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PROJECT HUMAN RESOURCE MANAGEMENT

Project Human Resource Management includes the processes that organize, manage, and lead the project team. The project team is comprised of the people with assigned roles and responsibilities for completing the project. Project team members may have varied skill sets, may be assigned full or part-time, and may be added or removed from the team as the project progresses. Project team members may also be referred to as the project's staff. Although specific roles and responsibilities for the project team members are assigned, the involvement of all team members in project planning and decision making is beneficial. Participation of team members during planning adds their expertise to the process and strengthens their commitment to the project.

Figure 9-1 provides an overview of the Project Human Resource Management processes, which are as follows:

- 9.1 Plan Human Resource Management**—The process of identifying and documenting project roles, responsibilities, required skills, reporting relationships, and creating a staffing management plan.
- 9.2 Acquire Project Team**—The process of confirming human resource availability and obtaining the team necessary to complete project activities.
- 9.3 Develop Project Team**—The process of improving competencies, team member interaction, and overall team environment to enhance project performance.
- 9.4 Manage Project Team**—The process of tracking team member performance, providing feedback, resolving issues, and managing changes to optimize project performance.

These processes interact with each other and with processes in other Knowledge Areas as described in detail in Section 3 and Annex A1.

As a result of these interactions additional planning may be required throughout the project. For example:

- After initial team members create a work breakdown structure, additional team members may need to be added to the team.
- As additional team members are added to the team, their experience levels, or lack thereof, could decrease or increase project risk, creating the need for additional risk planning.
- When activity durations are estimated, budgeted, scoped, or planned prior to identifying all project team members and their competency levels, the activity durations may change.

The project management team is a subset of the project team and is responsible for the project management and leadership activities such as initiating, planning, executing, monitoring, controlling, and closing the various project phases. This group can also be referred to as the core, executive, or leadership team. For smaller projects, the project management responsibilities may be shared by the entire team or administered solely by the project manager. The project sponsor works with the project management team, typically assisting with matters such as project funding, clarifying scope, monitoring progress, and influencing stakeholders in both the requesting and performing organization for the project benefit.

Managing and leading the project team includes, but is not limited to:

- **Influencing the project team.** The project manager needs to be aware of and influence, when possible, human resource factors that may impact the project. These factors includes team environment, geographical locations of team members, communications among stakeholders, internal and external politics, cultural issues, organizational uniqueness, and others factors that may alter project performance.
- **Professional and ethical behavior.** The project management team should be aware of, subscribe to, and ensure that all team members follow professional and ethical behavior.

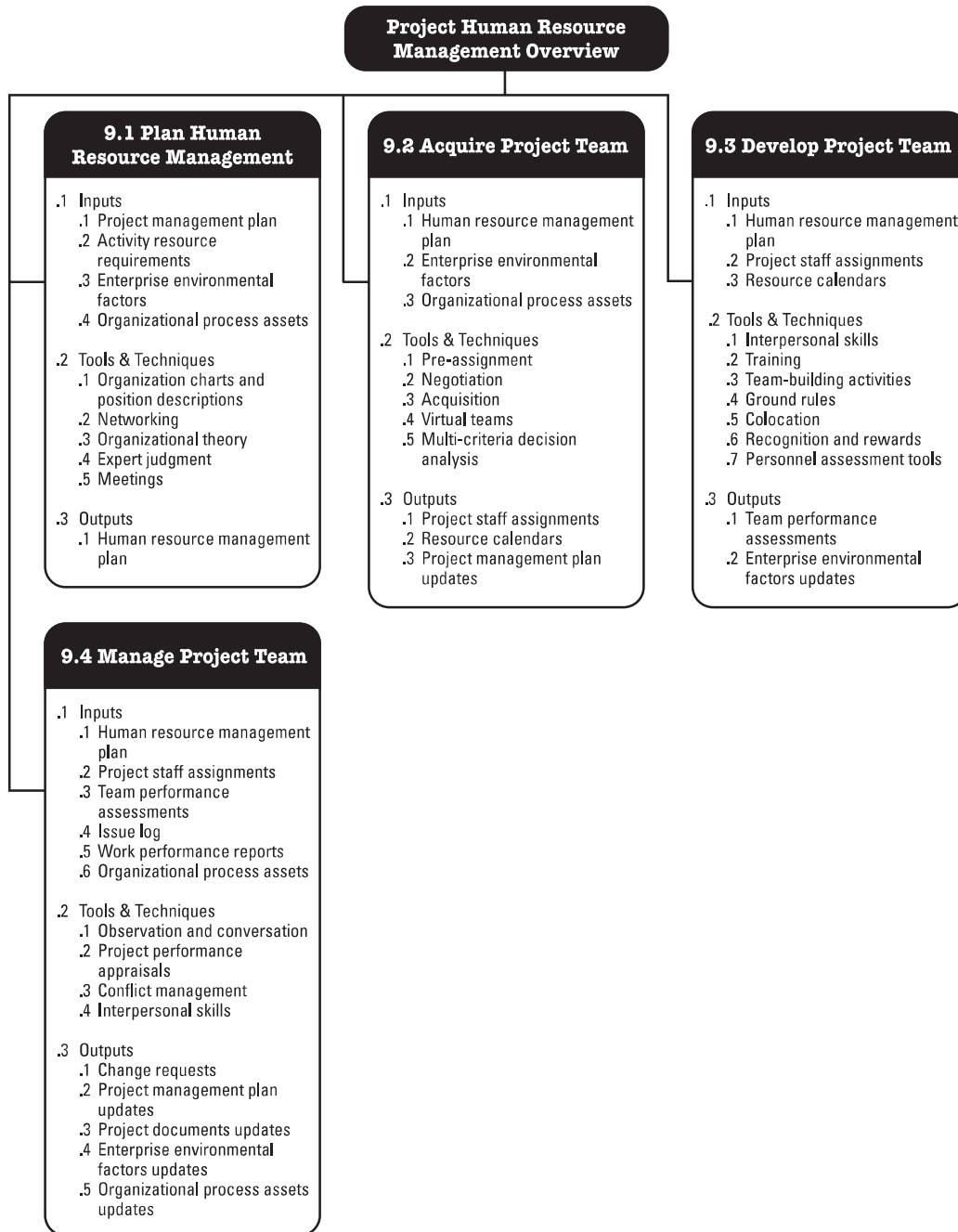


Figure 9-1. Project Human Resource Management Overview

9.1 Plan Human Resource Management

Plan Human Resource Management is the process of identifying and documenting project roles, responsibilities, required skills, reporting relationships, and creating a staffing management plan. The key benefit of this process is that it establishes project roles and responsibilities, project organization charts, and the staffing management plan including the timetable for staff acquisition and release. The inputs, tools and techniques, and outputs of this process are depicted in Figure 9-2. Figure 9-3 depicts the data flow diagram of the process.

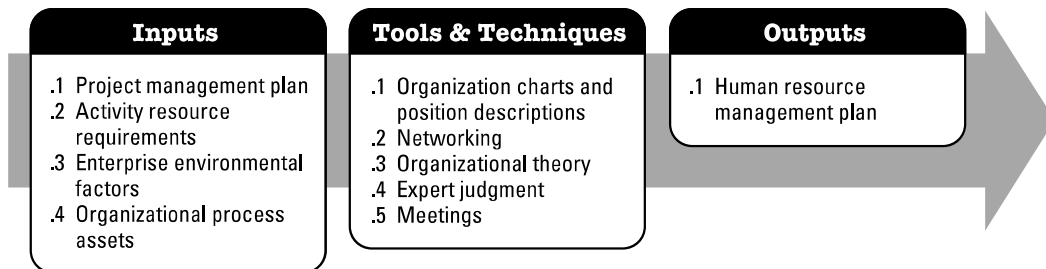


Figure 9-2. Plan Human Resource Management: Inputs, Tools & Techniques, and Outputs

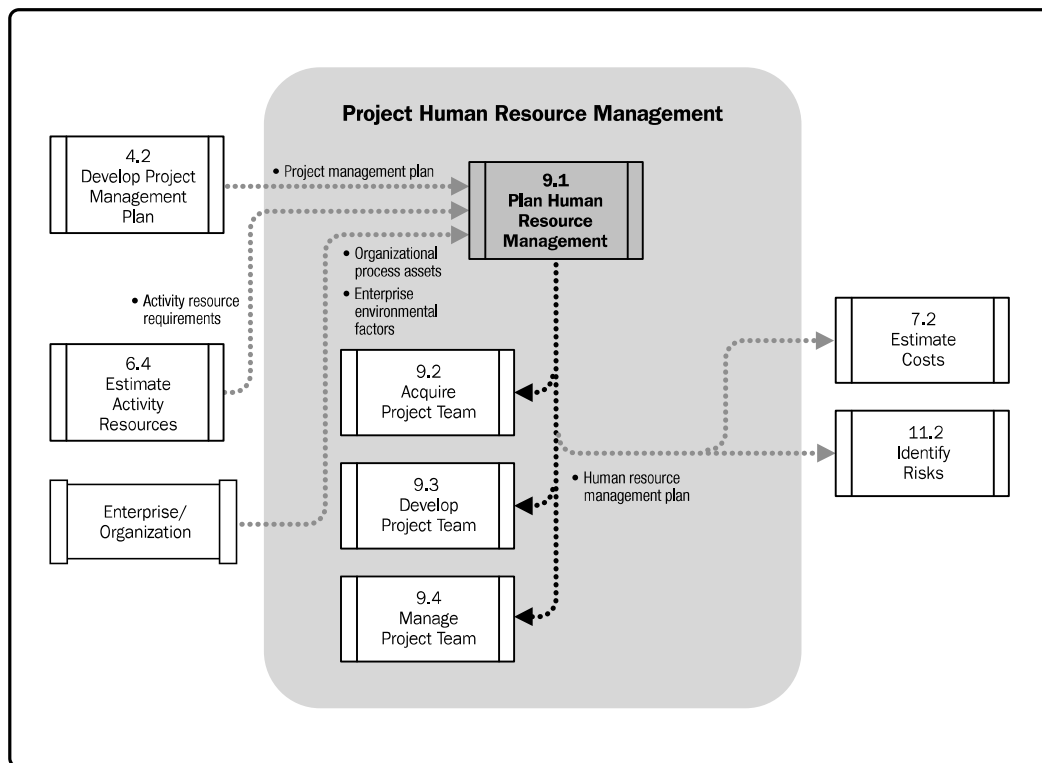


Figure 9-3. Plan Human Resource Management Data Flow Diagram

Human resource planning is used to determine and identify human resources with the necessary skills required for project success. The human resource management plan describes how the roles and responsibilities, reporting relationships, and staffing management will be addressed and structured within a project. It also contains the staffing management plan including timetables for staff acquisition and release, identification of training needs, team-building strategies, plans for recognition and rewards programs, compliance considerations, safety issues, and the impact of the staffing management plan on the organization.

Effective human resource planning should consider and plan for the availability of or competition for scarce resources. Project roles can be designated for teams or team members. Those teams or team members can be from inside or outside the organization performing the project. Other projects may be competing for human resources with the same competencies or skill sets. Given these factors, project costs, schedules, risks, quality, and other project areas may be significantly affected.

9.1.1 Plan Human Resource Management: Inputs

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9.1.1.1 Project Management Plan

Described in Section 4.2.3.1. The project management plan is used to develop the human resource management plan as described in Section 9.1.3.1. The information used for the development of the human resource management plan includes, but is not limited to:

- The project life cycle and the processes that will be applied to each phase,
- How work will be executed to accomplish the project objectives,
- A change management plan that documents how changes will be monitored and controlled,
- A configuration management plan that documents how configuration management will be performed,
- How integrity of the project baselines will be maintained, and
- Needs and methods of communication among stakeholders.

9.1.1.2 Activity Resource Requirements

Described in Section 6.4.3.1. Human resource planning uses activity resource requirements to determine the human resource needs for the project. The preliminary requirements regarding the required project team members and their competencies are progressively elaborated as part of the Plan Human Resource Management process.

9.1.1.3 Enterprise Environmental Factors

Described in Section 2.1.5. The enterprise environmental factors that can influence the Plan Human Resource Management process include, but are not limited to:

- Organizational culture and structure,
- Existing human resources,
- Geographical dispersion of team members,
- Personnel administration policies, and
- Marketplace conditions.

9.1.1.4 Organizational Process Assets

Described in Section 2.1.4. The organizational process assets that can influence the Plan Human Resource Management process include, but are not limited to:

- Organizational standard processes, policies, and role descriptions;
- Templates for organizational charts and position descriptions;
- Lessons learned on organizational structures that have worked in previous projects; and
- Escalation procedures for handling issues within the team and within the performing organization.

9.1.2 Plan Human Resource Management: Tools and Techniques

9.1.2.1 Organization Charts and Position Descriptions

Various formats exist to document team member roles and responsibilities. Most of the formats fall into one of three types (Figure 9-4): hierarchical, matrix, and text-oriented. Additionally, some project assignments are listed in subsidiary plans, such as the risk, quality, or communications management plans. Regardless of the method utilized, the objective is to ensure that each work package has an unambiguous owner and that all team members have a clear understanding of their roles and responsibilities. For example, a hierarchical format may be used to represent high-level roles, while a text-based format may be better suited to document the detailed responsibilities.

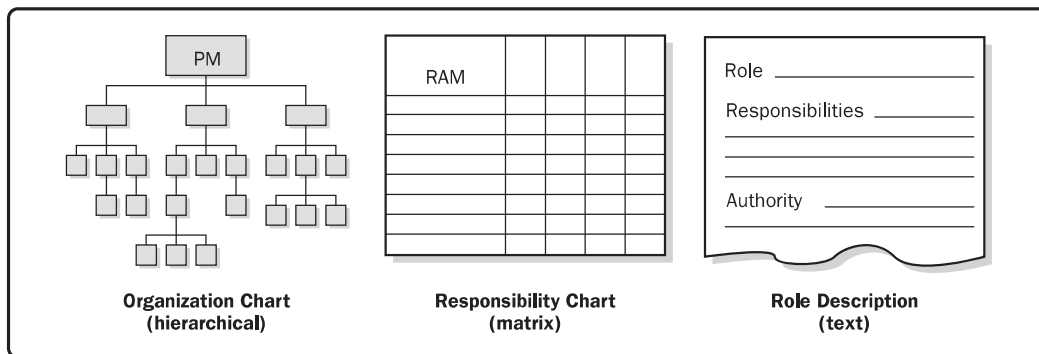


Figure 9-4. Roles and Responsibility Definition Formats

- Hierarchical-type charts.** The traditional organization chart structure can be used to show positions and relationships in a graphical, top-down format. Work breakdown structures (WBS) designed to show how project deliverables are broken down into work packages provide a way of showing high-level areas of responsibility. While the WBS shows a breakdown of project deliverables, the organizational breakdown structure (OBS) is arranged according to an organization's existing departments, units, or teams with the project activities or work packages listed under each department. An operational department such as information technology or purchasing can see all of its project responsibilities by looking at its portion of the OBS. The resource breakdown structure (RBS) is a hierarchical list of resources related by category and resource type that is used to facilitate planning and controlling of project work. Each descending (lower) level represents an increasingly detailed description of the resource until small enough to be used in conjunction with the work breakdown structure (WBS) to allow the work to be planned, monitored and controlled. The resource breakdown structure is helpful in tracking project costs and can be aligned with the organization's accounting system. It can contain resource categories other than human resources.

- Matrix-based charts.** A responsibility assignment matrix (RAM) is a grid that shows the project resources assigned to each work package. It is used to illustrate the connections between work packages or activities and project team members. On larger projects, RAMs can be developed at various levels. For example, a high-level RAM can define what a project team group or unit is responsible for within each component of the WBS, while lower-level RAMs are used within the group to designate roles, responsibilities, and levels of authority for specific activities. The matrix format shows all activities associated with one person and all people associated with one activity. This also ensures that there is only one person accountable for any one task to avoid confusion of responsibility. One example of a RAM is a RACI (responsible, accountable, consult, and inform) chart, shown in Figure 9-5. The sample chart shows the work to be done in the left column as activities. The assigned resources can be shown as individuals or groups. The project manager can select other options such as “lead” and “resource” designations or others, as appropriate for the project. A RACI chart is a useful tool to use when the team consists of internal and external resources in order to ensure clear divisions of roles and expectations.

RACI Chart	Person				
Activity	Ann	Ben	Carlos	Dina	Ed
Create charter	A	R	I	I	I
Collect requirements	I	A	R	C	C
Submit change request	I	A	R	R	C
Develop test plan	A	C	I	I	R

R = Responsible A = Accountable C = Consult I = Inform

Figure 9-5. RACI Matrix

- Text-oriented formats.** Team member responsibilities that require detailed descriptions can be specified in text-oriented formats. Usually in outline form, the documents provide information such as responsibilities, authority, competencies, and qualifications. The documents are known by various names including position descriptions and role-responsibility-authority forms. These documents can be used as templates for future projects, especially when the information is updated throughout the current project by applying lessons learned.

9.1.2.2 Networking

Networking is the formal and informal interaction with others in an organization, industry, or professional environment. It is a constructive way to understand political and interpersonal factors that will impact the effectiveness of various staffing management options. Human resource management benefits from successful networking by improving knowledge of and access to human resource assets such as strong competencies, specialized experience, and external partnership opportunities. Examples of human resources networking activities include proactive correspondence, luncheon meetings, informal conversations including meetings and events, trade conferences, and symposia. Networking can be a useful technique at the beginning of a project. It can also be an effective way to enhance project management professional development during the project and after the project ends.

9.1.2.3 Organizational Theory

Organizational theory provides information regarding the way in which people, teams, and organizational units behave. Effective use of common themes identified in organizational theory can shorten the amount of time, cost, and effort needed to create the Plan Human Resource Management process outputs and improve planning efficiency. It is important to recognize that different organizational structures have different individual response, individual performance, and personal relationship characteristics. Also, applicable organizational theories may recommend exercising a flexible leadership style that adapts to the changes in a team's maturity level throughout the project life cycle.

9.1.2.4 Expert Judgment

When developing the human resource management plan, expert judgment is used to:

- List the preliminary requirements for the required skills;
- Assess the roles required for the project based on standardized role descriptions within the organization;
- Determine the preliminary effort level and number of resources needed to meet project objectives;
- Determine reporting relationships needed based on the organizational culture;
- Provide guidelines on lead time required for staffing, based on lessons learned and market conditions;
- Identify risks associated with staff acquisition, retention, and release plans; and
- Identify and recommend programs for complying with applicable government and union contracts.

9.1.2.5 Meetings

When planning human resource management of the project, the project management team will hold planning meetings. These meetings leverage a combination of other tools and techniques to allow for all project management team members to reach consensus on the human resource management plan.

9.1.3 Plan Human Resource Management: Outputs

9.1.3.1 Human Resource Management Plan

The human resource management plan, a part of the project management plan, provides guidance on how project human resources should be defined, staffed, managed, and eventually released. The human resource management plan and any subsequent revisions are also inputs into the Develop Project Management Plan process.

The human resource management plan includes, but is not limited to, the following:

- **Roles and responsibilities.** The following should be addressed when listing the roles and responsibilities needed to complete a project:
 - *Role.* The function assumed by or assigned to a person in the project. Examples of project roles are civil engineer, business analyst, and testing coordinator. Role clarity concerning authority, responsibilities, and boundaries should also be documented.
 - *Authority.* The right to apply project resources, make decisions, sign approvals, accept deliverables, and influence others to carry out the work of the project. Examples of decisions that need clear authority include the selection of a method for completing an activity, quality acceptance, and how to respond to project variances. Team members operate best when their individual levels of authority match their individual responsibilities.
 - *Responsibility.* The assigned duties and work that a project team member is expected to perform in order to complete the project's activities.
 - *Competency.* The skill and capacity required to complete assigned activities within the project constraints. If project team members do not possess required competencies, performance can be jeopardized. When such mismatches are identified, proactive responses such as training, hiring, schedule changes, or scope changes are initiated.

- **Project organization charts.** A project organization chart is a graphic display of project team members and their reporting relationships. It can be formal or informal, highly detailed or broadly framed, based on the needs of the project. For example, the project organization chart for a 3,000-person disaster response team will have greater detail than a project organization chart for an internal, twenty-person project.
- **Staffing management plan.** The staffing management plan is a component of the human resource management plan that describes when and how project team members will be acquired and how long they will be needed. It describes how human resource requirements will be met. The staffing management plan can be formal or informal, highly detailed, or broadly framed, depending upon the needs of the project. The plan is updated continually during the project to direct ongoing team member acquisition and development actions. Information in the staffing management plan varies by application area and project size, but items to consider include:
 - *Staff acquisition.* A number of questions arise when planning the acquisition of project team members. For example, whether the human resources come from within the organization or from external, contracted sources; whether the team members need to work in a central location or may work from distant locations; costs associated with each level of expertise needed for the project; and level of assistance that the organization's human resource department and functional managers are able to provide to the project management team.
 - *Resource calendars.* Calendars that identify the working days and shifts on which each specific resource is available. The staffing management plan describes necessary time frames for project team members, either individually or collectively, as well as when acquisition activities such as recruiting should start. One tool for charting human resources is a resource histogram, used by the project management team as a means of providing a visual representation of resources allocation to all interested parties. This chart illustrates the number of hours a person, department, or entire project team that will be needed each week or month over the course of the project. The chart can include a horizontal line that represents the maximum number of hours available from a particular resource. Bars that extend beyond the maximum available hours identify the need for a resource optimization strategy (Section 6.6.2.4), such as adding more resources or modifying the schedule. An example of a resource histogram is illustrated in Figure 9-6.

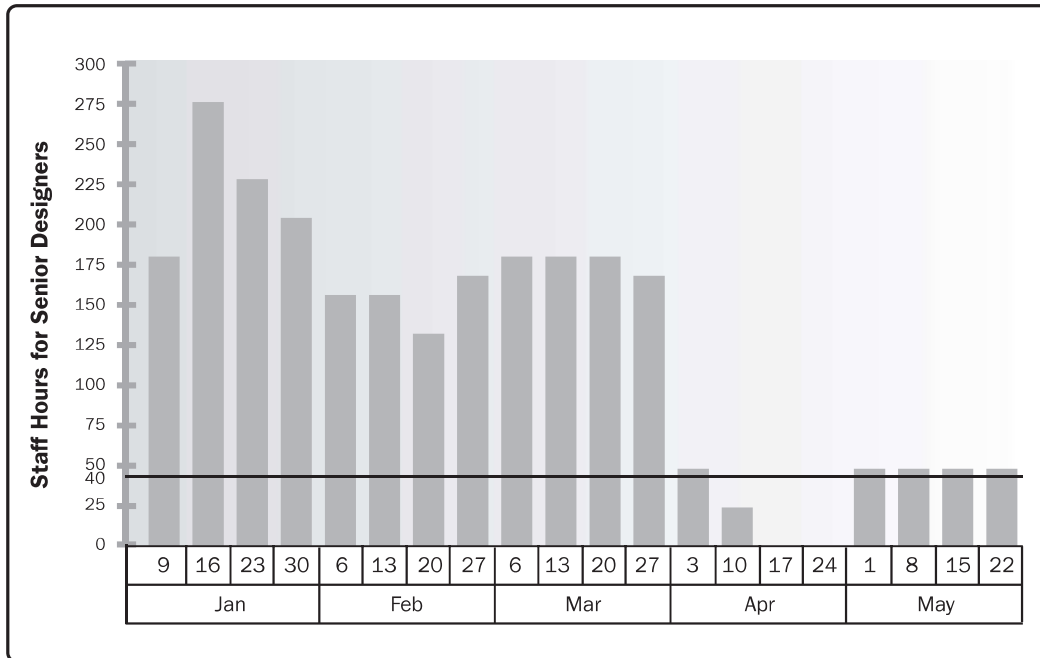


Figure 9-6. Illustrative Resource Histogram

- *Staff release plan.* Determining the method and timing of releasing team members benefits both the project and team members. When team members are released from a project, the costs associated with those resources are no longer charged to the project, thus reducing project costs. Morale is improved when smooth transitions to upcoming projects are already planned. A staff release plan also helps mitigate human resource risks that may occur during or at the end of a project.
- *Training needs.* If it is expected that the team members to be assigned will not have the required competencies, a training plan can be developed as part of the project. The plan can also include ways to help team members obtain certifications that would support their ability to benefit the project.
- *Recognition and rewards.* Clear criteria for rewards and a planned system for their use help promote and reinforce desired behaviors. To be effective, recognition and rewards should be based on activities and performance under a person's control. For example, a team member who is to be rewarded for meeting cost objectives should have an appropriate level of control over decisions that affect expenses. Creating a plan with established times for distribution of rewards ensures that recognition takes place and is not forgotten. Recognition and rewards are part of the Develop Project Team process (Section 9.3).

- *Compliance.* The staffing management plan can include strategies for complying with applicable government regulations, union contracts, and other established human resource policies.
- *Safety.* Policies and procedures that protect team members from safety hazards can be included in the staffing management plan as well as in the risk register.

9.2 Acquire Project Team

Acquire Project Team is the process of confirming human resource availability and obtaining the team necessary to complete project activities. The key benefit of this process consists of outlining and guiding the team selection and responsibility assignment to obtain a successful team. The inputs, tools and techniques, and outputs of this process are depicted in Figure 9-7. Figure 9-8 depicts the data flow diagram of the process.

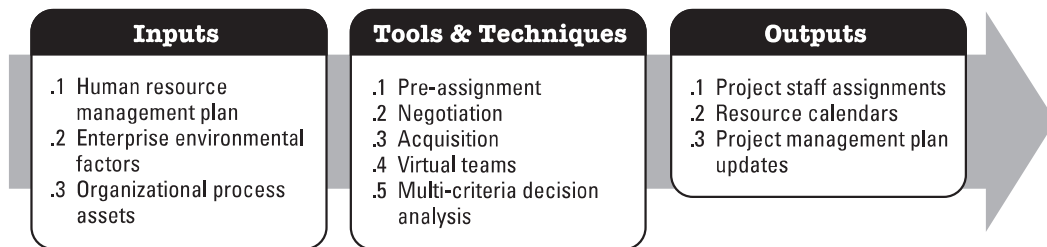


Figure 9-7. Acquire Project Team: Inputs, Tools & Techniques, and Outputs