Project Management Overview

Project management has been practiced for hundreds, actually thousands, of years. Long before computers and sophisticated scheduling techniques became available, the ancestors of today's professional project managers had to determine resource requirements, arrange for material and equipment, and strive to meet a schedule imposed by, in many cases, a powerful leadership entity. They knew that any construction type of undertaking or project endeavor, large or small, required a goal, a set of objectives, a plan, coordination with many functional groups, the management of resources, and the ability to manage change. Additionally, it became very clear that every project requires strong and adaptive leadership. Project managers, by nature of the position, will work with and manage teams and a variety of stakeholders, some of whom can be expected to be a real a challenge to work with. Considering this factor, project managers must continue to develop the skills necessary to balance the expectations and demands of each stakeholder while managing project deliverables. This is driving a change in the role of "project manager" to that of "project leader." Today's project managers see themselves as managing part of a business as well as managing a project.

As the world's business and financial environment has changed and evolved, organizational leaders have recognized the value of project management and the competent project manager. Project management has also become a key factor in strategic planning.

Today, project management is practiced, to some extent, in almost every organization from small businesses to Fortune 500 companies to local and state governments. Some organizations follow a very formal methodology, and many organizations have adopted a "management by projects" approach. Some organizations have established project management offices (PMOs) to assist them in developing standards for managing projects and processes and to ensure that these standards are followed. Studies have indicated that the application of project management results in significantly higher levels of performance than those of organizations that do not have a project management discipline. As the project management discipline is adapted into the culture of an organization, the benefits of project management are quickly realized. These benefits include more efficient scheduling of resources, improved and more reliable estimating, higher quality of deliverables, early identification of project risks, issues and problems,

and more effective measurement processes to assess success. In this highly competitive business environment, it is clear that a well- executed project management methodology has become a significant advantage.

Applying project management is certainly a factor in achieving organizational objectives, but it is important to understand the definition and nature of a project. Projects are defined as temporary endeavors with specific start and end dates, and they are initiated to produce a unique product or service. Project management is the application of knowledge skills, tools, and techniques to project activities to meet project objectives. Effective project management is accomplished through the integration of five major project management processes: initiation, planning, execution, monitoring and controlling, and closing. For control purposes, projects are generally divided into phases, and these processes also apply to the management of each phase of a project. As projects are authorized by a project sponsor, a project manager is assigned and becomes accountable for the success of the project through effective leadership and the application of project management techniques. The project manager will ensure coordination between functional organizations and must have the ability to apply the appropriate amount of managerial and cross-organizational support and guidance to achieve success as the project is executed.

Project management, as a discipline or profession, also subscribes to a code of ethics and professional conduct specifically focused on integrity, respect, fairness, and honesty. This includes business ethics as well as project management ethics because we now believe that we are managing our business by projects and that the project managers are actually managing part of a business.

▶ Glossary of Terms

Key project management terms and definitions to review and remember. The disciple of project management includes a lexicon that is widely used in most industries, and it is beneficial to learn the "language" of the professional project manager.

Deliverable A tangible, verifiable work output. Project work will generally produce multiple deliverables that will comprise the final project deliverable. Deliverables, in some cases can be intangible such as the achievement of good will, brand recognition, and customer satisfaction.

Functional manager Generally, the manager who "owns" or supervises the resources assigned to project activities. Functional managers are considered to be the technical experts and usually provide information about resource requirements, resource capability, task duration estimates, schedule development, and cost estimates. Project managers engage the assistance of functional managers to develop the project plan and subsidiary project plans.

Non-project-driven Generally, these organizations may or may not not have a project methodology in place, are not organized around the delivery of projects, and are arranged in a functional organizational structure. Work is generally associated with

manufacturing and production lines. Projects are established as needed to improve or support functional lines and activities or organizational changes.

Program A group of related projects managed in a coordinated way to obtain benefits and control not available from managing them separately. Generally, projects in a program are interrelated.

Project A temporary endeavor undertaken to create a unique product, service, or result. A project has a specific objective, defined start and end dates, and funding limitations. Projects consume resources including human (labor), equipment and materials. A project is generally multifunctional or cross-organizational in nature. Projects generally produce one or more deliverables and deliverables can be tangible or intangible.

Project-driven organization Also known as "project based." In these organizations all work is characterized through projects. Projects are arranged as separate cost centers and the sum of all project work is associated with organizational goals and strategic objectives.

Project management Application of knowledge skills, tools, and techniques to project activities to meet project requirements. Project management involves the utilization of the five major process groups: initiation, project planning, executing, monitoring and controlling, and closing. These processes are applied to each project phase and enable the project manager to effectively integrate the 10 project management knowledge areas described in the *Guide to the Project Management Body of Knowledge* (*PMBOK® Guide*) developed by the Project Management Institute, or PMI.

Project sponsor Generally, described as the person or organization that authorizes the project and provides the financial resources required to plan, execute, and deliver the project objectives. The sponsor may be joined by other stakeholders to provide committee sponsorship and/or guidance for this project or for a portfolio of projects.

Triple constraint This term has been used for many years to describe the effects of changes to the competing project demands of time (schedule), cost (budget), and scope (specifications) usually depicted as a triangle. Specifically, the triple constraint emphasized that a change to any one side or element of the triangle will have an effect on the other elements. The triple constraint was also considered to display the key factors that define project success. The triple constraint has been modified and is now part of a list of several competing demands, including scope, time, cost, quality, risk, safety, business value, and resources. Project success is defined using several success factors, including quality, business value added, and fitness for use.

▶ Activities, Questions, and Exercises

Refer to Chapter One of *Project Management: A Systems Approach to Planning, Scheduling, and Controlling* (12th edition) for supporting information. Review each of the following questions or exercises and provide the answers in the space provided.

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Dr. Kerzner's 16 Points to Project Management Maturity

1. Adopt a project management methodology and use it consistently.

2. Implement a philosophy that drives the company toward project management maturity and communicate it to everyone.

3. Commit to developing effective plans at the beginning of each project.

4. Minimize scope changes by committing to realistic objectives.

5. Recognize that cost and schedule management are inseparable.

6. Select the right person as the project manager.

7. Provide executives with project sponsor information, not project management information.

8. Strengthen involvement and support of line management.

9. Focus on deliverables rather than resources.

10. Cultivate effective communications, cooperation, and trust to achieve rapid project management maturity.

11. Share recognition for project success with the entire project team and line management.

12. Eliminate nonproductive meetings.

13. Focus on identifying and solving problems early, quickly, and cost effectively.

14. Measure progress periodically.

15. Use project management software as a tool, not as a substitute for effective planning or interpersonal skills.

16. Institute an all-employee training program with periodic updates based on documented lessons learned.

■ Exercise

This exercise is intended to provide you with a basis and understanding of the major goals of an enterprise-wide project management methodology and to provide a baseline for process for improvement. The 16 Points to Project Management Maturity define the steps necessary to achieve high-level and consistent project performance and business value.

Review Dr. Kerzner's 16 points and identify the specific benefits associated with each point. Identify actions that may be taken to introduce, implement, or further enhance the value of each of the listed points in an organization.

Example: Adopt a project management methodology and use it consistently.

Action: Provide management with supporting information about how project management can assist in achieving organizational objectives. Obtain best practices documentation from companies that are actively using project management processes and methodologies and provide a summary to executive management.

1. Implement a philosophy that drives the company toward project management maturity and communicate it to everyone.

Action: _____

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2. Commit to developing effective plans at the beginning of each project.

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3. Minimize scope changes by committing to realistic objectives.

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4. Recognize that cost and schedule management are inseparable.

Action: _____

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5. Select the right person as the project manager.

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6. Provide executives with project sponsor information, not project management information.

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7. Strengthen involvement and support of the line management.

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8. Focus on deliverables rather than resources.

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9. Cultivate effective communications, cooperation, and trust to achieve rapid project management maturity.

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10. Share recognition for project success with the entire project team and line management.

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11. Eliminate nonproductive meetings.

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12. Focus on identifying and solving problems early, quickly, and cost effectively.

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13. Measure progress periodically.

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14. Use project management software as a tool, not as a substitute for effective planning or interpersonal skills.

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15. Institute an all-employee training program with periodic updates based on documented lessons learned.

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■ Questions

1. The potential benefits from effective project management are:

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2. Describe how the use of a project management methodology may benefit an organization, impact organizational success, and assist in the achievement of strategic objectives.

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3. List the factors that are commonly known as competing demands.

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4. What factors may be considered to effectively and reliably indicate successful completion of a project?

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5. In many organizations the organizational structure itself may create internal communications barriers, management gaps, functional gaps, and operational islands. These gaps and barriers may result in conflicts, inefficiencies, and lower productivity. Describe some of the causes of these gaps and how the gaps can be effectively minimized.

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6. Define the term *stakeholder* and provide examples of the stakeholders associated with projects you are engaged in.

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7. Describe the purpose or meaning of the term "project management."

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8. The five major project management process groups are:

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9. Describe at least three factors that might influence a customer's perception of project success.

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10. Explain why establishing a good daily working relationship with functional managers and/or line managers is important to project success and is a critical responsibility of the project manager.

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11. Explain the term *integration* as it relates to project management and describe the major roles and responsibilities of the project manager during project planning and execution.

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12. Define the typical roles of the functional manager and describe at least three challenges that a functional manager may encounter in an organization that engages in the management of multiple projects.

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13. How can a project manager ensure that he or she establishes and maintains an effective and collaborative relationship with the project sponsor or project executive?

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14. Causes and effects. Although all projects are unique, there are many common issues that are experienced by project managers and teams. Referring to the list of causes and effects, match two causes (only two) to each effect and explain why the two were chosen.

Causes

a. Top management does not recognize the activity as a project

b. Too many projects going on at the same time

c. Impossible schedule commitments

d. No functional input into the planning phase

e. No one person responsible for the total project

f. Poor control of design changes

g. Poor control of customer changes

h. Poor understanding of the project manager's job

i. Wrong person assigned as project manager

j. No integrated planning and control

k. Company resources are overcommitted

l. Unrealistic planning and scheduling

m. No project cost accounting ability

n. Conflicting project priorities

o. Poorly organized project office

Effect	Explanation
1. Late completion of activities Cause #1: _____ Cause #2: _____	
2. Cost overruns Cause #1: _____ Cause #2: _____	

(*Continued*)

Effect	Explanation
3. Substandard performance Cause #1: _____ Cause #2: _____	
4. High turnover in project staff Cause #1: _____ Cause #2: _____	
5. High turnover in functional staff Cause #1: _____ Cause #2: _____	
6. Two functional departments performing the same activities on one project Cause #1: _____ Cause #2: _____	

15. In addition to the roles of integrator and coordinator, describe other roles and responsibilities the project manager is expected to perform:

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16. Project managers are often challenged to influence functional managers who may have multiple projects to deal with and may be forced to compete with other project managers in the same organization for resources. Explain how the project manager can improve relationships with functional managers and influence them to provide the necessary resources to achieve the project manager's objectives.

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17. The relationship between the project manager and the project sponsor or executive is a critical factor and can mean the difference between project success and failure. What actions can be taken by the project manager to ensure that a strong and supportive relationship exists between the project manager and the project sponsor?

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18. According to the *PMBOK® Guide*—Sixth Edition, a project is defined as:

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19. List the three components of the PMI® Talent Triangle.

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20. In any organization that accepts and utilizes a project management methodology, the project manager is often faced with several obstacles that must be overcome to achieve the desired performance and business benefits. Describe at least three of these obstacles and provide suggestions for overcoming them.

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21. The project manager is responsible for coordinating and integrating activities across multiple, functional lines. The integration activities performed by the project manager include:

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22. What is the ultimate role of the project sponsor?

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■ Kerzner "Quick Tips" for the Project Management Institute PMP® and CAPM® Exams

The information in Chapter One Is most closely related to the following topics in the *PMBOK® Guide,* Sixth Edition: Introduction, Foundation Elements, Organizational Strategies, Role of the Project Manager, Project Life Cycle, Project Integration Management

An important item to remember is the Project Management Framework, as described in the *PMBOK® Guide*—Sixth Edition, which defines a total of 49 project processes that describe the activities generally found throughout a project's life cycle. These processes are organized into 10 knowledge areas and comprise the five process groups: Initiating, Planning, Executing, Monitoring, and Closing.

The 10 knowledge areas of project management are *Integration Management, Scope Management, Time Management, Cost Management, Risk Management, Human Resources Management, Quality Management, Procurement Management, Communication Management,* and *Stakeholder Management.* These knowledge areas and the sub-processes associated with them are connected through the "system" of project management and are all *integrated, interrelated,* and *interdependent.* There are no independent components of a project and changes to the elements of one knowledge area, such as Scope Management, as described in the *PMBOK® Guide,* may, in some way, impact any of the other knowledge areas. Each knowledge area and its detailed sub-processes are part of the total system of project management.

■ Important Terms to Remember

Change Control Board A team or group designated or empowered to review and determine the value of a change and to approve or deny change requests.

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Close project Utilizing the project management methodology, Project Management Information System (PMIS), and the expert judgment of the functional managers to complete the project and perform all final administrative procedures. The processes required to obtain formal acceptance and completion of project files for reference as historical information.

Configuration management Process that will ensure that configuration changes (changes to features, functions, dimensions, physical characteristics) are managed and approved to prevent or reduce the risks of additional cost and scope changes, or other impacts to the project.

Constraints and assumptions Constraints are the limitations the project manager and team must operate within. Examples: predetermined schedule and budget, limited resources. Assumptions in the project management context are items that, for planning purposes can be believed to be true, real, or certain. Assumptions are not grounded in fact and should be verified.

Enterprise environmental factors Internal and external factors may influence the project outcome and must be considered by the project manager and team during project planning and implementation such as the organizational culture, industry standards, resource availability and capability, risk tolerance, and political environment.

Historical records Data and information gathered during project planning and execution and recorded for legal purposes, references, and lessons learned.

Integrated change control The 10 knowledge areas are managed in an integrated manner with an understanding that a change in one area can impact any or all of the other knowledge areas. Example: A change in the scope of a project may impact the schedule and budget. A change in quality requirements may impact the budget and the human resource requirements. It is recommended that the project team consider the impact of the change before implementing the change by using a predefined change control process. A change control process generally has three major objectives: Obtain approval for the change, determine if change has occurred through comparison of the baseline with actual results, and determine when and how to introduce the change to minimize the impact on ongoing operations.

Monitor and control project work Agreed upon processes for managing work performance, managing change requests, utilization of earned value techniques, identifying corrective and preventive actions.

Organizational process assets Standard policies and procedures established by an organization and expected to be followed such as safety procedures, quality assurance reviews, and project health checks. Process assets may also include available planning templates, financial controls, change control procedures, and risk management processes.

Organizational strategies How an organization will achieve its goals and objectives. A formal project management process may be an organizational strategy. Consider how your project impacts or supports your organization's objectives. Make sure you can link your project to the organizational goals.

Preliminary project scope statement This document describes the project and the desired objectives at a very high level. The preliminary scope statement includes the definition of the project, the products and services to be delivered, major milestones, and acceptance criteria. A final project scope statement is developed during the *PMBOK Guide®* "define scope" process.

Progressive elaboration The process of moving forward incrementally and adding more detail to the project plan.

Project charter The initial project document that authorizes the project and the use of resources. Assignment of the project manager and level of decision-making authority of the project manager is also included in a project charter.

Project management information system Any system or group of systems working together to gather, store, and distribute information about your project. Examples: time-reporting system, accounting system, project software.

Project management plan All of the actions necessary to integrate and coordinate the entire project effort, including any subsidiary plans that have been established by the project team. The project plan guides the team during project execution and is expected to change as the project is progressively elaborated.

Project plan The approved document that provides the baseline for executing and managing the project.

SMART objectives Well-defined objectives are considered to be Specific, Measurable, Attainable, Realistic, Time bound.

Stakeholders People and/or organizations directly involved in or impacted by the project. Consider who the key stakeholders are and also other stakeholders who may view your project as a threat or an obstacle to their projects or personal objectives. Determine who the negative stakeholders are and what risks they may introduce to the successful completion of your project. Develop strategies for dealing with your project stakeholders.

Subsidiary plans Plans created to support the higher-level project management plan. An example of a subsidiary plan is the Change Control Plan—the control processes in place to manage other knowledge areas such as scope change control, schedule change control, cost change control, and so on. The total or *Integrated Project Management plan* may include several subsidiary plans depending on the complexity of the project. Other examples of subsidiary plans: Human Resources Plan, Quality Plan, Safety Plan.

Integrated planning includes many processes, so be prepared to answer questions that may include several different processes related to a project situation. Become familiar with all process groups, and make sure you are familiar with the inputs, tools, techniques, and outputs of each process described in the *PMBOK® Guide.*

PMI emphasizes the importance of planning. Proper planning requires effective communication among the team and sound leadership from the project manager. The result of effective and comprehensive planning is a project team that is more

completely informed and has a strong understanding of the larger, integrated purpose and objectives of the project.

Additional tips and practice items for the PMP® exam are included in each chapter of the text book and in Chapter 22 this workbook, "PMP® and CAPM® Exam Review."

▶ Answers to Questions and Exercises

■ Exercise

1. Identify and communicate the benefits of project management.

2. Establish a project kickoff process and project-planning methodology.

3. Set objectives clearly using SMART criteria.

4. Establish a performance measurement system using earned value management.

5. Establish guidelines and criteria for selection of a project manager. Emphasize soft skills as well as managerial skills.

6. Establish expectations with executives at project start-up.

7. Communicate project sponsor support and executive support to the team. Understand line manager priorities. Create a positive working relationship.

8. Prepare and communicate acceptance criteria. Communicate the scope statement.

9. Obtain sponsor and executive support, establish clear objectives, and develop a communications plan.

10. Reward and recognize project teams and develop team-building activities.

11. Create meeting guidelines. Meet only when necessary. Define the meeting purpose, create an agenda, and manage time effectively.

12. Develop a risk management plan and a process for managing issues.

13. Use earned value management and establish success metrics. Conduct reviews after each project phase.

14. Identify a software application that will be accepted and used by project managers. Provide the appropriate training.

15. Establish a project management office, require documentation of lessons learned, and ensure that management support is visible.

■ Questions

1. Clear identification of functional responsibilities to ensure that all activities are accounted for, regardless of personnel turnover.
   - Minimizing the need for continuous reporting
   - Identification of time limits for scheduling

- Identification of a methodology for trade-off analysis
- Measurement of accomplishment against plans
- Early identification of problems so that corrective action may follow
- Improved estimating capability for future planning
- Knowing when objectives cannot be met or will be exceeded

2. Controls changes, provides consistent approach, improves quality, reduces risk, and improves estimating ability.

3. Cost, schedule, scope, quality, risk, resources.

4. Customer satisfaction — add-on business

   employee satisfaction — no disruption of operations

   minimal changes to the scope of work — executive management recognition of the project team

   minimal conflicts among team members and organization units — fully operational and accepted product or service deliverables

5. Functional units may develop their own culture, management hierarchy may affect the ability to communicate, protection of area of responsibility (turfism), competition among managers, different priorities, unclear organizational objectives, failure to communicate strategic goals, inappropriate organizational structure, organizational culture, business unit culture.

6. Anyone directly involved in the project or in some way affected either positively or negatively as a result of the project. Stakeholders generally include the project manager, project team, project sponsor, suppliers, end users, the customer, and many others.

7. The application of knowledge, skills, and tools necessary to achieve the project's requirements.

8. Initiating, planning, executing, monitoring and controlling, closing.

9. Quality, availability of the project manager, timeliness of status reporting, reliability of the product or service deliverable, safety, minimum or mutually agreed upon scope changes, no impact or interruption to the work flow of the organization. Also considered may be aesthetic appearance or aesthetic value of the deliverable, achievement of objectives, achievement of benefits expected, achievement of the value expected, and also possibly ease of use.

10. The project manager depends on the functional managers to provide the appropriate resources and to ensure that the work is performed correctly. A good relationship will minimize conflict and increase the likelihood of functional manager willingness to work on future projects with the project manager.

11. All project components and planning processes are interrelated. The project manager must coordinate and integrate project activities across organizational boundaries. The project manager ensures that functional units communicate effectively.

12. The functional manager provides the resources and technical expertise. Challenges include different priorities among project managers and projects, managing the demands of multiple project managers, limited resources, unreasonable time frames, and internal politics.

13. Establish expectations at the start of the project. Include communications requirements, escalation procedures, planning processes and methodology, and clear objectives.

14. There are many possible answers and solutions to the causes. This exercise is intended to emphasize the importance of identifying potential project problems and encourage proactive thinking and action. Any combination of causes may affect the outcome of the project.

15. The project manager is considered an integrator and coordinator for all major project activities. The project manager is held accountable for successful completion of the project. The project manager is a liaison between the project team and the project sponsor or executive steering committee. Other roles include team builder, conflict manager, coach, mentor, facilitator, leader, and motivator.

16. The project manager can develop better relationships with the functional managers through listening and understanding the priorities of the functional managers, their work environment, and issues associated with the functional manager's position.

17. Establish expectations clearly and intentionally between the project manager and the project sponsor or executive.

18. A project is a temporary endeavor undertaken to create a unique product, service, or result.

19. Technical project management, leadership, and strategic and business management skills.

20. Project complexity: Ensure that a detailed project scope statement is prepared. Organizational structure: Develop working relationships with the leaders/managers of the organizations you expect to engage in your project activities. Changing requirements: Establish a well-defined change process and ensure that it is observed. Other obstacles include changing technology, internal politics, and organizational silos.

21. ■ Integrating the activities necessary to develop a project plan
   ■ Integrating the activities necessary to execute the plan
   ■ Integrating the activities necessary to make changes to the plan

22. Provide behind-the-scenes assistance to project personnel for projects both internal to the company and external.

Your Personal Learning Library

Write down your thoughts, ideas, and observations about the material in this chapter that may assist you with your learning experience. Create action items and additional study plans to assist you in your personal development, enhancement of your skills, or for preparing to take the PMP® or CAPM® exam.

Insights, key learning points, personal recommendations for additional study, areas for review, application to your work environment, items for further discussion with associates.

Personal Action Items:	
Action Item	**Target Date for Completion**