# 4

# The Human Side of Project Management

**CHAPTER OVERVIEW**

Chapter 4 focuses on the human side of project management. After studying this chapter, you should understand and be able to:

- Describe the three major types of formal organizational structures: functional, pure project, and matrix.
- Discuss the advantages and disadvantages of the functional, pure project, and matrix organizational structures.
- Describe the informal organization.
- Develop a stakeholder analysis.
- Describe the difference between a work group and a team.
- Describe and apply the concept of learning cycles and lessons learned as a basis for knowledge management.

## GLOBAL TECHNOLOGY SOLUTIONS

Tim Williams thought he was going to be the first one to arrive at the office, but as he turned into the parking lot, he could see Kellie Matthews' car in its usual spot. Tim parked his car next to Kellie's and strode into the GTS office. This was going to be an exciting and busy day because several new employees were going to report for their first day of work at GTS. He wanted to get to the office early so he could greet them and prepare for their day of orientation.

As Tim walked through the office door, he made a beeline for the small kitchen area where a fresh pot of coffee was waiting. The smell brought a smile to his face as he poured the dark liquid into his favorite coffee mug. Tim turned around as Kellie entered the kitchen area. "Good morning!" Kellie exclaimed. Tim never had been a morning person, and he wondered to himself how anyone could be so cheerful this early. He tried to

be as cheerful as possible given that he hadn't had his first cup of coffee. "Good morning to you, too." Tim could see that Kellie was at least one cup of coffee ahead of him, which gave him some consolation. "Care for another cup?" Tim asked as he offered to pour a cup for Kellie. "Sure, thanks," said Kellie as she held the cup out.

As Tim poured the coffee for Kellie, she smiled and said, "After you left yesterday, I received a phone call from Sitaramin. He said that he would accept our offer and join us at GTS next week." That news seemed to wake Tim up. "That's great!" Tim exclaimed.

Both Tim and Kellie have been busy during the last two weeks interviewing and negotiating with a number of candidates to join GTS. With the addition of Sitaramin, the team for the Husky Air project would be complete.

Kellie sipped her coffee and said, "Well, our budget for salaries is going to be slightly higher than we had planned, but I guess that can be expected given the job market for information systems professionals and the fact that we had to pay a premium because we're a start-up company. But if all goes well, I'm pretty sure that the Husky Air project will still be profitable for us. We can develop a detailed project plan and use the latest software metrics for planning the project schedule and budget, but the success of this project rests largely on how well this team performs."

Tim agreed, looked at his watch and said, "We have about an hour before our new employees arrive. I suggest we go over the details of the day's agenda one more time." Tim refilled his coffee mug and Kellie's before they made their way to the conference room where the orientation would be held. As they walked down the hall, Tim thought about what Kellie had said. He knew that it was going to be a challenge to form a cohesive and high-performance team from people who would meet for the first time in less than an hour.

*Things to Think About*

1. What feelings might a new employee have when starting a new job?
2. What could GTS do to help new employees transition successfully to their new jobs?
3. Why does the success of a project rest largely on the performance of the team?
4. How can a group of individuals become a cohesive and high-performing team?

# INTRODUCTION

The key ingredients to IT Project management are people, processes, and technology. Technology is a tool, while processes provide a structure and path for managing and carrying out the project. The success of a project, however, is often determined by the various project stakeholders, as well as who is (or who is not) on the project team.

In this chapter, we will discuss the human side of project management. According to the Project Management Body of Knowledge, the area of project human resource management entails: (1) organizational planning, (2) staff acquisition, and (3) team development.

Organizational planning focuses on the roles, responsibilities, and relationships among the project stakeholders. These individuals or groups can be internal or external to the project. Moreover, organizational planning involves creating a project structure that will support the project processes and stakeholders so that the project is carried out efficiently and effectively.

**Staff acquisition** includes staffing the project with the best available human resources. Effective staffing involves having policies, procedures, and practices to guide the recruitment of appropriately skilled and experienced staff. Moreover, it may include negotiating for staff from other functional areas within the organization. Team development involves creating an environment to develop and support the individual team members and the team itself.

This chapter will expand upon these three PMBOK concepts and integrate several relatively recent concepts for understanding the human side of IT project management. In the next section, we will focus on project and organizational planning. Three primary organizational structures—the **functional, project, and matrix**—will be described. In addition, the various opportunities and challenges for projects conducted under each structure will be discussed. As a project manager or project team member, it is important to understand an organization's structure since this will determine authorities, roles, responsibilities, communication channels, and availability of resources.

While the formal organizational structure defines official roles, responsibilities, and reporting relationships, informal relationships will exist as well. It is important to understand why these informal structures and relationships exist and how they can influence the relationships among the different project stakeholders. In addition, understanding both the formal and informal organizations will help you to understand not only who makes certain decisions, but also why certain decisions are made.

We will also focus on the various roles of the project manager. In general, one of the greatest responsibilities of the project manager is the selection and recruitment of the project team. Once the project team is in place, the project manager must also ensure that the project team members work together to achieve the project's MOV. Therefore, the language and discipline *of real teams* versus *workgroups* will be introduced. These concepts will provide the basis for understanding the dynamics of the project team.

Once the project team is in place, it is important that the project team learn from each other and from past project experiences. Thus, the idea of learning cycles will be introduced as a tool for team learning and for capturing lessons learned that can be documented, stored, and retrieved using a knowledge management system.

In the last section of this chapter, we will focus on the project environment. In addition to staffing the project, the project manager must create an environment to support the project team. If necessary, this includes appropriating a suitable place for the team to work and ensuring that the team has the proper tools and supplies needed to accomplish their work.

## ORGANIZATION AND PROJECT PLANNING

The performance of an organization or a project is influenced largely by how well its resources are organized. In general, structures are created within an organization to manage the input, processing, and output of resources. For example, departments or areas based on the specialized skills needed to manage a particular resource are created—i.e., accounting and finance manages the money resources, personnel manages the human resources, and information systems manages the information resource. As a result, many organizations adopt a structure based upon function. Other organizations may adopt a structure based on the products it sells or its customers. These structures may use brand management or geographical divisions.

However, the structure of an organization must fit its strategy, and since organizations may follow different strategies, it makes sense that no single structure can work well for every organization. Therefore, there are different organizational structures and ways to efficiently and effectively manage not only the organizational resources but also the work and processes involved. As long as the firm performs well, a particular structure and strategy will exist. On the other hand, when a firm performs poorly, a change in structure and/or strategy may be required.

Projects are part of an organization and can be thought of as micro organizations that require resources, processes, and structure. Moreover, these resources, processes, and structures are determined largely by the organizational structure of the supporting or parent organization, which may determine or influence the availability of resources, reporting relationships, and project roles and responsibilities. Therefore, it is important to understand how the project interfaces with the host or parent organization and how the project itself will be organized. In this section, we will focus on three formal structures that tie projects explicitly to the organization. Each structure provides distinct opportunities and challenges, and choosing and implementing the correct structure can have a major impact on both the project and the organization.
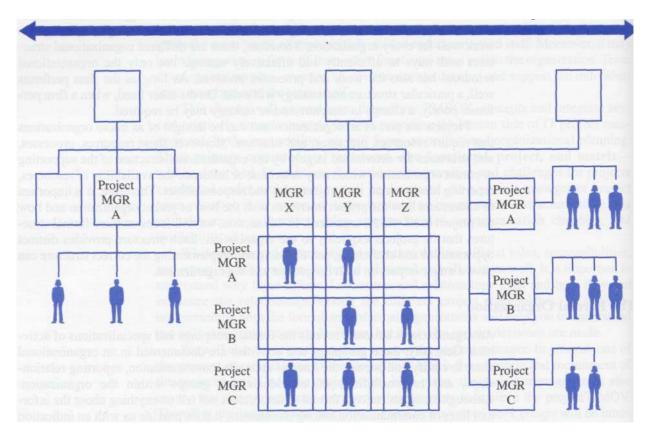
## The **Formal Organization**

An organization's structure reveals the formal groupings and specializations of activities. Generally, these groupings and activities are documented in an organizational chart to clarify and portray the lines of authority, communication, reporting relationships, and responsibilities of individuals and groups within the organization. Although an organization's formal structure does not tell us anything about the informal lines of communication among its subunits, it does provide us with an indication of how a project will interface with the parent or supporting organization. In other words, the formal organizational structure will determine how resources are allocated, who has authority over those resources, and who is really in charge of the project.

Figure 4.1 illustrates the three most common structures—the functional, matrix, and project-based organization. Keep in mind that these organizations are not exhaustive—they represent a continuum of approaches that may evolve over time or as the result of a unique situation. An organization may choose to combine these forms any number of ways to create a hybrid organization such as a **functional matrix** or **project matrix.**

*The Functional Organization* The functional organizational structure may be thought of as the more traditional organizational form. This particular structure is based upon organizing resources to perform specialized tasks or activities in order to attain the goals of the organization. As Figure 4.2 illustrates, individuals and subunits (i.e., groups of individuals) perform similar functions and have similar areas of expertise. Subsequently, projects are managed within the existing functional hierarchy.

Projects in a functional organization are typically coordinated through customary channels and housed within a particular function. For example, a project to install a new machine would be a self-contained project within the manufacturing function because the expertise required for the project would reside within the manufacturing subunit. The project manager would most likely be a senior manufacturing manager, and the project team would be made up of individuals from the engineering and production areas. As a result, the manufacturing subunit would be responsible for managing the project and for supplying and coordinating all of the resources dedicated to the project.

*Functional*                                    *Matrix*

                                                                    *Project-based*

**Figure 4.1** Organizational Structures

However, a project may cross functional boundaries. In the case of an information technology project, the knowledge and expertise to design and develop an application may reside in the information systems subunit, while the domain or functional knowledge resides in one of the functional subunits. As a result, the project team may consist of individuals from two or more functional areas. There are two main issues that must be resolved at the outset of a project: Who will be responsible for the project? What resources will each subunit provide?

There are a number of advantages for projects sponsored by organizations with functional structures. These include:

- *Increased flexibility*—Subject matter experts and other resources can be assigned to the project as needed. In addition, an individual can be part of the project team on a full-time or part-time basis. Once the project is completed, the project team members can return to their respective functional units.

- *Breadth and depth of knowledge and experience*—Individuals from a par ticular subunit can bring a wealth of knowledge, expertise, and experience to the project. This knowledge can be expanded even further as a result of their experiences with the project. As a result, the project experience may lead to greater opportunities for career advancement within the subunit. If the project crosses functional areas, an opportunity exists for these individ uals to learn from each so that a less parochial solution can be developed.

- *Less duplication*—Coordination of resources and activities can lead to less duplication of resources across projects since specialization of skills and

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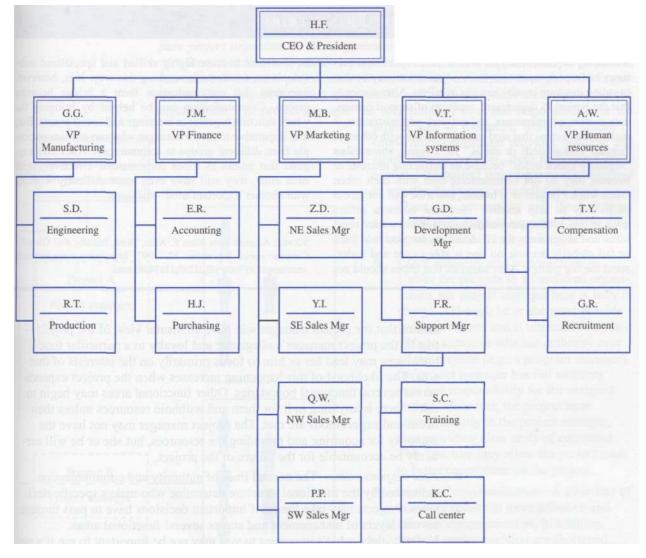
Figure 4.2 Functional Organizational Structure

resources are housed within a functional area. The project also tends to be more focused because a primary functional area is responsible for and ultimately takes ownership of the project.

There are, however, several disadvantages associated with projects sponsored by organizations with functional structures. These include:

• *Determining authority and responsibility*—As was mentioned previously, determining who has authority and responsibility for a project must be resolved at the outset, especially when the project involves more than one functional area. For example, in an IT project, will the project manager be from the IS department or from the functional area? A project manager from the IS area may have knowledge and expertise with respect to the technology, but lack critical knowledge about the business. On the other hand, a project manager from the functional area may understand the business, but lack an understanding of the technology. Furthermore, there is a

## WARRING TRIBES

According to Allen Alter, the reason the IS function sometimes has a poor reputation in an organization may be due to strong in-group loyalty he calls tribalism. Alter contends that the typical IS department, made up of support centers, data centers, programmers, and network administration, is really several clans that tend to stick together with others of "similar backgrounds or status." As a result, some tribes "regularly knock heads" because of conflicting interests or because they do not communicate well with each other. Often when a project is in trouble, one tribe will not go out of its way to help another. Then, the business suffers because this indifference results in delays and wasted time. Ideas and suggestions for IT initiatives are also held back or fail globally because no one is able to see and understand the big picture. Alter suggests that tribes should not

be abolished because highly skilled and specialized individuals are comfortable working this way. It is, however, important that communication form a bridge between groups. Communication can be helped by bringing the whole function together in meetings and social events. But, it is imperative to pick a manager who can encourage people from different groups to communicate. Alter also suggests that unless IS tribes communicate effectively with each other, they will have even more difficulty working with another important tribe—the users.

SOURCE: Adapted from Allen E. Alter, Think Tribally, Fail Globally, *Computer-world,* November 17, 1997, http://www.computerworld .com/news/1997/story/0,11280,11174,00.html.

chance that the project manager will have an insular view of the project—that is, the project manager's allegiance and loyalty to a particular functional area may lead her or him to focus primarily on the interests of that area. The likelihood of this happening increases when the project expands across several functional boundaries. Other functional areas may begin to ask if there is anything in it for them and withhold resources unless their needs and expectations are met. The project manager may not have the authority for acquiring and providing the resources, but she or he will certainly be accountable for the failure of the project.

*Poor response time*—The normal lines of authority and communication delineated by the functional structure determine who makes specific decisions. Projects may take longer if important decisions have to pass through several layers of management and across several functional areas. Unfortunately, what's important to you may not be important to me if a particular functional unit has a dominant role or interest in a project. Due to the potential for parochial interests, problem resolution may break down because of finger pointing, trying to place blame for the problem rather than focusing on problem resolution.

*Poor integration*—The culture of the organization may encourage functional areas to insulate themselves from the rest of the organization as a way to avoid many of these parochial issues. However, this can result in two problems: First, the individuals in a functional area may act in their own best interests instead of taking a holistic or organizational view of the project. Second, the functional area may attempt to become self-sufficient by acquiring knowledge, expertise, and technology outside of its normal area of specialization. While specialization of skills and resources can *reduce* duplication of activities and resources, the functional structure can also *increase* this duplication. It may lead to an organization of warring tribes as functional areas compete for resources and blur lines of responsibility.

*The Project Organization* At the other end of the spectrum from the functional organization is the project organization (see Figure 4.3). Sometimes referred to as the *pure project organization,* this organizational structure supports projects as the dominant form of business. Typically, a project organization will support multiple projects at one time and integrate project management tools and techniques throughout the organization. Each project is treated as a separate and relatively independent unit within the organization. The project manager has sole authority over and responsibility for the project and its resources, while the parent or supporting organization provides financial and administrative controls. Both the project manager and the project team are typically assigned to a particular project on a full-time basis.

There are advantages and disadvantages associated with projects supported by the project organization. Advantages include:

*Clear authority and responsibility*—Unlike the projects in a functional organization, the project manager here is fully in charge. Although he or she must provide progress reports and is ultimately responsible to someone who has authority over all the projects (e.g., a program manager), the project manager has full authority over and responsibility for the assigned project. Moreover, the project team reports directly to the project manager, thus providing clear unity of command. This structure may allow the project team to better concentrate on the project.

*Improved communication*—A clear line of authority results in more effective and efficient communication. In addition, lines of communication are shortened because the project manager is able to bypass the normal channels of distribution associated with the functional organizational structure. This structure thus results in more efficient communication and fewer communication problems.

*High level of integration*—Since communication across the organization is increased, the potential for a higher level of cross integration across the organization exists. For example, the project team may include experts with technical skills or knowledge of the business. Fewer conflicts over resources arise since each project has resources dedicated solely to it.



Figure 4.3  The Project Organization

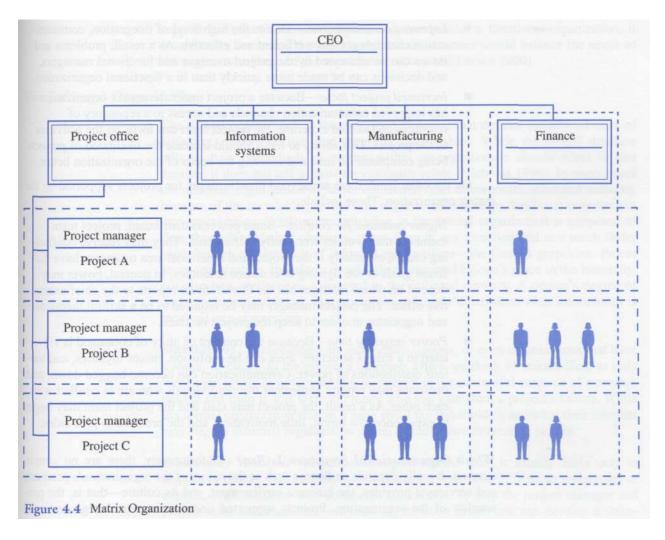Projects supported by project organization structures face several disadvantages. These disadvantages include:

- *Project isolation*—Since each project may be thought of as a self-contained unit, there is the potential for each project to become isolated from other projects in the organization. Unless a project management office or pro gram manager oversees each project, inconsistencies in policies and project management approaches may occur across projects. In addition, project managers and project teams may have little opportunity to share ideas and experiences with other project managers and project teams, thus hindering learning throughout the organization.

- *Duplication of effort*—While the potential for conflicts over resources is reduced, various projects may require resources that are duplicated on other projects. Project managers may try to stockpile the best people and other resources that could be shared with other projects. Each project must then support the salaries of people who are part of the dedicated project team but whose services are not needed at all times. There is then the problem of what to do with these people when the project is completed and they have not been assigned to another project. Many consulting firms, for example, refer to people who are between projects as being on *the beach* or *on the bench.* While awaiting the next assignment, consultants are often sent to training in order to make the most of their idle time.

- *Projectitis*—Projectitis sometimes occurs when the project manager and project team develop a strong attachment to the project and to each other. As a result, these individuals may have a difficult time letting go, and the proj ect begins to take on a life of its own with no real end in sight (Meredith and Mantel 2000). The program manager or project office must ensure that proper controls are in place to reduce the likelihood of this happening.

*The Matrix Organization* The third type of organizational form is the matrix structure. The matrix organization is a combination of the vertical functional structure and the horizontal project structure (see Figure 4.4). As a result, the matrix organiza- tion provides many of the opportunities and challenges associated with the functional and project organizations.

The main feature of the matrix organization is the ability to integrate areas and resources throughout an organization. Moreover, people with specialized skills can be assigned to the project either on a part-time or on a more permanent basis. Unfortunately, **unity of command** is violated since each project team member will have more than one boss, leading to the possibility of confusion, frustration, conflict, and mixed loyalties. The functional manager will be responsible for providing many of the people and other resources to the project, while the project manager is respon- sible for coordinating these resources. In short, the project manager coordinates all the project activities for the functional areas, while the functional areas provide the wherewithal to carry out those activities.

The matrix organization can take on various forms that can create **hybrid organ- izations.** The most common forms include:

- *Balanced matrix*—In the balanced matrix form, the project manager focuses on defining all of the activities of the project, while the functional managers determine how those activities will be carried out.

**Figure 4.4** Matrix Organization

- *Functional matrix*—The functional matrix organization tends to take on more of the qualities of a functional organization. Here the project manager focuses on coordinating the project activities, while the functional managers are responsible for completing those activities that are related to their particular area.

- *Project matrix*—It follows, then, that a project matrix structure would take on mote of the qualities of a project organization. In this case, the project manager has most of the authority and responsibility for defining and completing the project activities, while the functional managers provide guidance and resources, as needed.

There are several advantages and disadvantages for projects supported by a matrix organization. The advantages include:

- *High level of integration*—The cross-functional nature of the matrix structure allows for the access and sharing of skilled people and resources from across the organization, and people within the organization can be assigned to more than one project. This ability to share can result in less duplication of resources and activities.

- *Improved communication*—Due to the high level of integration, communication channels are more efficient and effective. As a result, problems and issues can be addressed by the project manager and functional managers, and decisions can be made more quickly than in a functional organization.
- *Increased project focus*—Because a project under the matrix organization has improved communication channels and access to a repository of resources and skilled expertise, the project team can focus on the activities of the project. This ability to focus should increase the likelihood of projects being completed on time and meeting the needs of the organization better.

On the other hand, there are several disadvantages for projects supported by the matrix organization. These include:

- *Higher potential for conflict*—Since power is distributed, project team members may wonder who really is their boss. They may receive conflicting orders, especially if the project and functional area managers have different goals or are fighting over scarce resources. In general, power may depend on which manager has the fewest direct reports to the chief executive office. The project manager may be required to be a skillful mediator and negotiator in order to keep the project on track.
- *Poorer response time*—Because the concept of unity of command is violated in a matrix structure, there can be confusion, mixed loyalties, and various distributions of power. Communication can become bogged down, and decisions may require agreement from individuals who are in conflict with each other. As a result, the project may stall and the project team may begin to experience low moral, little motivation, and the pressure to pick sides.

*Which Organizational Structure Is Best?* Unfortunately, there are no simple answers. It really depends on factors such as the nature of the organization's products and services it provides, the business environment, and its culture—that is, the personality of the organization. Projects supported under a functional organizational structure may work best when the organization focuses on a few internal projects. On the other hand, a project organizational structure may work better if an organization takes on a large number of external projects. Subsequently, most consulting firms follow the project organization structure. On the other hand, the matrix organizational structure may work best when an organization takes on projects that require a cross-functional approach.

There has been some research in this area. For example, Larson and Gobeli (1988) surveyed more than 1,600 project management professionals. The results of their study suggest that both project and functional managers have a strong preference for the project or project matrix organization. The functional and functional matrix organizational structures were viewed as the least effective, and the balanced matrix structure was seen as only marginally effective. Larson and Gobeli suggest that the success of a project is linked directly to the project manager's degree of autonomy and authority.

The success of large, complex projects may require a concentrated project focus that can be best supported by the project or project-matrix organization. On the other hand, the matrix organizational structure may work well when an organization cannot dedicate scarce staff and resources to a project or when a cross-functional focus is needed. If a project is undertaken within one specific area of the organization, then a functional-matrix structure would be effective. Although there is little evidence to

support the effectiveness of projects supported under a functional organization, it would make sense that the best organizational structure would balance the needs of the project with those of the organization (Gray and Larson 2000).

## The Informal Organization

The formal organization is the published structure that defines the official lines of authority, responsibilities, and reporting relationships. While the formal structure tells us how individuals or groups within an organization *should* relate to one another, it does not tell us how they *actually* relate (Nicholas 1990). In many cases the informal organization bypasses the formal lines of communication and authority because of the inevitable positive and negative relationships that occur over time in any organization. While communication in the formal organization is supposed to flow through published channels, it can flow in any direction and at a much faster pace through the network of informal relationships—the famous grapevine. Power in an organization, therefore, is not only determined by one's place in the hierarchy, but also how well one is connected in the informal network. A person's degree of connectedness in the informal organization largely determines what information is received or not received.

*Stakeholders* Stakeholders are individuals, groups, or even organizations that have a stake, or claim, in the project's outcome. Often we think of stakeholders as only those individuals or groups having an interest in the successful outcome of a project, but the sad truth is that there are many who can gain from a project's failure. While the formal organization tells us a little about the stakeholders and what their interests may be, the informal organization paints a much more interesting picture.

*Stakeholder Analysis* A published organizational chart is usually fairly easy to acquire or create. The informal organization may be more difficult to understand or explain, even for those well-connected individuals. To help the project manager and project team understand the informal organization better, one can develop a stakeholder analysis as a means of determining who should be involved with the project and understanding the role that they must play. To develop a stakeholder analysis, one may start with the published organizational chart and then add to it as the complexities of the informal organization become known. Since the purpose of the stakeholder analysis is to understand the informal organization, it may be best to view this as an exercise rather than a formal document to be made public. The following steps provide a guide for developing a stakeholder analysis:

1. Develop a list of stakeholders. Include individuals, groups, and organiza tions that must provide resources to the project or who have an interest in the successful or unsuccessful outcome of the project.

2. Next to each stakeholder, identify the stakeholder's interest in the project by giving the stakeholder a "1" if they have an positive interest in the pro ject's outcome or a "—1" if they have a negative interest. Neutral individu als or groups can be given a "0". If you are not sure, then give a stakeholder a "?".

3. Next, it may be useful to gauge the amount of influence each stakeholder has over the project. One can use a scale from 0 to 5, with zero meaning no influence and five meaning extremely high influence—that is, this person or group could terminate the project.

4. The fourth step involves defining a role for each of the stakeholders. For example, every project should have a champion or someone prominent within the organization who will be a public supporter of the project. In addition, it is important to identify the owner of the project. This list may include an individual, group, or organization that will accept the transfer of the project's product. Other roles may include consultant, decision maker, advocate, ally, rival, foe, and so forth. Use adjectives or metaphors that pro vide a clear meaning and picture of the stakeholder.

5. Once you determine who has an interest in the project, what that interest is, and what influence they may have, it may be useful to identify an objective for each stakeholder. This may include such things as providing specific resources, expertise, or guidance navigating through the political waters of the organization. In the case of potential adversarial stakeholders, this may require getting their acceptance or approval concerning certain aspects of the project.

6. Lastly, it is important to identify various strategies for each stakeholder. These strategies may require building, maintaining, improving, or re-estab lishing relationships. In short, this list should include a short description of how the objective could be attained.

The exercise for developing a stakeholder analysis can be conducted and summarized in a table such as the template illustrated in Figure 4.5.

## THE PROJECT TEAM

The word *team* has different meanings for each of us. As a result of past experiences with teams, those meanings probably have both positive and negative connotations. Information technology projects require various resources; but people are the most valuable resource and have the greatest influence on the project's outcome. Indeed, the human resource of a systems development project will consume up to 80 percent of its budget (McLeod and Smith 1996). It is important, then, that the project manager and project team members be chosen wisely. In addition, people must be sure to support the project team so that project success is not a random event.

### The Roles of the Project Manager

One of the most critical decisions in project management is selecting a project manager or team leader. The project manager is usually assigned to the project at the earliest stages of the project life cycle, but a new one may be brought in as replacement in the later stages of a project.

| Stakeholder | Interest | Influence | Role | Objective | Strategy |
|---|---|---|---|---|---|
|  |  |  |  |  |  |

**Figure 4.5**  Stakeholder Analysis Chart

The project manager must play many roles. First, the project manager must play a managerial role that focuses on planning, organizing, and controlling. The project manager, for example, is responsible for developing the project plan, organizing the project resources, and then overseeing execution of the plan. The project manager must also perform many administrative functions, including performance reviews, project tracking and reporting, and other general day-to-day responsibilities.

Although this work sounds fairly simple and straightforward, even the best thought-out plans do not always go the way we expect. Thus, the project manager must know when to stay the course and when to adapt or change the project plan by expediting certain activities or acting as a problem solver.

The success of the project, of course, depends not only on the project team, but also on the contributions and support of all project stakeholders as well. Therefore, the project manager must build and nurture the relationships among the various stakeholders. To do this effectively, the project manager must play a strong leadership role. While the managerial role focuses on planning, organizing, and controlling, leadership centers on getting people motivated and then headed down the right path towards a common goal.

Choosing a project manager for a project is analogous to hiring an employee. It is important to look at his or her background, knowledge, skill sets, and overall strengths and weaknesses. Some attributes of a successful project manager include:

- *The ability to communicate with people*—A project manager must have strong communication skills. A project manager need not to be a great moti vational speaker, but should have the ability to connect with people, share a common vision, and get everyone to respond or head in the right direction.

- *The ability to deal with people*—Aside from being a good communicator, a project manager must have the soft skills for dealing with people, their egos, and their agendas. The project manager must be a good listener, hear ing what people say and understanding what they mean. This skill allows the project manager to get below the surface of issues when people are not being completely honest or open without being annoying or alienating them. A project manager must also have a sense of humor. Often, project managers and project teams are expected to perform during stressful situa tions, and a sense of humor can make these situations more manageable. Although a project manager does not have to be everyone's best friend, people should feel that they are at least approachable and should be com fortable talking with him or her. In addition, the project manager must also be willing to share knowledge and skills with others and be willing to help each individual develop to her or his fullest potential.

- *The ability to create and sustain relationships*—A good project manager must be able to build bridges instead of walls. Acting as a peacemaker or negotiator among the project client or sponsor, top management, the project team, customers, suppliers, vendors, subcontractors, and so forth may be necessary. In addition, the project manager should be a good salesperson. An effective project manager must continually sell the value of the project to all of the stakeholders and influence others over whom he or she has no direct authority.

- *The ability to organize*—A project manager must be good at organizing— developing the project plan, acquiring resources, and creating an effective project environment. The project manager must also know and understand both the details and the big picture, which requires a familiarity with the

details of the project plan and also an understanding of how contingencies may impact the plan.

## Team Selection and Acquisition

Another critical task of a project manager is selecting and staffing the project. Staffing involves recruiting and assigning people to the project team. Selecting the right mix of people, with both technical and non-technical skills, is a decision that can influence the outcome of the project. Although a project manager should strive to acquire the brightest and the best, project team members should be chosen based on the following skills:

- *Technology skills*—Depending upon the nature of the project, members with specific technology skill sets— programmers, systems analysts, network specialist, and so forth—will be required.

- *Business/organization skills*—Although technology skills are important in IT projects, it is also important to have people or access to people with domain knowledge. These skills include knowledge or expertise within a specific domain (e.g., compensation planning) as well as knowledge of a particular organization or industry (e.g., healthcare) to augment the technical skill requirements.

- *Interpersonal skills*—The ability to communicate with other team members and other stakeholders is an important skill for team members. It is important not only for the team members to understand one another, but also for the project team to understand the project sponsor's needs. Due to the nature of many projects, other desirable characteristics should include creativity, a tolerance for ambiguity, acceptance of diversity, flexibility in adapting to different roles, and the capacity to take calculated risks.

The size or scope of the project will determine the size of the project team. Although smaller teams have the potential to work faster and develop a product in a shorter time, larger teams can provide a larger knowledge base and different perspectives. Unfortunately, there is also a tendency for larger teams to function more slowly. One solution to this latter problem may be creating subgroups to make the project more manageable and to facilitate communication and action.

The project manager may recruit project team members internally or externally. For example, in the functional or matrix organization, people may be acquired from the functional areas. In a project organization, a project manager may recruit people who are currently in-between projects or who will be soon *rolling off an* existing project. The project manager may have to negotiate with other managers for specific individuals with specific skills or areas of expertise. On the other hand, a project manager may have to hire individuals from outside the organization. In either case, for a particular project, training may be required. Therefore, the timing of when a particular individual can begin work on the project is a significant factor that can impact the project's schedule.

## Team Performance

The project team has a direct influence on the outcome of the project. Therefore, it is important the team's performance be of the utmost concern to the project manager. In *The Wisdom of Teams,* Jon R. Katzenbach and Douglas K. Smith (1999) provide an insightful and highly usable approach for understanding the language and discipline

## IS SWAT TEAMS

SWAT (Special Weapons And Tactics) teams are law enforcement teams that are highly trained to respond to special situations. The term *SWAT has* also been applied to expert teams in the IS world. Drawing upon the analogy of police SWAT teams, these IS teams came about to respond effectively to client/server projects; but this same idea could be applied to many other types of projects. The basic idea of an IS SWAT team is to assemble a small team of highly skilled developers who are experts in the latest technology. By pooling the knowledge, expertise, and talents of a select few individuals, the team can harness the creative power of the group and develop a solution that is much more effective than an individual could. Because everyone is a highly skilled technologist, IS SWAT teams give individual team members the opportunity to learn more from

each other than they would on their own. In addition, working in groups allows the team members to hone their people skills because working in a group requires greater communication and the art of compromise. On the downside, people working on IS SWAT teams must be comfortable working in a very unstructured environment. Often, the beginning of the project is chaotic and the teams reflect the individual personalities of the individuals involved. In addition, IS SWAT teams involve high profile projects. While success can lead to career advancement for the team members, project failure can reflect badly on them.

SOURCE: Adapted from Linda Wilson, SWAT Teams, *Computerworld,* October 23, 1995, http://www.computerworld.com/news/1995/story /0,11280,1946,00.html.

of teams. In refining the language of teams, they provide a distinction between work groups and several types of teams.

*Work Groups* The work group is based on the traditional approach where a single leader is in control, makes most of the decisions, delegates to subordinates, and monitors the progress of the assigned tasks. Therefore, the performance of a work group depends greatly on the leader.

A work group can also include members who interact to share information, best practices, or ideas. Although the members may be interested in each other's success, work groups do not necessarily share the same performance goals, do not necessarily provide joint work-products, and are not necessarily held mutually accountable. A study group is an example of a work group. You and several members of a class may find it mutually beneficial to study together for an exam, but each of you (hopefully!) will work on the exam individually. The grade you receive on the exam is not a direct result of the work produced by the study group, but rather of your individual performance on the exam. In an organizational context, managers may form work groups to share information and help decide direction or policy, but performance will ultimately be a reflection of each manager and not the group. Work groups or single leader groups are viable and useful in many situations.

*Real Teams* In cases where several individuals must produce a joint work product, teams are a better idea. More specifically, Katzenbach and Smith (1999) define a team as:

> a small number of people with complimentary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable. (45)

Moreover, calling a group of people a team does not make it one nor does working together make a group a team. Teamwork focuses on performance, not on becoming a team. Subsequently, there are several *team basics* that define a real team:

- *A small number of people*—Ideally, a project team must be between two and twelve people. Although a large number of people can become a team,

a large team can become a problem in terms of logistics and communication. As a result, a large team should break into subteams rather than try to function as one large unit.

- *Complementary skills*—For achieving the team's goal, a team must have or develop the right mix of skills that are complementary. These skills include:

  Technical or functional expertise *

  Problem-solving or decision-making skills

  Interpersonal skills—that is, people skills

- *Commitment to a common purpose and performance goals*—Katzenbach and Smith distinguish between activity goals (e.g., install a local area net work) and performance goals (e.g., ship all orders within twenty-four hours of when they are received). The concept of a performance goal is similar to the concept of the MOV and sets the tone and aspirations of the team while providing a foundation for creating a common team purpose. As a result, the team develops direction, momentum, and commitment to its work. Moreover, a common performance goal and purpose inspires pride because people understand how their joint work product will impact the organiza tion. A common goal also gives the team an identity that goes beyond the individuals involved.

- *Commitment to a common approach*—Although teams must have a com mon purpose and goal, they must also develop a common approach to how they will work together. Teams should spend as much time developing their approach as they do defining their goal and purpose. A common work approach should focus not only on economic and administrative issues and challenges, but also on the social issues and challenges that will shape how the team works together.

- *Mutual accountability*—A group can never become a team unless members hold themselves mutually accountable. The notion that "we hold ourselves accountable" is much more powerful than "the boss holds me accountable." Subsequently, no team can exist if everyone focuses on his or her individual accountability. Mutual accountability requires a sincere promise that each team member makes to herself or himself and to the other members of the team. This accountability requires both commitment and trust because it coun ters many cultures' emphasis on individualism. In short, it can be difficult for many people to put their careers and reputations in the hands of others. Unless a common approach and purpose has been forged as a team, individuals may have a difficult time holding themselves accountable as a team.

Based upon their in-depth study of several teams, Katzenbach and Smith provide several common sense findings:

- *Teams tend to flourish on a demanding performance challenge.* A clear per formance goal is more important to team success than team-building exer cises, special initiatives, or seeking team members with ideal profiles.

- *The team basics are often overlooked.* The weakest of all groups is the pseudo team, which is not focused on a common performance goal. If a team cannot shape a common purpose, it is doomed to achieving mediocre results. We cannot just tell a group of individuals to be a team.

- *Most organizations prefer individual accountability to team accountability.* Most job descriptions, compensation plans, and career paths emphasize

individual accomplishments and, therefore, tend to make people uncomfortable trusting their careers to outcomes dependent on the performance of others.

Katzenbach and Smith provide some *uncommon sense* findings as well:

- *Strong performance goals tend to spawn more real teams.* A project team cannot become a real team just because we call them a team or require them to participate in team-building activities or exercises. However, their findings suggest that real teams tend to thrive as a result of clearly defined performance-based goals.

- *High performance teams are rare.* In their study of teams, Katzenbach and Smith identified high performance teams. These are real teams that outper form all other teams and even the expectations given. This special type of team requires an extremely high level of commitment to other team mem bers and cannot be managed.

- *Real teams provide the basis of performance.* Real teams combine the skills, experiences, and judgments of the team members to create a synergy that cannot be achieved through the summation of individual performance. Teams are also the best way to create a shared vision and sense of direction throughout the organization.

- *Teams naturally integrate performance and learning.* Performance goals and common purposes translate into team members developing the skills needed to achieve those goals. As a result of open communication and trust, the members of a team are more apt to share their ideas and skills so that they may learn from one another. Moreover, successful teams have more fun, and their experiences are more memorable for both what the team accomplished and in terms of what each member learned as a result of the team process.

## Project Teams and Knowledge Management

The primary challenge of real teams is to develop shared performance goals and a common purpose. For project teams following the IT project methodology, this challenge requires defining and getting agreement on the project's MOV. It also requires that the team members learn from each other and from other project teams' experiences.

In *The Radical Team Handbook,* John Redding (2000) describes a fundamentally new and different form of teamwork based on learning. Based on a study of twenty teams, Redding suggests that traditional teams tend to:

- *Accept background information at face value.* In short, most teams accept the project challenge as it is first defined and do not challenge precon ceived notions about the problem or opportunity and what they must do.

- *Approach projects in a linear fashion.* Projects have a beginning and end, and the project plan outlines all of the steps needed to complete the project on time and within budget. Traditional teams tend to focus on the project's schedule and, therefore, base project success on completing the project on time and within budget.

- *Provide run-of-the-mill solutions.* Since the team focuses on the challenge as it was handed to them (i.e., the way the challenge was originally framed), they never really understand the challenge and subsequently provide a solution that

has minimal impact on the organization. In other words, the team may focus on a symptom and, therefore, never focus on the real problem or opportunity since the solutions remain within the original *frame* or how the challenge was originally presented to them.

In contrast, Redding describes a radical team as a team that is able to get to the root or fundamental issue or challenge. In general, radical teams do not accept the original performance challenge at its face value. The core objective of a radical team is to question and challenge the original framing of the problem or challenge at hand.

The way the problem or challenge is defined may very well be the problem. Too often a team is handed a performance challenge that is framed by a senior manager. For example, the team may be told by a senior manager that the company is losing money and, therefore, the team should focus on cutting costs. If the team accepts this framing of the challenge, they will develop a solution aimed at saving money. If, however, a team challenges this original frame, they may find out that the real reason why the organization is losing money is because customers are leaving due to poor service. Unless the project team understands the real problem in this case, its solution to cut costs will have little impact on the organization and the organization will continue to lose money.

## Learning Cycles and Lessons Learned

**Learning cycle theory** was originally proposed by John Dewey in 1938 and used to describe how people learn (Kolb 1984). More recently, the concept **of learning cycles** has been applied to project teams and knowledge management. More specifically, learning cycles provide a way to resolve ambiguous situations through the repeated pattern of thinking through a problem (Dewey 1938). Figure 4.6 illustrates a team learning cycle.

Redding (2000) suggests that a team learning cycle has four phases:

1. *Understand and frame the problem*—It is important that a project team not accept the issues and challenges presented to them at face value. Assumptions must be surfaced and tested because the problem or issue as it is originally framed may not be the real problem after all. Thus, the project team must get to the root of the problem. At the beginning of a project, the team member's understanding may be quite general, or they may feel that they really do not understand the challenge assigned to them. Unfortunately, few people are willing to admit that they do not have all the answers or that their understanding of the team's challenge is
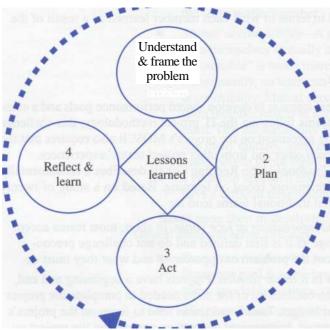


**Figure 4.6** A Learning Cycle

Source: *The Radical Team Handbook,* John Redding, Jossey-Bass 2000. Reprinted by permission of John Wiley & Sons, Inc.

limited. On the other hand, other members of the team may approach the project with a high degree of certainty—that is, they may act as though they know what the solution is and, therefore, the team just needs to work out the details of how to go about implementing the solution. Opinions are often accepted without question and can result in erroneous assumptions that lead the project team in the wrong direction or keep the team from getting at the real problem. Moreover, there is often pressure for the team to take immediate action so that the project can be completed on time and within budget. In either case, the team runs the risk of not getting to the root of the problem and may propose solutions that have minimal impact on the organization.

Therefore, the project team must come to understand two things: Preconceived solutions are likely to produce run-of-the-mill results, and teams should encourage open humility. In other words, it is all right for team members to recognize and admit that they do not have all the answers, especially at the beginning of a project. As a result, team members may feel more comfortable admitting they have more questions than answers and the potential for preconceived ideas leading to mediocre solutions is reduced.

2. *Plan*—To help teams understand and reframe the problem, teams should create a shared understanding of the problem or opportunity. This under-standing includes defining what the team is trying to accomplish and how they are going to go about it. Figure 4.7 provides a template to guide a team through the exercise of separating facts from assumptions.

Using the team learning record as shown in Figure 4.7, the team can brainstorm "what they know" (the facts), "what they think they know" (assumptions), and "what they don't know" (questions to be answered). Early in the project, a team may have more questions and assumptions than facts. That is to be expected because the team may not understand the problem or challenge fully. Assumptions are ideas, issues, or concepts that must be tested (e.g., "the users will never agree to this" or "senior management will never spend the money"). Often, a person can make an assumption sound like a fact, especially if she or he says it with enough authority. Therefore, it is every team member's job to separate the facts (proof, evidence, or reality) from assumptions (theories, opinions, or guesses). On the other hand, if the team identifies things it does not know, these can be classified as questions to be answered. Once the project team identifies what it knows, what it thinks it knows, and what it doesn't know, it can create a plan of action. Each team member can volunteer or be assigned to specific tasks that require him or her to test assumptions or to learn answers to questions that were identified in the team learning record (Figure 4.7). As a

| What We Know (Facts) | What We Think We Know (Assumptions) | What We Don't Know (Questions to be Answered) |
|---|---|---|
|  |  |  |
|  |  |  |
|  |  |  |

**Figure** 4.7 Team Learning Record

result, the team creates a plan of action and can document the actions to be learned in a format similar to Figure 4.8

3. *Act*—The key to team learning is carrying out the actions defined in the team's action plan. Team members can work on their own or together to test out assumptions, try out hunches, experiment, or gather and analyze data. The purpose of these actions should be to generate knowledge and test assumptions, not to complete a series of tasks like a to-do list. Thus, the purpose of these actions is to confirm or disconfirm assumptions and learn answers to questions the team does not know. Redding suggests that what teams do outside of meetings is just as important as the meeting itself because only by acting do teams have the opportunity to learn.

4. *Reflect and learn*—After the team has had a chance to carry out the action items in the action-learning plan, the team should meet to share its findings and reflect upon what everyone has learned. To be effective, this reflection must take place in an environment of openness, honesty, and trust. Once the team has a chance to meet and reflect on the information it has acquired, the team can document what it has learned. One format Redding suggests is for the team to answer the following questions:

    What do we know now that we didn't know before?

    *  Have we encountered any surprises? Have we gained any new insights? If so, what were they?

    a  What previous assumptions have been supported or refuted by what we have learned so far?

    *-  How does the team feel the project is progressing at this point in time?

    How effective has the team been so far?

    Another approach for documenting **lessons learned** is the United States Army's After Action Review (AAR). The format for an AAR is:

    *What was the intent?* Begin by going back and defining the original purpose and goal of the action.

    *What happened?* Describe as specifically and objectively as possible what actually occurred.

    *What have we learned?* Identify key information, knowledge, and insights that were gained as a result.

    »  *What do we do now?* Determine what will be done as a result of what has been learned, dividing actions into three categories: Short-term, mid-term, and long-term.

    *Take action.*

    «  *Tell someone else.* Share what has been learned with anyone in the organization who might benefit.

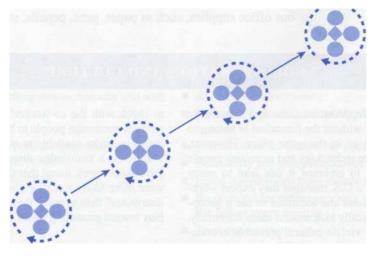| *What Needs To Be Done?* | *By Whom?* | *By When?* |
|---|---|---|
|  |  |  |
|  |  |  |
|  |  |  |

**Figure 4.8**  Action Plan for Team Learning

The team learning cycles and lessons learned can be documented and shared with other project teams. However, the completion of a team's lessons learned marks the ending of one learning cycle and the beginning of another. Based on the learning that has transpired, the team can focus once again on understanding and refraining the problem and then repeat the plan, act, reflect and learn phases again. Figure 4.9 illustrates this concept.

As illustrated in Figure 4.9, an entire project can be viewed as a series of learning cycles. An initial team meeting can examine the initial problem or challenge assigned to the team. During that meeting, the team can develop an initial action plan. Between meetings, the members of the team can then carry out their assigned tasks for testing assumptions or gathering information. At the next meeting, the team can reflect on what it has learned, document the lessons learned, and then start the beginning of a new cycle. Each cycle should be used to challenge the framing of the problem and create new opportunities for learning.

Teams do not always begin and end learning cycles at each meeting. Some learning cycles may take longer, and some can be accomplished in a shorter time if face-to-face meetings are not needed. Redding suggests, however, that three dimensions can be used to assess team learning: speed, depth, and breadth.

- *Speed*—First, a team should follow a learning cycle approach rather than a traditional, linear approach. Second, speed refers to the number of learning cycles completed. Therefore, the opportunity to learn can be increased if a team can complete more cycles in a given amount of time.

- *Depth*—Just increasing the number of learning cycles does not guarantee that teams will increase their learning. Subsequently, depth of learning refers to the degree to which a team can deepen its understanding of the project from cycle to cycle. This learning includes challenging the framing of the problem and various assumptions. In short, depth focuses on how well the team is able to dig below the surface in order to get to the root of the problem. Redding suggests that a team can measure depth by asking the following question: Was the team's conception of the project at the end any different from what it was in the beginning? (47)



**Figure 4.9**  Team Learning Cycles Over the Project Life Cycle

*Breadth*—The breadth of learning refers to the impact the project has on the organization. It also focuses on whether the learning that has taken place within the team stays within the team or is shared and used throughout the organization. If a team can uncover complex relationships, it can develop a solution that impacts the whole organization. For example, what originally was thought to be a marketing problem could very well cross several functional or departmental boundaries.

## THE PROJECT ENVIRONMENT

The project manager is responsible for many things. In addition to acquiring human resources, the project manager must also focus on the project environment. The project environment includes not only the physical space where the team will work, but also the project culture as well. More specifically, the project environment includes:

- *A place to call home*—It may seem obvious, but a project team must have adequate space to work and meet. If the project team is internal to the organization, a work area may already be available to the team. However, consultants often are found camped out in a conference room or even the organization's cafeteria because no other space in the organization is available. Therefore, the project manager should make sure that the team has a place to call home and a place to meet as a team for the duration of the project.

- *Technology*—In addition to having an adequate work area, the team will also need adequate technology support. Support may include a personal computer and appropriate software, Internet access, electronic mail, and a telephone. In addition, many teams today are geographically dispersed. Technology provides a means for teams to collaborate when they cannot meet at the same time in the same place. Collaboration tools not only can improve communication, but also can increase the speed of the team's learning cycles by allowing the team to store and share minutes of team meetings, action plans, and lessons learned.

- *Office supplies*—Aside from technology resources, the team will need various office supplies, such as paper, pens, pencils, staplers, and so forth.

## COLLABORATION AND CULTURE

Groupware can be an important business tool that allows people to work together without the limitation of having to meet at the same time or in the same place. However, implementing groupware technology and expecting people from different cultures to embrace it can lead to many problems. For example, a U.S. manager may expect workers in different departments and locations to use a group-ware system to electronically kick around ideas informally. Unfortunately, that may violate cultural protocols in countries that adhere to a more hierarchical business structure. To talk to another co-worker, an individual may have to first let her or his manager know, who, in turn, would have to check with the co-worker's manager. Moreover, some cultures encourage people to be selective about what client data they make available to others. For example, Margaret Matthews, a knowledge director at Andersen Consulting (now Accenture), found that the company's Japanese users were more likely to call a client "a worldwide electronics distributor" than to name the company, because of a strong bias toward protecting client confidentiality.

SOURCE: Adapted from Rebecca Sykes, Collaboration Kinks, *Computerworld,* December 8, 1997, http://www.computerworld.com/news/1997/ story/0,11280,14715,00.html.

- *Culture*—Each organization has its own culture, but a project team should have its own culture as well. Culture reflects the values and norms of the team. One way of establishing a culture for the project team is to have the project team develop a team charter early on in the project. The team charter allows the team to agree on a set of values and expectations that will help define the project team culture. This charter includes:
  * What is expected from each member? What role will each team member play? How will conflicts be resolved?

Figure 4.10 provides an example of an actual team charter. Because many organizations operate globally today, many projects teams are made up of people from different backgrounds and cultures. The project manager and the project team members must be sensitive to these cultural differences.

## CHAPTER SUMMARY

Organizations create a specific structure to support a particular strategy. If the organization performs poorly, then the firm will often develop a new strategy and/or formal organizational structure. Three different formal organizational structures were discussed in this chapter: the functional organization, the project organization, and the matrix organization. These organizational structures represent a continuum of possible structures, and an organization can create structures that are between functional and matrix organizations or matrix and project organizations.

Each organizational structure presents opportunities and challenges for projects in terms of flexibility, knowledge and expertise available, and authority and responsibilities. While the formal organization, in terms of an

organizational or hierarchical chart, defines the official line of authority and communication, the informal organization includes the informal relationships and internetworking of people within the organization that develops over time. Understanding the formal and informal sides of an organization is important because it will help the project manager and project team better understand the politics and culture of the organization and provide greater insight into the decision-making process.

The project manager is a key position that should be filled at the earliest stages of the project. The project manager plays many important roles that include not only the traditional roles of a manager, but also roles specific to the nature of projects. Therefore, the project manager must be a skillful communicator, negotiator, organizer,

*Expectations and Team Values*
- Everybody's ideas and opinions count
- Everyone must learn something new technically and with the business
- Work hard, but have fun
- Produce necessary, quality periodic deliverables throughout the  course of the product
- Add values to clients' organization
- Heavy team commitment
- Show up for team meetings
- Team coordination
- Accountability
- Assistance

- Communication with clients and team
- No such thing as a stupid question
- *RESPECT for everyone*
- Research: expanding knowledge base as well as comfort zone
- Extend ourselves (Leave our comfort zones)
- Punctuality and group attendance
- Equal contributions from members
- Be prepared for meetings: check e-mail and team web site before every meeting
- Trust one another

*Grievance **Resolution***
- Try to resolve issue with each team member first

**Figure 4.10** Project Team Charter

and relationship builder. In addition, the project manager must perform several critical tasks, including selecting and acquiring members of the project team and creating the project environment.

Two relatively new approaches to managing project teams were introduced in this chapter. First, *The Wisdom of Teams* by Jon R. Katzenbach and Douglas K. Smith (1999) provides a new language and discipline for project teams. For example, a work group can follow a traditional approach where a single leader or boss is in control, makes most of the decisions, and delegates to subordinates who work independently from each other. Or a work group can include several individuals who come together to share information or set policy, but work independently from one another and do not necessarily share the same performance goals or work products. On the other hand, real teams are a special type of team, with a few individuals with complimentary skills who focus on a performance-based goal and share a common purpose and approach. Based on their study of teams, Katzenbach and Smith found that real teams consistently outperform work groups.

Project team members must learn from each other and from other project team experiences if they are to provide a solution that gets to the root of the problem and not just a symptom. Learning cycle theory has been around since 1938, but has recently been applied to team learning and knowledge management. In *The Radical Team Handbook,* John Redding (2000) provides an interesting approach for teams based on learning cycles. Here, it is important that a team not accept the problem

or challenge as it is originally presented to them. Following a learning cycle, the team follows four phases: (1) understand and frame the problem, (2) plan, (3) act, and (4) reflect and learn. The conclusion of a learning cycle and the beginning of the next is marked by the documentation of lessons learned.

Instead of developing a solution prematurely, the project team is to encourage open humility by acknowledging that it does not have all the answers, especially at the beginning of a project. Therefore, the project team is encouraged to discuss and separate facts from assumptions or opinions. The team then creates an action plan to research questions and test assumptions. When the team meets, the members reflect on and learn from the information collected. Surprises, insights, and confirmed (or disconfirmed) assumptions are then documented as lessons learned. A team's learning can be assessed using three dimensions: (1) speed or the number of learning cycles, (2) depth or the degree to which the team deepened its understanding of the project, and (3) breadth or the impact of the team's proposed solution on the organization.

Although the project manager is responsible for overseeing many project activities, it is his or her responsibility to ensure that the project team has an adequate work environment. A suitable workspace and the technology to support the team are necessary. In addition, each project should define its own culture. It is helpful to have the team develop a team charter that outlines the roles, values, expectations, and methods for resolving conflict in order to set proper expectations.

## REVIEW QUESTIONS

1. What is the relationship between an organization's strategy and organizational structure?
2. What is meant by the formal organization?
3. Why is it important for a project manager to under stand the formal organization?
4. Describe the functional organizational structure.
5. What are some challenges for IT projects under the functional organizational structure?
6. What are some opportunities for IT projects under the functional organizational structure?
7. Describe the project organizational structure.
8. What are some challenges for IT projects under the project organizational structure?
9. What are some opportunities for IT projects under the project organizational structure?
10. Describe the matrix organizational structure.
11. What are some challenges for IT projects under the matrix organization structure?
12. What are some opportunities for IT projects under the matrix organizational structure?
13. What is projectitis? When might you expect to encounter projectititis? How could an organization minimize the likelihood of projectititis?
14. Describe the balanced matrix, functional matrix, and project matrix organizational structures.
15. Describe what is meant by the informal organiza tion. Why should the project manager or project team be concerned with understanding the informal organization?
16. What is a stakeholder?

2.

3.

4.

17. How does conducting a stakeholder analysis help the project manager and project team understand the informal organization?

18. Why would the project manager and project team not want to make a stakeholder analysis public to the entire organization?

19. In conducting a stakeholder analysis, why is it important not only to identify those who will gain from the project's success, but also those who may gain from its failure?

20. What is the purpose of defining a role and objective for each stakeholder identified in the stakeholder analysis?

21. Describe the roles of a project manager.

22. What qualities are required for a good project manager? Can you come up with any on your own?

23. What skills or qualities are important in selecting a project team?

24. What is the difference between a work group and a real team?

25. What is the difference between a performance-based goal and an activity-based goal? Give an example of each.

26. Why is focusing on a performance-based goal, such as a project's MOV, more important than having the team go through a series of team-building exercises?

27. Why do you think many teams accept the project opportunity at face value and never question the way the project was originally framed?

28. Describe the concept of a learning cycle?

29. What purpose does creating a lesson learned at the end of a learning cycle provide?

30. What advantage does a team have when it encourages open humility instead of trying to solve the problem or provide a solution as soon as possible?

31. What is meant by the speed of learning cycles? How is speed associated with team learning?

32. What is meant by depth of learning cycles? How is depth associated with team learning?

33. What is meant by breadth of learning cycles? How is breadth associated with team learning?

34. What is the project environment? Why must a project manager ensure that a proper project environment is in place?

## EXTEND YOUR KNOWLEDGE

1. Develop and write a job description for hiring a project manager to manage an Enterprise Resource Planning (ERP) project. Once the job description is complete, describe how you might go about finding this person externally. What sources would you use?

2. If you are working on a semester assignment with other individuals in your class, complete a stakeholder analysis using the Stakeholder Analysis Chart in Figure 4.5.

3. What kind of projects are you best suited for? Using the World Wide Web, point your browser to the following Web sites and take an online assessment.

   • Quiz 1: http://www.project-manager.com/pmpage19.html

   • Quiz2: http://www.project-manager.com/pmpage20.html

4. If you are working with other students on a semester project assignment, do you consider yourselves more of a work group or a team? Why? How effectively has this worked for you? What would you like to change? What would you like to leave the same?

5. If you are working with a team on a class project, go through a learning cycle as a team.

Write down the problem or challenge assigned to your team as you originally understood it. What is MOV (i.e., performance-based goal) that your team is trying to achieve? Using the following table as a guide, write down what you know (facts), what you think you know (assumptions), and what you don't know (questions to be answered). Be sure to challenge any opinions or assumptions before concluding they are facts.

| What We Know (Facts) | What We Think We Know (Assumptions) | What We Dont Know (Questions to be Answered) |
|---|---|---|
|  |  |  |
|  |  |  |
|  |  |  |

Once you and your team members finish brainstorming facts, assumptions, and questions, develop an action plan and assign responsibilities for each member of the team using the following table as a guide. Agree on a meeting day and time so that each member has a chance to complete his or her assignment and so that the team can meet to discuss these findings.

| Actions to Learn | Who's Responsible |
|---|---|
|  |  |
|  |  |
|  |  |

After everyone has had a chance to complete his or her action-learning assignments, the team should meet to share this information. Each member should take a turn presenting what he or she found. While a team member is presenting what they found, the other members must listen carefully and not challenge any of the information presented. Clarification questions are fine. After each member has had a chance to present her or his findings, the team should focus on the following questions:

a. Is there anything we know now that we didn't know before?

b. Were there any surprises? Have we gained any new insights? If so, what are they?

c. What assumptions have been supported and not supported?

d. How well is the team progressing?

e. The answers to these questions should be documented. Once documented, the team has completed one full learning cycle. The next step is to start over and reframe the project challenge as you did in Part a.

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