PREVIOUS < Free Open Study > NEXT

Organizational Structures

Now that we have a basic understanding of organizations in general, we can look at the common forms that a software development project manager may encounter. In the 1960s and 1970s, several forms of organization were being discussed in the literature. These are shown in Table 13-1.

Table 13-1. Types of Organizations

Types of Organizations		Organization of the Skills	Skill Specialists Report To
Functional		Grouped into functional specialties	Functional group leader only
Matrix	*Weak, balanced*, or *strong,* depending on the relative power of the functional and project leaders	Grouped into functional specialties, but assigned to projects as needed	Functional group leader, **and** to project leader(s)
Projectized		All skills needed are assigned to the project full-time	Project leader only
A Combination of the Above		Varies	Varies

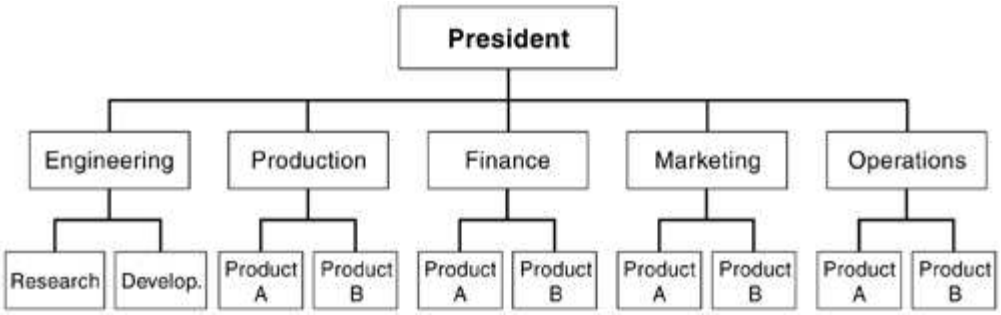
In a 1977 article in the *Project Management Quarterly* ("Organizational Alternatives for Project Management"), Robert Youker proposed that the various organizational forms in the literature at the time fell on a spectrum. This made it easier to grasp which forms might be appropriate for a given type of project. The spectrum has the classical highly structured functional organization on one side (where functional specialists report only to the functional area leader) and organizations that are totally "owned" by project managers on the other (where everyone, regardless of specialty, reports to a project manager who is not one of the functional managers). In between are several forms of the matrix organization. Let's examine some of them.

Functional Organizations

The functional organization is what most of us think of as a "standard" old-fashioned organization (the 19xx side of Figure 13-3). It is the style in which people are divided into their functional specialties (remember Fayol's Principles of Management, discussed earlier?), and report to a functional area manager. For instance, all the software engineers in a company would be in the engineering department and would report to the engineering department manager. The same would be true for the operations people and the marketing people, and so on. A typical functional organization chart would look something like Figure 13-9.

Figure 13-9. Typical Functional Organization

Source: Cable, Dwayne, and John R. Adams. *Organizing for Project Management*. pp. 11–20.



The advantages of a purely functional organizational form are that it:

- Clearly defines authority—each specialist reports to only one manager;
- Eliminates duplication of functions—all engineers are in one group, marketing personnel is in another, and so on;
- Encourages technical competence and specialization—engineers sit near other engineers;
- Provides career paths for specialized skills—people see a career path within the department;
- Focuses attention on key functions—concentration on core competencies is encouraged.

There are some important disadvantages as well. The functional form:

- Lacks customer orientation and has "walls" to throw work over to the next function in a process;
- Implies a long decision cycle because it requires going up functional silos to get cross-group decisions;
- Has no single function accountable for the overall project, so project leaders have little power;
- Makes it difficult to coordinate activities across specialized functions due to the long decision cycle;
- Allows for conflicts between functional areas and bickering because of lack of customer focus.

A purely functional organization has no cross-functional projects. Anyone trying to lead a project requiring resources in other departments would have to get permission to borrow time from each of the functional managers' specialists when they were needed on the project. The project organization chart would need to cut across the functional silos of the larger organization. Two derivatives of this form are the project expediter organization and the project coordinator organization.

Project Expediter Organization

The expediter in a functional organization has very little authority to do anything. Most of the power of the position is derived from the manager that the expediter reports to, which is usually very low in the hierarchy. This kind of project organization fits highly functional organizations and

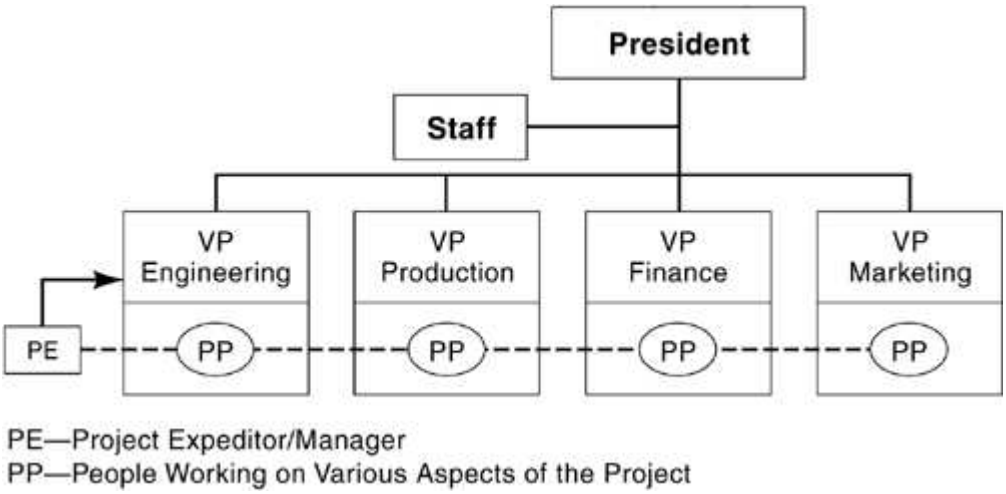
small projects. The project workers remain in their functional organizations. The expediter must be a *very* persuasive person to be effective, motivating workers with no real authority. This requires a lot of personal power for the project manager. The expediter role is characterized as:

- Holding a staff assistant role;
- Making few decisions;
- Being responsible for the arrival of material and completion of tasks;
- Being primarily responsible for communications about the project;
- Needing special people skills and unique technical abilities;
- Forwarding decisions by superiors to people on the project.

An expediter organization is illustrated in Figure 13-10.

Figure 13-10. Project Expediter Organization

Source: Cable, Dwayne, and John R. Adams. *Organizing for Project Management*. pp. 11–20.

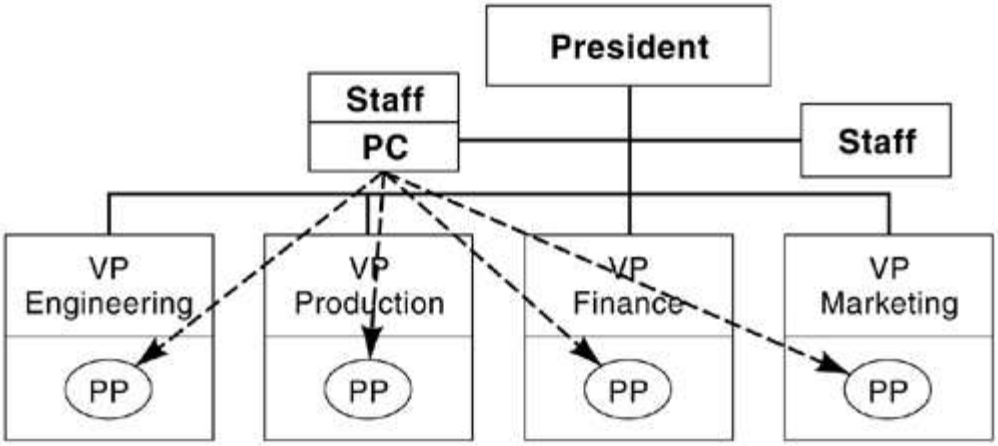


Project Coordinator

This subset of the functional form is very similar to the expediter form, but the coordinator usually reports to a manager higher in the functional hierarchy. The project coordinator has authority to assign work, but he shares this authority with the workers' functional managers. The coordinator organization form is illustrated in Figure 13-11.

Figure 13-11. Project Coordinator Organization

Source: Cable, Dwayne, and John R. Adams. *Organizing for Project Management*. pp. 11–20.



PC—Project Coordinator/Manager
PP—People Working on Various Aspects of the Project

Some of the disadvantages of this form are:

- Upper management is usually reluctant to relinquish power and authority to project managers.
- Upper management is usually not ready to cope with the problems of shared authority.
- Line-staff project managers who report to division heads have no authority or control over the portions of the project in other divisions.

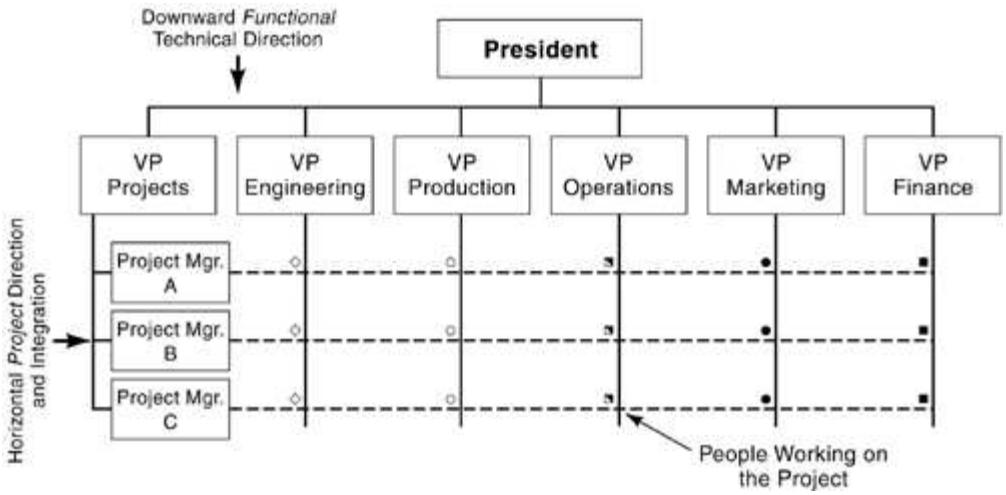
In either form, the project manager has little positional power to get things done. The coordinator form gives the project manager a little more power because he reports higher in the larger organization. In either organization, it is very difficult for a project manager to get anything done on time because the various specialists needed will take their direction from the (very powerful) functional managers.

Matrix Organizations

Matrix management is a relatively new invention, coming into view in the 1960s and put into practice in the 1970s. In matrix organizations, there is a balance of power established between the functional and project managers. The project worker in a matrix organization has a multiple command system of accountability and responsibility. Although it varies from organization to organization, we can usually find several chains of command inside a matrix organization. They can be linked by function, geographic location, or project, product, or client. A typical matrix structure is illustrated in Figure 13-12.

Figure 13-12. Matrix Organization

Source: Cable, Dwayne, and John R. Adams. *Organizing for Project Management*. pp. 11–20.



Usually three types of matrix organizations are described: weak, balanced, and strong. The differences are in the relative balance of power between the functional manager and the project manager. The matrix organization is the most commonly encountered form today.

The characteristic advantages of a matrix are manifold:

- Enables project objectives to be clearly communicated;
- Permits project integration to be done across functional lines;
- Makes efficient use of resources;
- Enhances information flow within an organization;
- Retains functional disciplinary teams;
- Encourages higher morale;
- Develops project managers;
- Makes project termination less traumatic;
- Makes conflicts minimal and more easily resolved.

But the matrix is not without drawbacks:

- Project personnel must report to (at least) *two* bosses.
- It is complex to monitor and control.
- Resource allocation and project priorities can conflict.
- Functional and project management may have differing priorities.

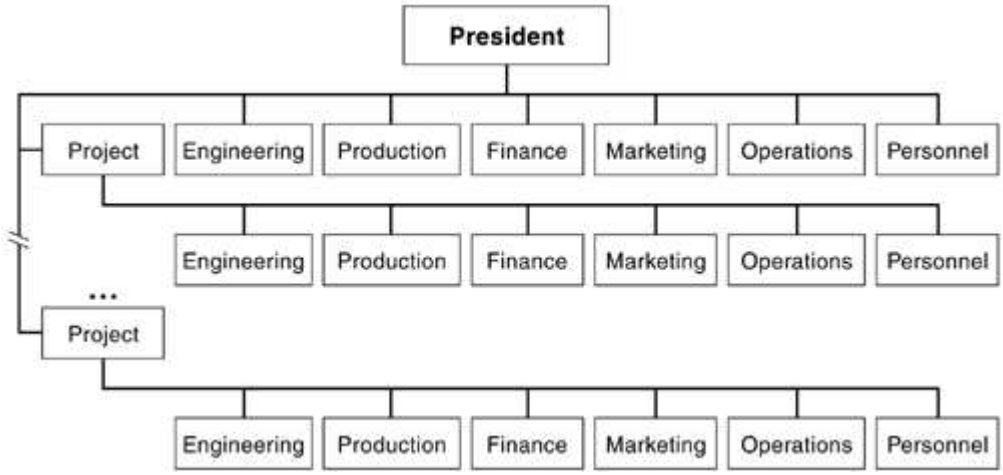
- It requires extensive efforts to establish policies and procedures that work.
- More administrative personnel are required to manage the organization.
- It creates duplication of effort across projects.

Projectized Organizations

Projectized organizations are newer still, associated with thinking in the 1980s and 1990s, even though the first actual "project" credited with following the principles of project management was the Manhattan Project to build the first atomic bomb in the 1940s. In projectized organizations, the project manager (sometimes called a program manager) has total authority and acts like a mini-CEO. All personnel assigned to the project report to project manager, usually in a vertical organization, so the company becomes like a layered matrix. The projectized organization is illustrated in Figure 13-13. Examples of projectized organizations are the large defense contracts for avionics in aircraft projects and any pure construction project. Also, the motion picture industry utilizes this form for each movie produced.

Figure 13-13. Projectized Organization

Source: Cable, Dwayne, and John R. Adams. *Organizing for Project Management*. pp. 11–20.



The clear advantages for a project in this form of organization are that it establishes a unity of command and promotes more effective communication.

The disadvantages are that it fosters duplication of facilities and inefficient use of resources, and project team members work themselves out of a job (at project completion).

This latter one is especially important as, toward the end of the current project, the workers' attention begins to shift to pursuing their next project. This should be considered when planning the final activities in a projectized organization.

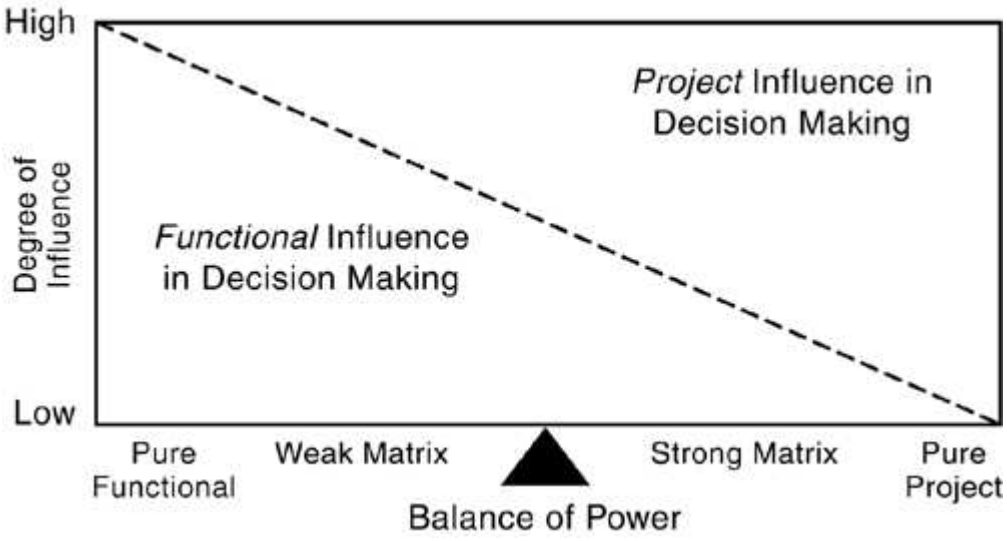
So how do you apply these structures to a software development project situation? There is no one answer for any given project, but rather a spectrum of possibilities. The terms (*projectized*, *functional*, *matrix*, etc.) have many variations. Robert Youker's Table 13-2 suggests a guide to selecting the right kind of organizational structure.

To use the chart, consider the characteristics of your development project and circle the descriptions in each row that seem to best apply. When the characterization is complete, look at the column(s) where most of the circled descriptions are, for a sense of which organizational structure would fit your project best.

Most modern organizations today employ some kind of blend of these forms, depending on specific needs. Many of us who have worked in industry or government for a while are familiar with the pros and cons mentioned for these different types of organizations. The majority of organizations have a constant power struggle between the functional and project managers. Figure 13-14 illustrates this concept.

Figure 13-14. Relative Balance of Power Between Functional and Project Managers

Source: Cable, Dwayne, and John R. Adams. *Organizing for Project Management*. pp. 11–20.



PREVIOUS
< Free Open Study >
NEXT