

3

THE ROLE OF THE PROJECT MANAGER

3.1 OVERVIEW

The project manager plays a critical role in the leadership of a project team in order to achieve the project's objectives. This role is clearly visible throughout the project. Many project managers become involved in a project from its initiation through closing. However, in some organizations, a project manager may be involved in evaluation and analysis activities prior to project initiation. These activities may include consulting with executive and business unit leaders on ideas for advancing strategic objectives, improving organizational performance, or meeting customer needs. In some organizational settings, the project manager may also be called upon to manage or assist in business analysis, business case development, and aspects of portfolio management for a project. A project manager may also be involved in follow-on activities related to realizing business benefits from the project. The role of a project manager may vary from organization to organization. Ultimately, the project management role is tailored to fit the organization in the same way that the project management processes are tailored to fit the project.

A simple analogy may help in understanding the roles of a project manager for a large project by comparing them to the roles of a conductor for a large orchestra:

- ◆ **Membership and roles.** A large project and an orchestra each comprise many members, each playing a different role. A large orchestra may have more than 100 musicians who are led by a conductor. These musicians may play 25 different kinds of instruments placed into major sections, such as strings, woodwinds, brass, and percussion. Similarly, a large project may have more than 100 project members led by a project manager. Team members may fulfill many different roles, such as design, manufacturing, and facilities management. Like the major sections of the orchestra, they represent multiple business units or groups within an organization. The musicians and the project members make up each leader's team.
- ◆ **Responsibility for team.** The project manager and conductor are both responsible for what their teams produce—the project outcome or the orchestra concert, respectively. The two leaders need to take a holistic view of their team's products in order to plan, coordinate, and complete them. The two leaders begin by reviewing the vision, mission, and objectives of their respective organizations to ensure alignment with their products. The two leaders establish their interpretation of the vision, mission, and objectives involved in successfully completing their products. The leaders use their interpretation to communicate and motivate their teams toward the successful completion of their objectives.

◆ **Knowledge and skills:**

- The conductor is not expected to be able to play every instrument in the orchestra, but should possess musical knowledge, understanding, and experience. The conductor provides the orchestra with leadership, planning, and coordination through communications. The conductor provides written communication in the form of musical scores and practice schedules. The conductor also communicates in real time with the team by using a baton and other body movements.
- The project manager is not expected to perform every role on the project, but should possess project management knowledge, technical knowledge, understanding, and experience. The project manager provides the project team with leadership, planning, and coordination through communications. The project manager provides written communications (e.g., documented plans and schedules) and communicates in real time with the team using meetings and verbal or nonverbal cues.

The remainder of this section covers the key aspects of the role of the project manager. While there are thousands of books and articles available on the subject, this section is not intended to cover the entire spectrum of information available. Rather, it is designed to present an overview that will provide the practitioner with a basic understanding of the subject in preparation for a more concentrated study on the various aspects discussed.

3.2 DEFINITION OF A PROJECT MANAGER

The role of a project manager is distinct from that of a functional manager or operations manager. Typically, the functional manager focuses on providing management oversight for a functional or business unit. Operations managers are responsible for ensuring that business operations are efficient. The project manager is the person assigned by the performing organization to lead the team that is responsible for achieving the project objectives.

3.3 THE PROJECT MANAGER'S SPHERE OF INFLUENCE

3.3.1 OVERVIEW

Project managers fulfill numerous roles within their sphere of influence. These roles reflect the project manager's capabilities and are representative of the value and contributions of the project management profession. This section highlights the roles of the project manager in the various spheres of influence shown in Figure 3-1.

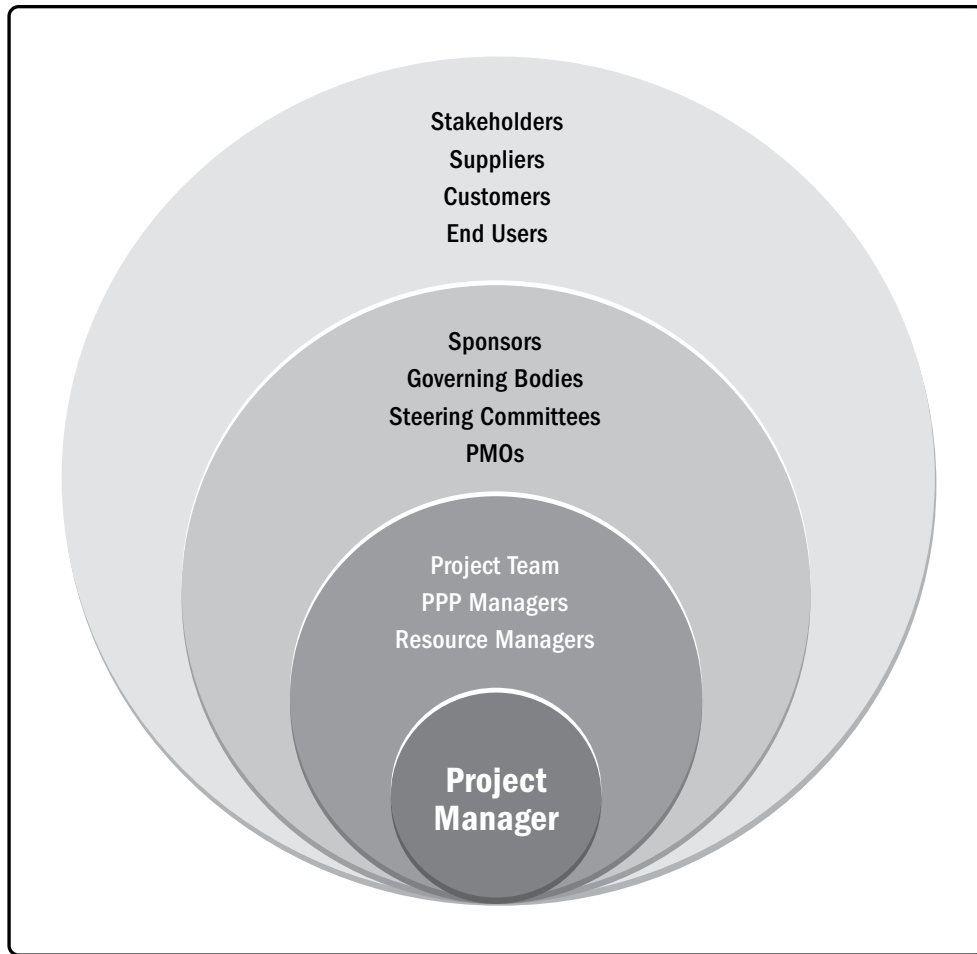


Figure 3-1. Example of Project Manager's Sphere of Influence

3.3.2 THE PROJECT

The project manager leads the project team to meet the project's objectives and stakeholders' expectations. The project manager works to balance the competing constraints on the project with the resources available.

The project manager also performs communication roles between the project sponsor, team members, and other stakeholders. This includes providing direction and presenting the vision of success for the project. The project manager uses soft skills (e.g., interpersonal skills and the ability to manage people) to balance the conflicting and competing goals of the project stakeholders in order to achieve consensus. In this context, consensus means that the relevant stakeholders support the project decisions and actions even when there is not 100% agreement.

Research shows that successful project managers consistently and effectively use certain essential skills. Research reveals that the top 2% of project managers as designated by their bosses and team members distinguish themselves by demonstrating superior relationship and communication skills while displaying a positive attitude [12].

The ability to communicate with stakeholders, including the team and sponsors applies across multiple aspects of the project including, but not limited to, the following:

- ◆ Developing finely tuned skills using multiple methods (e.g., verbal, written, and nonverbal);
- ◆ Creating, maintaining, and adhering to communications plans and schedules;
- ◆ Communicating predictably and consistently;
- ◆ Seeking to understand the project stakeholders' communication needs (communication may be the only deliverable that some stakeholders received until the project's end product or service is completed);
- ◆ Making communications concise, clear, complete, simple, relevant, and tailored;
- ◆ Including important positive and negative news;
- ◆ Incorporating feedback channels; and
- ◆ Relationship skills involving the development of extensive networks of people throughout the project manager's spheres of influence. These networks include formal networks such as organizational reporting structures. However, the informal networks that project managers develop, maintain, and nurture are more important. Informal networks include the use of established relationships with individuals such as subject matter experts and influential leaders. Use of these formal and informal networks allows the project manager to engage multiple people in solving problems and navigating the bureaucracies encountered in a project.

3.3.3 THE ORGANIZATION

The project manager proactively interacts with other project managers. Other independent projects or projects that are part of the same program may impact a project due to but not limited to the following:

- ◆ Demands on the same resources,
- ◆ Priorities of funding,
- ◆ Receipt or distribution of deliverables, and
- ◆ Alignment of project goals and objectives with those of the organization.

Interacting with other project managers helps to create a positive influence for fulfilling the various needs of the project. These needs may be in the form of human, technical, or financial resources and deliverables required by the team for project completion. The project manager seeks ways to develop relationships that assist the team in achieving the goals and objectives of the project.

In addition, the project manager maintains a strong advocacy role within the organization. The project manager proactively interacts with managers within the organization during the course of the project. The project manager also works with the project sponsor to address internal political and strategic issues that may impact the team or the viability or quality of the project.

The project manager may work toward increasing the project management competency and capability within the organization as a whole and is involved in both tacit and explicit knowledge transfer or integration initiatives (see Section 4.4 on Manage Project Knowledge). The project manager also works to:

- ◆ Demonstrate the value of project management,
- ◆ Increase acceptance of project management in the organization, and
- ◆ Advance the efficacy of the PMO when one exists in the organization.

Depending on the organizational structure, a project manager may report to a functional manager. In other cases, a project manager may be one of several project managers who report to a PMO or a portfolio or program manager who is ultimately responsible for one or more organization-wide projects. The project manager works closely with all relevant managers to achieve the project objectives and to ensure the project management plan aligns with the portfolio or program plan. The project manager also works closely and in collaboration with other roles, such as organizational managers, subject matter experts, and those involved with business analysis. In some situations, the project manager may be an external consultant placed in a temporary management role.

3.3.4 THE INDUSTRY

The project manager stays informed about current industry trends. The project manager takes this information and sees how it may impact or apply to the current projects. These trends include but are not limited to:

- ◆ Product and technology development;
- ◆ New and changing market niches;
- ◆ Standards (e.g., project management, quality management, information security management);
- ◆ Technical support tools;
- ◆ Economic forces that impact the immediate project;
- ◆ Influences affecting the project management discipline; and
- ◆ Process improvement and sustainability strategies.

3.3.5 PROFESSIONAL DISCIPLINE

Continuing knowledge transfer and integration is very important for the project manager. This professional development is ongoing in the project management profession and in other areas where the project manager maintains subject matter expertise. This knowledge transfer and integration includes but is not limited to:

- ◆ Contribution of knowledge and expertise to others within the profession at the local, national, and global levels (e.g., communities of practice, international organizations); and
- ◆ Participation in training, continuing education, and development:
 - In the project management profession (e.g., universities, PMI);
 - In a related profession (e.g., systems engineering, configuration management); and
 - In other professions (e.g., information technology, aerospace).

3.3.6 ACROSS DISCIPLINES

A professional project manager may choose to orient and educate other professionals regarding the value of a project management approach to the organization. The project manager may serve as an informal ambassador by educating the organization as to the advantages of project management with regard to timeliness, quality, innovation, and resource management.

3.4 PROJECT MANAGER COMPETENCES

3.4.1 OVERVIEW

Recent PMI studies applied the *Project Manager Competency Development (PMCD) Framework* to the skills needed by project managers through the use of The PMI Talent Triangle® shown in Figure 3-2. The talent triangle focuses on three key skill sets:

- ◆ **Technical project management.** The knowledge, skills, and behaviors related to specific domains of project, program, and portfolio management. The technical aspects of performing one's role.
- ◆ **Leadership.** The knowledge, skills, and behaviors needed to guide, motivate, and direct a team, to help an organization achieve its business goals.
- ◆ **Strategic and business management.** The knowledge of and expertise in the industry and organization that enhanced performance and better delivers business outcomes.

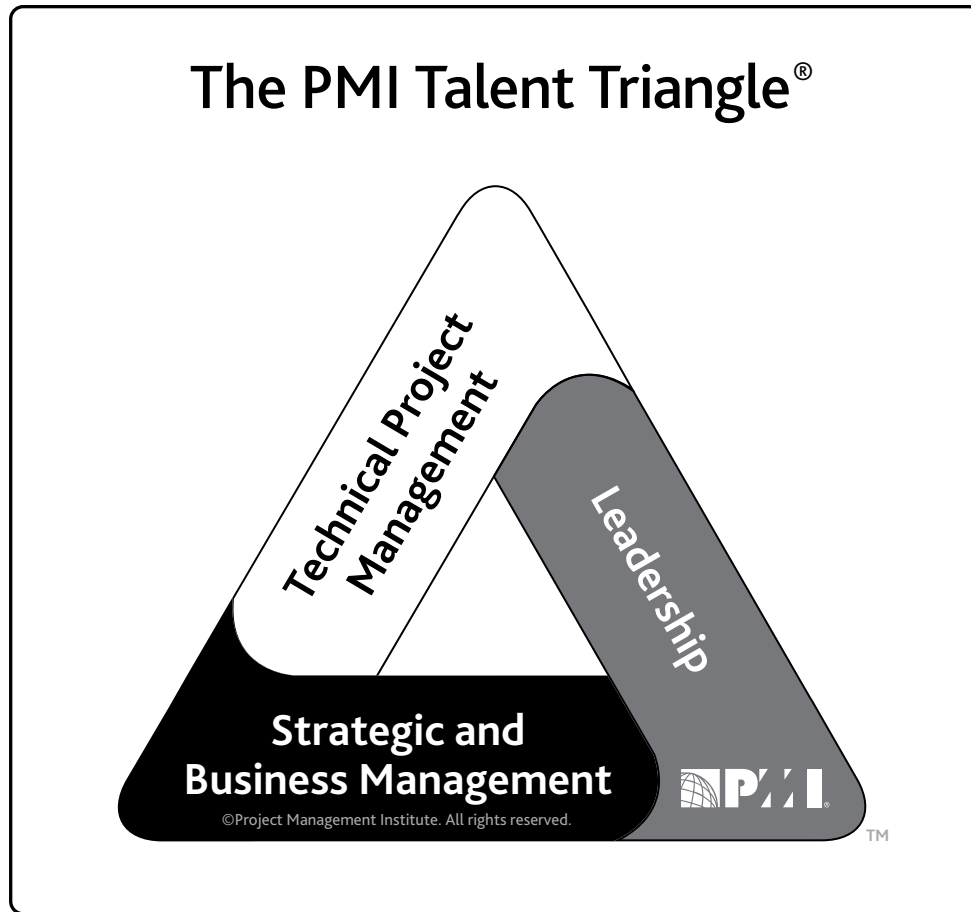


Figure 3-2. The PMI Talent Triangle®

While technical project management skills are core to program and project management, PMI research indicates that they are not enough in today's increasingly complicated and competitive global marketplace. Organizations are seeking added skills in leadership and business intelligence. Members of various organizations state their belief that these competencies can support longer-range strategic objectives that contribute to the bottom line. To be the most effective, project managers need to have a balance of these three skill sets.

3.4.2 TECHNICAL PROJECT MANAGEMENT SKILLS

Technical project management skills are defined as the skills to effectively apply project management knowledge to deliver the desired outcomes for programs or projects. There are numerous technical project management skills. The Knowledge Areas in this guide describe many of these necessary project management skills. Project managers frequently rely on expert judgment to perform well. Being aware of personal expertise and where to find others with the needed expertise are important for success as a project manager.

According to research, the top project managers consistently demonstrated several key skills including, but not limited to, the ability to:

- ◆ Focus on the critical technical project management elements for each project they manage. This focus is as simple as having the right artifacts readily available. At the top of the list were the following:
 - Critical success factors for the project,
 - Schedule,
 - Selected financial reports, and
 - Issue log.
- ◆ Tailor both traditional and agile tools, techniques, and methods for each project.
- ◆ Make time to plan thoroughly and prioritize diligently.
- ◆ Manage project elements, including, but not limited to, schedule, cost, resources, and risks.

3.4.3 STRATEGIC AND BUSINESS MANAGEMENT SKILLS

Strategic and business management skills involve the ability to see the high-level overview of the organization and effectively negotiate and implement decisions and actions that support strategic alignment and innovation. This ability may include a working knowledge of other functions such as finance, marketing, and operations. Strategic and business management skills may also include developing and applying pertinent product and industry expertise. This business knowledge is also known as domain knowledge. Project managers should be knowledgeable enough about the business to be able to:

- ◆ Explain to others the essential business aspects of a project;
- ◆ Work with the project sponsor, team, and subject matter experts to develop an appropriate project delivery strategy; and
- ◆ Implement that strategy in a way that maximizes the business value of the project.

In order to make the best decisions regarding the successful delivery of their projects, project managers should seek out and consider the expertise of the operational managers who run the business in their organization. These managers should know the work performed in their organization and how project plans will affect that work. The more the project manager is able to know about the project's subject matter, the better. At a minimum, the project manager should be knowledgeable enough to explain to others the following aspects of the organization:

- ◆ Strategy;
- ◆ Mission;
- ◆ Goals and objectives;
- ◆ Products and services;
- ◆ Operations (e.g., location, type, technology);
- ◆ The market and the market condition, such as customers, state of the market (i.e., growing or shrinking), and time-to-market factors, etc.; and
- ◆ Competition (e.g., what, who, position in the market place).

The project manager should apply the following knowledge and information about the organization to the project to ensure alignment:

- ◆ Strategy,
- ◆ Mission,
- ◆ Goals and objectives,
- ◆ Priority,
- ◆ Tactics, and
- ◆ Products or services (e.g., deliverables).

Strategic and business skills help the project manager to determine which business factors should be considered for their project. The project manager determines how these business and strategic factors could affect the project while understanding the interrelationship between the project and the organization. These factors include but are not limited to:

- ◆ Risks and issues,
- ◆ Financial implications,
- ◆ Cost versus benefits analysis (e.g., net present value, return on investment), including the various options considered,
- ◆ Business value,
- ◆ Benefits realization expectations and strategies, and
- ◆ Scope, budget, schedule, and quality.

Through the application of this business knowledge, a project manager has the ability to make the appropriate decisions and recommendations for a project. As conditions change, the project manager should be continuously working with the project sponsor to keep the business and the project strategies aligned.

3.4.4 LEADERSHIP SKILLS

Leadership skills involve the ability to guide, motivate, and direct a team. These skills may include demonstrating essential capabilities such as negotiation, resilience, communication, problem solving, critical thinking, and interpersonal skills. Projects are becoming increasingly more complicated with more and more businesses executing their strategy through projects. Project management is more than just working with numbers, templates, charts, graphs, and computing systems. A common denominator in all projects is people. People can be counted, but they are not numbers.

3.4.4.1 DEALING WITH PEOPLE

A large part of the project manager's role involves dealing with people. The project manager should study people's behaviors and motivations. The project manager should strive to be a good leader, because leadership is crucial to the success of projects in organizations. A project manager applies leadership skills and qualities when working with all project stakeholders, including the project team, the steering team, and project sponsors.

3.4.4.2 QUALITIES AND SKILLS OF A LEADER

Research shows that the qualities and skills of a leader include but are not limited to:

- ◆ Being a visionary (e.g., help to describe the products, goals, and objectives of the project; able to dream and translate those dreams for others);
- ◆ Being optimistic and positive;
- ◆ Being collaborative;
- ◆ Managing relationships and conflict by:
 - Building trust;
 - Satisfying concerns;
 - Seeking consensus;
 - Balancing competing and opposing goals;
 - Applying persuasion, negotiation, compromise, and conflict resolution skills;
 - Developing and nurturing personal and professional networks;
 - Taking a long-term view that relationships are just as important as the project; and
 - Continuously developing and applying political acumen.
- ◆ Communicating by:
 - Spending sufficient time communicating (research shows that top project managers spend about 90% of their time on a project in communicating);
 - Managing expectations;
 - Accepting feedback graciously;
 - Giving feedback constructively; and
 - Asking and listening.
- ◆ Being respectful (helping others retain their autonomy), courteous, friendly, kind, honest, trustworthy, loyal, and ethical;
- ◆ Exhibiting integrity and being culturally sensitive, courageous, a problem solver, and decisive;
- ◆ Giving credit to others where due;
- ◆ Being a life-long learner who is results- and action-oriented;

- ◆ Focusing on the important things, including:
 - Continuously prioritizing work by reviewing and adjusting as necessary;
 - Finding and using a prioritization method that works for them and the project;
 - Differentiating high-level strategic priorities, especially those related to critical success factors for the project;
 - Maintaining vigilance on primary project constraints;
 - Remaining flexible on tactical priorities; and
 - Being able to sift through massive amounts of information to obtain the most important information.
- ◆ Having a holistic and systemic view of the project, taking into account internal and external factors equally;
- ◆ Being able to apply critical thinking (e.g., application of analytical methods to reach decisions) and identify him or herself as a change agent.
- ◆ Being able to build effective teams, be service-oriented, and have fun and share humor effectively with team members.

3.4.4.3 POLITICS, POWER, AND GETTING THINGS DONE

Leadership and management are ultimately about being able to get things done. The skills and qualities noted help the project manager to achieve the project goals and objectives. At the root of many of these skills and qualities is the ability to deal with politics. Politics involves influence, negotiation, autonomy, and power.

Politics and its associated elements are not “good” or “bad,” “positive” or “negative” alone. The better the project manager understands how the organization works, the more likely he or she will be successful. The project manager observes and collects data about the project and organizational landscapes. The data then needs to be reviewed in the context of the project, the people involved, the organization, and the environment as a whole. This review yields the information and knowledge necessary for the project manager to plan and implement the most appropriate action. The project manager’s action is a result of selecting the right kind of power to influence and negotiate with others. Exercise of power also carries with it the responsibility of being sensitive to and respectful of other people. The effective action of the project manager maintains the autonomy of those involved. The project manager’s action results in the right people performing the activities necessary to fulfill the project’s objectives.

Power can originate with traits exhibited by the individual or the organization. Power is often supported by other people's perception of the leader. It is essential for project managers to be aware of their relationships with other people. Relationships enable project managers to get things done on the project. There are numerous forms of power at the disposal of project managers. Power and its use can be complex given its nature and the various factors at play in a project. Various forms of power include but are not limited to:

- ◆ Positional (sometimes called formal, authoritative, legitimate) (e.g., formal position granted in the organization or team);
- ◆ Informational (e.g., control of gathering or distribution);
- ◆ Referent (e.g., respect or admiration others hold for the individual, credibility gained);
- ◆ Situational (e.g., gained due to unique situation such as a specific crisis);
- ◆ Personal or charismatic (e.g., charm, attraction);
- ◆ Relational (e.g., participates in networking, connections, and alliances);
- ◆ Expert (e.g., skill, information possessed; experience, training, education, certification);
- ◆ Reward-oriented (e.g., ability to give praise, monetary or other desired items);
- ◆ Punitive or coercive (e.g., ability to invoke discipline or negative consequences);
- ◆ Ingratiating (e.g., application of flattery or other common ground to win favor or cooperation);
- ◆ Pressure-based (e.g., limit freedom of choice or movement for the purpose of gaining compliance to desired action);
- ◆ Guilt-based (e.g., imposition of obligation or sense of duty);
- ◆ Persuasive (e.g., ability to provide arguments that move people to a desired course of action); and
- ◆ Avoiding (e.g., refusing to participate).

Top project managers are proactive and intentional when it comes to power. These project managers will work to acquire the power and authority they need within the boundaries of organizational policies, protocols, and procedures rather than wait for it to be granted.

3.4.5 COMPARISON OF LEADERSHIP AND MANAGEMENT

The words *leadership* and *management* are often used interchangeably. However, they are not synonymous. The word *management* is more closely associated with directing another person to get from one point to another using a known set of expected behaviors. In contrast, leadership involves working with others through discussion or debate in order to guide them from one point to another.

The method that a project manager chooses to employ reveals a distinct difference in behavior, self-perception, and project role. Table 3-1 compares management and leadership on several important levels.

Project managers need to employ both leadership and management in order to be successful. The skill is in finding the right balance for each situation. The way in which management and leadership are employed often shows up in the project manager's leadership style.

Table 3-1. Team Management and Team Leadership Compared

Management	Leadership
Direct using positional power	Guide, influence, and collaborate using relational power
Maintain	Develop
Administrate	Innovate
Focus on systems and structure	Focus on relationships with people
Rely on control	Inspire trust
Focus on near-term goals	Focus on long-range vision
Ask how and when	Ask what and why
Focus on bottom line	Focus on the horizon
Accept status quo	Challenge status quo
Do things right	Do the right things
Focus on operational issues and problem solving	Focus on vision, alignment, motivation, and inspiration

3.4.5.1 LEADERSHIP STYLES

Project managers may lead their teams in many ways. The style a project manager selects may be a personal preference, or the result of the combination of multiple factors associated with the project. The style a project manager uses may change over time based on the factors in play. Major factors to consider include but are not limited to:

- ◆ Leader characteristics (e.g., attitudes, moods, needs, values, ethics);
- ◆ Team member characteristics (e.g., attitudes, moods, needs, values, ethics);
- ◆ Organizational characteristics (e.g., its purpose, structure, and type of work performed); and
- ◆ Environmental characteristics (e.g., social situation, economic state, and political elements).

Research describes numerous leadership styles that a project manager can adopt. Some of the most common examples of these styles include but are not limited to:

- ◆ Laissez-faire (e.g., allowing the team to make their own decisions and establish their own goals, also referred to as taking a hands-off style);
- ◆ Transactional (e.g., focus on goals, feedback, and accomplishment to determine rewards; management by exception);
- ◆ Servant leader (e.g., demonstrates commitment to serve and put other people first; focuses on other people's growth, learning, development, autonomy, and well-being; concentrates on relationships, community and collaboration; leadership is secondary and emerges after service);
- ◆ Transformational (e.g., empowering followers through idealized attributes and behaviors, inspirational motivation, encouragement for innovation and creativity, and individual consideration);
- ◆ Charismatic (e.g., able to inspire; is high-energy, enthusiastic, self-confident; holds strong convictions); and
- ◆ Interactional (e.g., a combination of transactional, transformational, and charismatic).

3.4.5.2 PERSONALITY

Personality refers to the individual differences in characteristic patterns of thinking, feeling, and behaving. Personality characteristics or traits include but are not limited to:

- ◆ Authentic (e.g., accepts others for what and who they are, show open concern);
- ◆ Courteous (e.g., ability to apply appropriate behavior and etiquette);
- ◆ Creative (e.g., ability to think abstractly, to see things differently, to innovate);
- ◆ Cultural (e.g., measure of sensitivity to other cultures including values, norms, and beliefs);
- ◆ Emotional (e.g., ability to perceive emotions and the information they present and to manage them; measure of interpersonal skills);
- ◆ Intellectual (e.g., measure of human intelligence over multiple aptitudes);
- ◆ Managerial (e.g., measure of management practice and potential);
- ◆ Political (e.g., measure of political intelligence and making things happen);
- ◆ Service-oriented (e.g., evidence of willingness to serve other people);
- ◆ Social (e.g., ability to understand and manage people); and
- ◆ Systemic (e.g., drive to understand and build systems).

An effective project manager will have some level of ability with each of these characteristics in order to be successful. Each project, organization, and situation requires that the project manager emphasize different aspects of personality.

3.5 PERFORMING INTEGRATION

The role of the project manager is twofold when performing integration on the project:

- ◆ Project managers play a key role in working with the project sponsor to understand the strategic objectives and ensure the alignment of the project objectives and results with those of the portfolio, program, and business areas. In this way, project managers contribute to the integration and execution of the strategy.
- ◆ Project managers are responsible for guiding the team to work together to focus on what is really essential at the project level. This is achieved through the integration of processes, knowledge, and people.

Integration is a critical skill for project managers. Integration is covered more in depth in the Project Integration Management Knowledge Area of this guide. Sections 3.5.1 through 3.5.4 focus on integration that takes place at three different levels: the process, cognitive, and context levels. Section 3.5.4 concludes by addressing complexity and integration.

3.5.1 PERFORMING INTEGRATION AT THE PROCESS LEVEL

Project management may be seen as a set of processes and activities that are undertaken to achieve the project objectives. Some of these processes may take place once (e.g., the initial creation of the project charter), but many others overlap and occur several times throughout the project. One example of this process overlap and multiple occurrences is a change in a requirement that impacts scope, schedule, or budget and requires a change request. Several project management processes such as the Control Scope process and the Perform Integrated Change Control process may involve a change request. The Perform Integrated Change Control process occurs throughout the project for integrating change requests.

Although there is no stated definition on how to integrate the project processes, it is clear that a project has a small chance of meeting its objective when the project manager fails to integrate the project processes where they interact.

3.5.2 INTEGRATION AT THE COGNITIVE LEVEL

There are many different ways to manage a project, and the method selected typically depends on the specific characteristics of the project including its size, how complicated the project or organization may be, and the culture of the performing organization. It is clear that the personal skills and abilities of the project manager are closely related to the way in which the project is managed.

The project manager should strive to become proficient in all of the Project Management Knowledge Areas. In concert with proficiency in these Knowledge Areas, the project manager applies experience, insight, leadership, and technical and business management skills to the project. Finally, it is through the project manager's ability to integrate the processes in these Knowledge Areas that makes it possible to achieve the desired project results.

3.5.3 INTEGRATION AT THE CONTEXT LEVEL

There have been many changes in the context in which business and projects take place today compared to a few decades ago. New technologies have been introduced. Social networks, multicultural aspects, virtual teams, and new values are part of the new reality of projects. An example is knowledge and people integration in the context of a large cross-functional project implementation involving multiple organizations. The project manager considers the implications of this context in communications planning and knowledge management for guiding the project team.

Project managers need to be cognizant of the project context and these new aspects when managing the integration. Then project managers can decide how to best use these new elements of the environment in their projects to achieve success.

3.5.4 INTEGRATION AND COMPLEXITY

Some projects may be referred to as complex and considered difficult to manage. In simple terms, complex and complicated are concepts often used to describe what is considered to be intricate or complicated.

Complexity within projects is a result of the organization's system behavior, human behavior, and the uncertainty at work in the organization or its environment. In *Navigating Complexity: A Practice Guide* [13], these three dimensions of complexity are defined as:

- ◆ **System behavior.** The interdependencies of components and systems.
- ◆ **Human behavior.** The interplay between diverse individuals and groups.
- ◆ **Ambiguity.** Uncertainty of emerging issues and lack of understanding or confusion.

Complexity itself is a perception of an individual based on personal experience, observation, and skill. Rather than being complex, a project is more accurately described as containing complexity. Portfolios, programs, and projects may contain elements of complexity.

When approaching the integration of a project, the project manager should consider elements that are both inside and outside of the project. The project manager should examine the characteristics or properties of the project. Complexity as a characteristic or property of a project is typically defined as:

- ◆ Containing multiple parts,
- ◆ Possessing a number of connections between the parts,
- ◆ Exhibiting dynamic interactions between the parts, and
- ◆ Exhibiting behavior produced as a result of those interactions that cannot be explained as the simple sum of the parts (e.g., emergent behavior).

Examining these various items that appear to make the project complex should help the project manager identify key areas when planning, managing, and controlling the project to ensure integration.