ICT Project Management
Chapter 8: Project Planning Phase – Project Resource Management
8.1 Introduction
Project Human Resource Management includes the processes required to make the most effective use of the people involved with the project. It includes all the project stakeholders—sponsors, customers, individual contributor.

Human resource management activities are often split between project management and other managers within the performing organization. The scope of responsibility of the project manager may lie somewhere between:

- An extended responsibility, including the selection of sourcing organizations, obtaining staff and performance assessment.
- A limited responsibility focused on coordination with the permanent roles outside the project such as the functional manager, the resource deployment manager and/or the people development manager .
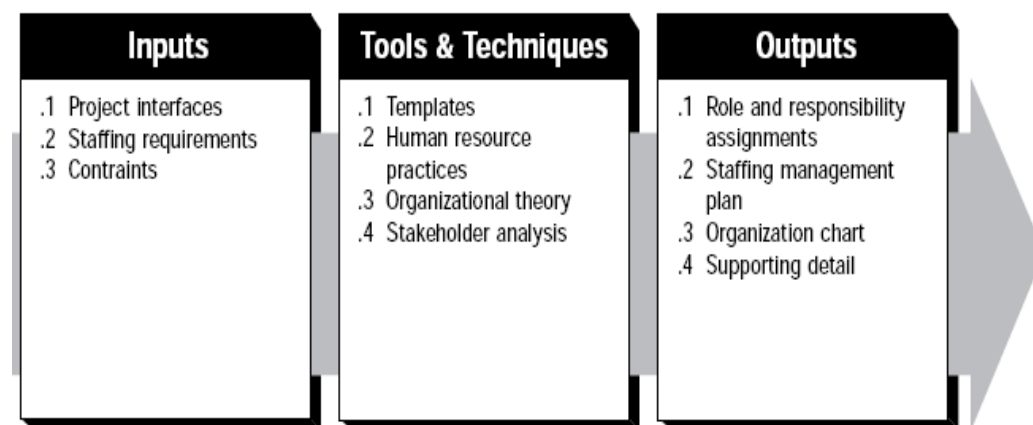
8.2. Human Resource Planning Processes
Human resource planning process includes;
1. Organizational Planning—identifying, documenting, and assigning project roles, responsibilities, and reporting relationships.
2. Staff Acquisition—getting the human resources needed assigned to and working on the project.
3. Team Development—developing individual and group skills to enhance project performance.

8.3.Organization Planning
Organizational planning involves identifying, documenting, and assigning project roles, responsibilities, and reporting relationships. Roles, responsibilities, and reporting relationships may be assigned to individuals or to groups. The individuals and groups may be part of the organization performing the project or they may be external to it. Internal groups are often associated with a specific functional department such as engineering, marketing, or accounting.

Organizational planning is often tightly linked with communications planning since the project's organizational structure will have a major effect on the project's communications requirements.

Inputs	Tools & Techniques	Outputs
.1 Project interfaces .2 Staffing requirements .3 Contraints	.1 Templates .2 Human resource practices .3 Organizational theory .4 Stakeholder analysis	.1 Role and responsibility assignments .2 Staffing management plan .3 Organization chart .4 Supporting detail

8.3.1 Inputs to Organizational Planning
1. **Project interfaces.** Project interfaces generally fall into one of three categories:
   - **Organizational interfaces**—formal and informal reporting relationships among different organizational units. Organizational interfaces may be highly complex or very simple. For example, developing a complex telecommunications system may require coordinating numerous subcontractors over several years, while fixing a programming error in a system installed at a single site may require little more than notifying the user and the operations staff upon completion.

- **Technical interfaces**—formal and informal reporting relationships among different technical disciplines. Technical interfaces occur both within project phases (e.g., the site design developed by the civil engineers must be compatible with the superstructure developed by the structural engineers) and between project phases (e.g., when an automotive design team passes the results of its work along to the retooling team that must create the manufacturing capability for the vehicle).
- Interpersonal interfaces—formal and informal reporting relationships among different individuals working on the project.

These interfaces often occur simultaneously, as when an architect employed by a design firm explains key design considerations to an unrelated construction contractor's project management team.

2. **Staffing requirements.** Staffing requirements define what kinds of skills are required from what kinds of individuals or groups and in what time frames. Staffing requirements are a subset of the overall resource requirements.
3. **Constraints.** Constraints are factors that limit the project team's options. A project's organizational options may be constrained in many ways. Common factors that may constrain how the team is organized include, but are not limited to, the following:
   - Organizational structure of the performing organization—an organization whose basic structure is a *strong matrix* means a relatively stronger role for the project manager than one whose basic structure is a *weak matrix*
   - Collective bargaining agreements—contractual agreements with unions or other employee groups may require certain roles or reporting relationships (in essence, the employee group is a stakeholder).
   - Preferences of the project management team—if members of the project management team have had success with certain structures in the past, they are likely to advocate similar structures in the future.
   - Expected staff assignments—how the project is organized is often influenced by the skills and capabilities of specific individuals.

8.3.2. Tools and Techniques for Organizational Planning

1. **Templates.** Although each project is unique, most projects will resemble another project to some extent. Using the role and responsibility definitions or reporting relationships of a similar project can help expedite the process of organizational planning.
2. **Human resource practices.** Many organizations have a variety of policies, guidelines, and procedures that can help the project management team with various aspects of organizational planning. For example, an organization that views managers as "coaches" is likely to have documentation on how the role of "coach" is to be performed.
3. **Organizational theory.** There is a substantial body of literature describing how organizations can and should be structured. Although only a small subset of this body of literature is specifically targeted at project organizations, the project management team should be generally familiar with the subject of organizational theory so as to be better able to respond to project requirements.
4. **Stakeholder analysis.** The needs of the various stakeholders should be analyzed to ensure that their needs will be met.

8.3.3. Outputs from Organizational Planning

1. **Role and responsibility assignments.** Project roles (who does what) and responsibilities (who decides what) must be assigned to the appropriate project stakeholders. Roles and responsibilities may vary over time. Most roles and responsibilities will be assigned to stakeholders who are actively involved in the work of the project, such as the project manager, other members of the project management team, and the individual contributors.

The roles and responsibilities of the project manager are generally critical on most projects but vary significantly by application area. Project roles and responsibilities should be closely linked to the project scope definition.

A Responsibility Assignment Matrix (or RAM) is often used for this purpose. On larger projects, RAMs may be developed at various levels. For example, a high-level RAM may define which group or unit is responsible for

each element of the work breakdown structure while lower-level RAMs are used within the group to assign roles and responsibilities for specific activities to particular individuals.

2. **Staffing management plan.** The staffing management plan describes when and how human resources will be brought onto and taken off the project team. The staffing plan may be formal or informal, highly detailed or broadly framed, based on the needs of the project. It is a subsidiary element of the overall project plan.

    Particular attention should be paid to how project team members (individuals or groups) will be released when they are no longer needed on the project. Appropriate reassignment procedures may:
    *   Reduce costs by reducing or eliminating the tendency to "make work" to fill the time between this assignment and the next.
    *   Improve morale by reducing or eliminating uncertainty about future employment opportunities.
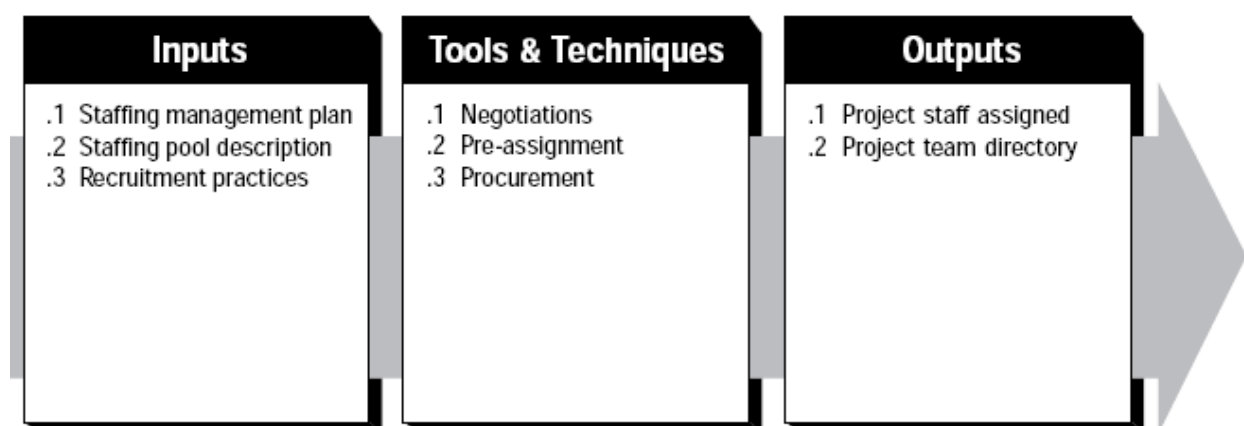
3. **Organization chart.** An organization chart is any graphic display of project reporting relationships. It may be formal or informal, highly detailed or broadly framed, based on the needs of the project. For example, the organization chart for a three- to four person internal service project is unlikely to have the rigor and detail of the organization chart for a 3,000-person nuclear power plant outage.

    An Organizational Breakdown Structure (OBS) is a specific type of organization chart that shows which organizational units are responsible for which work items.

4. **Supporting detail.** Supporting detail for organizational planning varies by application area and project size. Information frequently supplied as supporting detail includes, but is not limited to:
    *   Organizational impact—what alternatives are precluded by organizing in this manner.
    *   Job descriptions—written outlines by job title of the skills, responsibilities, knowledge, authority, physical environment, and other characteristics involved in performing a given job. Also called position descriptions.
    *   Training needs—if the staff to be assigned is not expected to have the skills needed by the project, those skills will need to be developed as part of the project.

8.4 STAFF ACQUISITION

Staff acquisition involves getting the human resources needed (individuals or groups) assigned to and working on the project. In most environments, the "best" resources may not be available, and the project management team must take care to ensure that the resources which are available will meet project requirements.

Inputs	Tools & Techniques	Outputs
.1 Staffing management plan	.1 Negotiations	.1 Project staff assigned
.2 Staffing pool description	.2 Pre-assignment	.2 Project team directory
.3 Recruitment practices	.3 Procurement	

8.4.1 Inputs to Staff Acquisition

1. Staffing management plan. The staffing management plan which includes the project's staffing requirements
2. Staffing pool description. When the project management team is able to influence or direct staff assignments, it must consider the characteristics of the potentially available staff. Considerations include, but are not limited to:

- Previous experience—have the individuals or groups done similar or related work before? Have they done it well?
- Personal interests—are the individuals or groups interested in working on this project?
- Personal characteristics—are the individuals or groups likely to work well together as a team?
- Availability—will the most desirable individuals or groups be available in the necessary time frames?

3. Recruitment practices. One or more of the organizations involved in the project may have policies, guidelines, or procedures governing staff assignments. When they exist, such practices act as a constraint on the staff acquisition process.

8.4.2. Tools and Techniques for Staff Acquisition

1. Negotiations. Staff assignments must be negotiated on most projects. For example, the project management team may need to negotiate with:
   - Responsible functional managers to ensure that the project receives appropriately skilled staff in the necessary time frame.
   - Other project management teams within the performing organization to assign scarce or specialized resources appropriately.

The team's influencing skills play an important role in negotiating staff assignments as do the politics of the organizations involved. For example, a functional manager may be rewarded based on staff utilization. This creates an incentive for the manager to assign available staff who may not meet all of the project's requirements.

2. **Pre-assignment.** In some cases, staff may be pre-assigned to the project. This is often the case when (a) the project is the result of a competitive proposal and specific staff were promised as part of the proposal, or (b) the project is an internal service project and staff assignments were defined within the project charter.
3. Resource levelling: a technique for resolving conflicts by delaying tasks. It is a form of network analysis in which resource management concerns drive scheduling decisions (start and finish dates). The main purpose of the resource levelling is to create a smoother distribution of resource usage
4. Procurement. Project procurement management can be used to obtain the services of specific individuals or groups of individuals to perform project activities. Procurement is required when the performing organization lacks the in-house staff needed to complete the project (e.g., as a result of a conscious decision not to hire such individuals as full-time employees, as a result of having all appropriately skilled staff previously committed to other projects, or as a result of other circumstances).

8.4.3. Outputs from Staff Acquisition

1. **Project staff assigned.** The project is staffed when appropriate people have been reliably assigned to work on it. Staff may be assigned full-time, part-time, or variably, based on the needs of the project.
2. **Project team directory.** A project team directory lists all the project team members and other key stakeholders. The directory may be formal or informal, highly detailed or broadly framed, based on the needs of the project.

8.5. TEAM DEVELOPMENT

Team development includes both enhancing the ability of stakeholders to contribute as individuals as well as enhancing the ability of the team to function as a team. Individual development (managerial and technical) is the foundation necessary to develop the team. Development as a team is critical to the project's ability to meet its objectives.

Team development on a project is often complicated when individual team members are accountable to both a functional manager and to the project manager (see Section 2.3.3 for a discussion of matrix organizational structures). Effective management of this dual reporting relationship is often a critical success factor for the project and is generally the responsibility of the project manager.

8.5.1. Inputs to Team Development

1. Project staff. The staff assignments implicitly define the individual skills and team skills available to build upon.
2. Project plan. The project plan describes the technical context within which the team operates.

3. Staffing management plan.
4. Performance reports. Performance reports provide feedback to the project team about performance against the project plan.
5. External feedback. The project team must periodically measure itself against the performance expectations of those outside the project.

8.5.2. Tools and Techniques for Team Development

1. *Team-building activities.* Team-building activities include management and individual actions taken specifically and primarily to improve team performance. Many actions, such as involving non–management-level team members in the planning process, or establishing ground rules for surfacing and dealing with conflict, may enhance team performance as a secondary effect. Team-building activities can vary from a five-minute agenda item in a regular status review meeting to an extended, off-site, professionally facilitated experience designed to improve interpersonal relationships among key stakeholders.

   There is a substantial body of literature on team building. The project management team should be generally familiar with a variety of team-building activities.

2. General management skills. General management skills (discussed in Section 2.4) are of particular importance to team development.

3. Reward and recognition systems. Reward and recognition systems are formal management actions which promote or reinforce desired behavior. To be effective, such systems must make the link between performance and reward clear, explicit, and achievable. For example, a project manager who is to be rewarded for meeting the project's cost objective should have an appropriate level of control over staffing and procurement decisions.

   Projects must often have their own reward and recognition systems since the systems of the performing organization may not be appropriate. For example, the willingness to work overtime in order to meet an aggressive schedule objective *should* be rewarded or recognized; needing to work overtime as the result of poor planning *should not* be. Reward and recognition systems must also consider cultural differences. For example, developing an appropriate team reward mechanism in a culture that prizes individualism may be very difficult.

4. *Collocation.* Collocation involves placing all, or almost all, of the most active project team members in the same physical location to enhance their ability to perform as a team. Collocation is widely used on larger projects and can also be effective for smaller projects (e.g., with a "war room" where the team congregates or leaves in process work items).

5. *Training.* Training includes all activities designed to enhance the skills, knowledge, and capabilities of the project team. Some authors distinguish among training, education, and development, but the distinctions are neither consistent nor widely accepted. Training may be formal (e.g., classroom training, computer-based training) or informal (e.g., feedback from other team members). There is a substantial body of literature on how to provide training to adults.

If the project team members lack necessary management or technical skills, such skills must be developed as part of the project, or steps must be taken to re-staff the project appropriately. Direct and indirect costs for training are generally paid by the performing organization.

5.5.3 Outputs from Team Development

1. Performance improvements. The primary output of team development is improved project performance.
- Improvements can come from many sources and can affect many areas of project performance, for example:
- Improvements in individual skills may allow a specific person to perform their assigned activities more effectively.
- Improvements in team behaviors (e.g., surfacing and dealing with conflict) may allow project team members to devote a greater percentage of their effort to technical activities.
- Improvements in either individual skills or team capabilities may facilitate identifying and developing better ways of doing project work.

2. *Input to performance appraisals.* Project staff should generally provide input to the performance appraisals of any project staff members that they interact with in a significant way.

5.5.4. Tools and techniques for managing project teams

There several tools and techniques that are used to manage project teams;

1. Observation and conversation: project can use the management-by-walking-around style to manage the project team and to observe the project tem at work.
   Informal and formal conversation about how the project is going can provide crucial information.
2. Project performance appraisals: project manager should have performance contracts for the team
3. Conflict management: it is important for project manager to understand strategies for handling conflicts and to proactively manage conflicts.
4. Issues Logs: issues log can be used to document, monitor, and track issues that needs to resolved by the project team to work effectively. It is important to acknowledge issues that can hurt the team performance and take action to resolve them.