chapter 3: Chartering Projects

PART 2: LEADING PROJECTS

Chapter 4: Organizational Capability: Structure, Culture, and Roles

Chapter 5: Leading and Managing Project Teams

Chapter 6: Stakeholder Analysis and Communication Planning

PART 3 PLANNING PROJECTS

Chapter 7: Scope Planning

Chapter 8: Scheduling Projects

Chapter 9: Resourcing Projects

Chapter 10: Budgeting Projects

Chapter 11: Project Risk Planning

Chapter 12: Project Quality Planning and Project Kick-Off

PART 4 PERFORMING PROJECTS

Chapter 13: Project Supply Chain Management

Chapter 14: Determining Project Progress and Results

Chapter 15: Finishing Projects and Realizing the Benefits

CHAPTER REVIEW QUESTIONS

1. What is a project? (objective #1, pp. 3-4)

   The narrow answer is: a **project** is a new, time-bound effort that has a definite beginning and a definite ending with several related and/or interdependent tasks to create a unique product or service.

The broader answer is: a project is an endeavor that requires an organized set of work efforts that are planned in a level of detail that is progressively elaborated as more information is discovered. Projects are subject to limitations of time and resources such as money and people. Projects should follow a planned and organized approach with a defined beginning and ending. Project plans and goals become more specific as early work is completed. The output often is a collection of a primary deliverable along with supporting deliverables such as a house as the primary deliverable and warranties and instructions for use as supporting deliverables. Each project typically has a unique combination of **stakeholders** people and groups who can impact the project or might be impacted by either the work or results of the project. Projects often require a variety of people to work together for a limited time and each needs to understand that completing the project will require effort in addition to their other assigned work.

2. What is project management? (objective #1, p. 4)

   Project management is the art and science of using knowledge, skills, tools, and techniques efficiently and effectively to meet stakeholder needs and expectations. This includes work processes that initiate, plan, execute, control, and close work.

   Project management includes both administrative tasks for planning, documenting, and controlling work and leadership tasks for visioning, motivating, and promoting work associates.

3. How are projects different than ongoing operations? (objective #1, pp. 6-7)

   Projects are temporary while operations are ongoing.

4. What types of constraints are common to most projects? (Objective #1, pp. 14-15)

   Project performance, comprised of scope (size), quality (acceptability of the results) is constrained by cost, and schedule.

5. What are the three components of the Talent Triangle? (pp. 11-14)

. Technical areas, leadership, and strategic business management.

6. At what stage of a project life cycle are the majority of the "hands-on" tasks completed? (Objective #2, p. 8)

   Executing.

7. During which stage of the project life cycle are loose ends tied up? (Objective #2, p. 8)

Closing.

8. What are the five process groups of project management? (Objective #3, p. 10)

Initiating, Planning, Executing, Monitoring & Controlling, Closing

9. Which process group defines a new project or phase by obtaining authorization? (Objective #3, p. 10)

Initiating

10. What are the ten project management knowledge areas? (Objective #3, p. 11)

The ten knowledge areas as paraphrased from the *PMBOK® Guide*, pages 9 and 10 are: integration, scope, schedule, cost, quality, resources, communications, risk, procurement, and stakeholders.

11. What two project dimensions are components of project performance? (Objective #4, p. 14)

Scope and quality.

12. How do you define project success? (objective #4, pp. 15-16)

Project success is creating deliverables that include all of the agreed upon features (meet scope goals). The outputs should satisfy all specifications and please the project's customers. The customers need to use the outputs effectively as they do their work (meet quality goals). The project should be completed on schedule and on budget (meet time and cost constraints).

Project success also includes other considerations. A successful project is one that is completed without heroics – that is, people should not burn themselves out to complete the project. Those people who work on the project should either learn new skills and/or refine existing skills. Organizational learning should take place and be captured for future projects. Finally, the parent organization should reap business level benefits such as development of new products, increased market share, increased profitability, decreased cost, etc.

Project success as summarized in Exhibit 1.4 include the following:
• Meeting Agreements
– Cost, schedule, and specifications met
• Customer' Success
– Needs met, deliverables used, customer satisfied
• Performing Organization's Success
– Market share, new products, new technology
• Project Team's Success
– Loyalty, development, satisfaction

13. How do you define project failure? (objective #4, p. 16)

    Project failure is not meeting all of the success criteria listed above. Serious project failure is when some of the success criteria are missed by a large amount and/or when several of the success criteria are missed by even a small margin.

14. List four common causes of project failure. (objective #4, p. 16)

    - Not enough resources are available for project completion,
    - Not enough time has been given to the project,
    - Project expectations are unclear,
    - Changes in the scope are not understood or agreed upon by all parties involved,
    - Stakeholders disagree regarding expectations for the project, and
    - Adequate project planning is not done.

15. What are three common ways of classifying projects? (objective #5, pp. 16-17)

    Projects can be classified by industry, size, when scope can be determined with confidence, and type such as organizational change, quality and productivity improvement, R&D, information systems (IS), and construction.

16. What is predictive or plan-driven planning and when should it be used? (Objective #5, p. 8)

    Predictive or plan-driven planning occurs when the majority of planning is done before any part of the project is executed. This is used when it is easy to estimate the amount of work required and, therefore, there is a high degree of certainty as to what the project scope will be.

17. What is adaptive or change-driven planning and when should it be used? (Objective #5, p. 9)

    Also known as iterative planning, this is used when there is a great degree of uncertainty at project inception as to what its overall scope will be. As the project moves forward and more details emerge, planning changes from general to specific. Agile is an example of adaptive or change-driven project management.

18. What makes someone a project stakeholder? (Objective #6, p. 4)

    Stakeholders are people or organizations that are actively involved in the project, or whose interests may be positively or negatively affected by either the process of performing the project or the project results.

19. What are four project executive-level roles? (objective #6, pp. 17-18)

    There are four project executive level roles in traditional project management: sponsor, customer, steering team, and project management office. The sponsor has a financial stake in the project, charters the project, reviews project progress, is often part of the steering team, and often mentors the project manager. The customer needs to ensure that a good contractor for external projects or project manager for internal projects is selected, make

sure requirements are clear, and maintain communications throughout the project. A steering or leadership team for an organization is often the top leader (CEO or other) and his or her direct reports. The project management office (PMO) is the keeper, facilitator, and improver of the project management system.

The four project executive level roles in agile project management are customer (product owner), sponsor (product manager), portfolio team, and project management/scrum office. The customer ensures that the needs and wants of the various constituents in the customer's organization are identified and prioritized and that project progress and decisions continually support the customer's desires. The sponsor controls the budget. The portfolio team often performs much of the work of a traditional steering team, and a similar office that may be titled differently such as Scrum office performs much of the work of a project office.

20. List and describe each of the managerial and associate roles. (objective #6, pp. 19-20)

The three traditional project managerial level roles are the project manager, functional manager, and facilitator. The project manager: is directly accountable for the project results, schedule, and budget; is the main communicator; and often must get things done through the power of influence since his or her formal power may be limited. The functional managers are department heads that determine how the work of the project gets accomplished; often supervise that work and often negotiate with the project manager regarding which workers are assigned to the project. A facilitator is sometimes assigned to complex or controversial projects to assist the project manager with the process of running meetings and making decisions.

The two associate level project roles are core team members and subject matter experts. Core team members are assigned to the project for its entire duration if possible and jointly make decisions with the project manager. Subject matter experts are brought in as needed to help with specific project activities.

In agile project management the four managerial roles are customer (product owner), scrum master, functional manager, and coach. As stated in the executive roles above, the customer ensures that the needs and wants of the various constituents in the customer's organization are identified and prioritized and that project progress and decisions continually support the customer's desires. We group customer as a managerial role also as this person needs to be closely involved on a daily basis and often performs some of the duties a project manager would on a traditional project. The Scrum Master serves and leads in a facilitating and collaborative manner. This is a more limited, yet more empowering role than the traditional project manager. The functional manager has a similar, but sometimes more limited, role than the traditional department head. Many organizations using Agile also have a coach who acts as a facilitator and trainer.

DISCUSSION QUESTIONS

1. Using an example, describe a project in terms that are common to most projects. (Objective #1, Understanding, p. 4)

   Answers vary. The example should include some reference to project goals (scope and quality), project constraints (budget and schedule), stakeholders, communication needs, and the project life cycle.

2. Why are more organizations using project management? If you were an executive, how would you justify your decision to use project management to the board of trustees? (Objective #1, Creating, p. 5)

   - Rapid growth and changes in industries – particularly information and communications technology.
   - Increasing customer demands for rapid introduction of new products and technologies.
   - Global competition driving down prices.
   - Increasingly complex products and services

3. Explain how to scale up or down the complexity of project planning and management tools and what effect, if any, this might have on the project life cycle. (Objective #2, Evaluating, p. 17).

   A very small project might be to build a garage. This could be accomplished with very simple description of the resulting garage (scope), a firm fixed price contract with few provisions, a schedule for construction, and exchange of contact information. All of the planning might be accomplished with a very few short, simple documents. A much larger and more complex project might use many more documents for planning and control and many of the documents could have considerably more detail.

4. List and describe several issues that pertain to each stage of the project life cycle. (Objective #2, Remembering, pp. 7-8)

   - **Initiating** – when a project is proposed, planned at a high level, and key participants commit to it in broad terms;
   - **Planning** – starts after the initial commitment, includes detailed planning, and ends when all stakeholders accept the entire detailed plan;
   - **Executing** – includes authorizing, executing, monitoring, and controlling work until the customer accepts the project deliverables; and
   - **Closing** – all activities after customer acceptance to ensure project is completed, lessons are learned, resources are reassigned, and contributions are recognized.

5. Put the five project management process groups in order from the one that generally requires the least work to the one that requires the most. (Objective #3, Analyzing, p. 10)

Answers will vary. Students should be able to defend their answers. 5 process groups:

Probably the two that require less work are initiating and closing. While both should be done well, there are relatively fewer things to do on them.

- **Initiating** – defines and authorizes a project or a project phase;
- **Closing** – formalizes acceptance of project outcomes and the project is brought to a conclusion.

An argument could be made for which of these three have the most work. There are more planning processes, but accomplishing the work and making sure it is done and reported correctly also require a substantial amount of time.

- **Planning** – defines and refines objectives and plans actions to achieve objectives;
- **Executing** – directs, and manages people and other resources to accomplish project work;
- **Monitoring and controlling** – collects data and checks progress to determine any needed corrective actions; and

6. Name the ten project management knowledge areas and briefly summarize each. (Objective #3, Understanding, p. 11)

- **Integration management** – unifying and coordinating the other knowledge areas by creating and using tools such as charters, project plans, and change control.
- **Scope management** – determining all the work that is necessary for project completion and ensuring it is accomplished;
- **Schedule management** – defining, sequencing, and estimating duration, and resourcing work activities as well as developing and controlling the schedule;
- **Cost management** – planning, estimating, budgeting, and controlling costs;
- **Quality management** –planning, managing, and controlling quality;
- **Resource management** – acquiring, developing, managing and controlling the project team;
- **Communications management** – generating, collecting, disseminating, storing, and disposing of timely and appropriate project information;
- **Risk management** – risk identification, analysis, response planning, implementing risk responses, and monitoring risks;
- **Procurement management** – purchasing or acquiring product and services as well as contract management; and
- **Stakeholder management**—identifying all possible stakeholders, analyzing their various needs and expectations, communicating with stakeholders throughout life of project.

7. Discuss how a project could be successful by some measures yet unsuccessful by others. (Objective #4, Analyzing, pp. 15-16).

A project may end on time but over budget or under budget but of lower quality than planned.

8. What does project failure mean? What are some examples? (Objective #4, Understanding, p. 16)

Project failure is not meeting all of the agreed-upon success criteria in the project plan. Serious project failure is when some of the success criteria are missed by a large amount and/or when several of the success criteria are missed by even a small margin. An example could be a project that is has to end prematurely due to being severely over budget or an IS project whose deliverable is unhelpful to the client.

9.Compare and contrast advantages and disadvantages of predictive/plan-driven and adaptive/change-driven project life cycle approaches. (Objective #5, Creating, pp. 7-10)

Predictive—more time spent upfront on planning; clear idea of scope early in project, more likely to change plan at later stages

Adaptive—allows for greater flexibility on unknown projects, may be harder for team to have common understanding of project early in life cycle, more easily changed.

10. You are given a project to manage. How do you decide whether to use a predictive or adaptive approach? (Objective #5, Applying, pp. 7-10)

First you need to get an idea of what the project requires. Is the deliverable(s) and process needed to achieve it/them easy or difficult to understand? In other words, how much certainty is there about your project scope? If its certainty is high because it is a small and/or routine project, predictive planning is probably the way to go. If there are lots of variables outside your control and/or a great deal of uncertainty, perhaps an adaptive approach is favorable.

11. Contrast project managers and functional managers. (Objective #6, Understanding, p. 7)

The project manager is normally directly accountable for the project results, schedule, and budget. This is the person who is the main communicator, who is responsible for the planning and execution of the project, and who has to be working on the project from start to finish. The project manager often must get things done through the power of influence since his or her formal power may be limited

Functional managers are the department heads – the ongoing managers of the organization. They will normally determine how the work of the project gets accomplished; often directly

supervising that work and they are likely to negotiate with the project manager regarding which workers are assigned to the project.

12. List as many project roles as you can, and identify what each one is responsible for in terms of the project. (Objective #6, Remembering, pp. 17-20)

    Core team members are ideally assigned to the project for its entire duration. They work with the project manager to make decisions, perform hands-on work, and sometimes supervise the work of subject matter experts.

    Subject matter experts are brought onto the project when needed to perform specific activities. They are not normally involved in making project-wide decisions or in supervising the work of others.

    A steering or leadership team for an organization is often the top leader (CEO or other) and his or her direct reports. The chief projects officer is the keeper, facilitator, and improver of the project management system. The sponsor has a financial stake in the project, charters the project, reviews project progress, is often part of the steering team, and often mentors the project manager.

    The four project managerial level roles are the project manager, functional manager, facilitator, and senior customer representative. The project manager: is directly accountable for the project results, schedule, and budget; is the main communicator; and often must get things done through the power of influence since his or her formal power may be limited. The functional managers are department heads that determine how the work of the project gets accomplished; often supervise that work and often negotiate with the project manager regarding which workers are assigned to the project. A facilitator is sometimes assigned to complex or controversial projects to assist the project manager with the process of running meetings and making decisions. The senior customer representative ensures that the needs and wants of the various constituents in the customer's organization are identified and prioritized and that project progress and decisions continually support the customer's desires.

PMBOK® Guide Questions

The purpose of these questions is to help visualize the type of questions on PMP and CAPM exams. The correct answer is shown and the page references from this book are shown below each question. Remember, this text is designed to help teach students *how to plan and manage projects* and it complements the *PMBOK® Guide* which is designed to define the "what" of project management. Therefore, some of the questions have rather full answers in the text, others have rather full answers in the *PMBOK® Guide*, and some have rather full answers in both. Each source has something useful for the student to understand about each question, but by design they are not identical.

1) Which project role provides resources or support for the project, promotes and protects the project at higher levels of management, and takes an active role in the project from the chartering stage through project closure?

   a) Functional manager
   b) Project manager
   c) Project team member
   d) Project sponsor

   Answer: d
   CPM p. 18, PMBOK p. 68

2) Which PMBOK® Guide Knowledge Area includes those processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully?

   a) Cost management
   b) Scope management
   c) Risk management
   d) Quality management

   Answer: b
   CPM P. 11, PMBOK p. 129

3) In order to be successful, the project team must be able to assess the needs of stakeholders and manage their expectations through effective communications. At the same time they must balance competing demands among project scope, schedule, budget, risk, quality, and resources, which are also known as project _____?

   a) Plan elements
   b) Deliverables
   c) Constraints
   d) Targets

   Answer: c
   CPM p. 14-15, PMBOK p. 503

4) Projects pass through a series of phases as they move from initiation to project closure. The names and number of these phases can vary significantly depending on the organization, the type of application, industry, or technology employed. These phases create the framework for the project, and are referred to collectively as the _____.
a. project life cycle
b. project management information system (PMIS)
c. product life cycle
d. Talent Triangle

Answer: a
CPM pp. 7-8, PMBOK pp. 18-19

5) Based on PMI's definition, which of these is a good example of a project?
a. manufacturing a standard commodity
b. following policies and procedures for procuring an item
c. designing and launching a new website
d. using a checklist to perform quality control

Answer: c
CPM p. 6, PMBOK p. 13

6) When would a predictive project life cycle be the preferred approach?
a. when the high-level vision has been developed, but the product scope is not well defined
b. when the environment is changing rapidly
c. when the product to be delivered is well understood
d. when the product will be created through a series of repeated cycles

Answer: c
CPM p. 8, PMBOK p. 19

7) To be effective, a project manager needs to possess all of the following competencies except ____.
a. personal effectiveness—attitudes, core personality traits, leadership
b. authority—power or right granted by the organization
c. performance—what project managers can accomplish while applying their project management knowledge
d. knowledge of project management—understanding of project management tools and techniques

Answer: b
CPM p. 7, PMBOK pp. 56-60

8) In Adaptive Life Cycles (change-driven or agile methods) ___.
a. the overall scope of the project is fixed, and the time and cost are developed incrementally
b. the overall cost is fixed, and the project scope and schedule are developed iteratively

c. the time and cost are fixed, but the scope is developed iteratively
d. change control is very important

Answer: c
CPM p. 9, PMBOK p. 131

9) The two traditional project management associate-level roles are different in each of the following ways *except* ____.
a. duration of time spent on project
b. ability to work within project constraints
c. degree of input contributed to project planning
d. skill set

Answer: a
CPM p. 20, PMBOK, p. 90

10) A freelance project manager is brought in by Company X to lead a large, expensive project. This project manager has excellent leadership skills and a strong technical understanding of the project. In order for her to optimize every component of the Talent Triangle, what might be a good activity for the project manager at the start of her time with Company X?
a. familiarize herself with the long-term objectives of Company X
b. host an icebreaker for all team members
c. attend a seminar on advanced leadership techniques
d. send an email including her résumé to all SMEs to ensure they are aware of her technical background

Answer: a
CPM p. 14, PMBOK p. 90

INTEGRATED EXAMPLE PROJECTS

We are using two example projects throughout all 15 chapters of this book. Suburban Homes is a construction project suited to mostly traditional project planning and management. Casa de Paz is a development project suited more toward agile project planning and management. In this chapter, we introduce both of them. In subsequent chapters, we choose one to demonstrate techniques and concepts from the chapter and ask leading questions of the other one. Suggested answers will be in the Instructor's Manual. We alternate chapters so professors can choose to use the questions as assignments if they wish.

SUBURBAN HOMES CONSTRUCTION PROJECT

Before introducing and formalizing project management practices, Adam should consider an exhaustive study of the existing project management practices and their strengths and weaknesses. The study must include review of project documents, project performance

information, and historical data of past projects. It is important to learn about the organization's success strategies and stories as well as failures and causes of failures. Furthermore, Adam should try to assess the understanding of project management and capabilities of individuals who are managing projects in the organization. This information gathering exercise must also include having formal and informal conversations with people at all levels within the organization. Based on both the existing practices and capabilities of people who are working on projects, a plan must be devised to introduce appropriate project management tools, techniques, and processes, and then develop training programs to develop competencies of individuals working in the organization. The key message is to develop and implement standards and promising processes, tools, and techniques that are appropriate for the organization.

SEMESTER PROJECT

We like to use real projects as teaching vehicles. The end of Chapter 1 is a good place to introduce the projects. On a two or three days a week schedule, this can be the last day. On a one day per week schedule, this can be the last hour. We cover this in three parts. We ask a person from each agency or organization that will have a student project to attend this. That person can be called the project sponsor.

First, we tell the students a tiny bit about each project such as it is a fund raising or information systems project. We like to ask the students what criteria will be useful in deciding on project teams. This operationalizes the need for both soft and hard skills. It also gets the students thinking about practical issues of meetings (available time and locations). Once we have brainstormed a few ideas for team assignments, we ask the students to provide brief inputs regarding their background on those ideas. The students can also list a preference for which project – but we tell them if they list one preferred project; they must list at least a first and second choice. It is easy to give most students first or second choice, but difficult to give all students first choice.

Second, we spend about 10 minutes communicating common expectations to the student teams as well as the project sponsors. We tell both that we want them to initiate an effective working relationship and then we itemize the student assignments with due dates. We give everyone a hard copy. We spend a bit more time explaining the charter since that is the first deliverable.

Third, we ask each sponsor to give an elevator speech (a very brief introduction to their organization and then tell very briefly what their project is and why it is important). While these sponsors are talking, we make project assignments. We base these on a combination of their preferences and the information they tell me about themselves. We try to make diverse teams when possible. Once all have been presented, We tell the students who will be on which project. We allow them the opportunity to trade projects if they wish, but very few do. We ask the students to exchange information with their sponsors and arrange for their first meeting.