

1.2 What is a Project?

1.2.1 Project Characteristics

A project is a temporary endeavor undertaken to create a unique product, service, or result.

.1 Temporary

Temporary means that every project has a definite beginning and a definite end. The end is reached when the project's objectives have been achieved, or it becomes clear that the project objectives will not or cannot be met, or the need for the project no longer exists and the project is terminated. Temporary does not necessarily mean short in duration; many projects last for several years. In every case, however, the duration of a project is finite. Projects are not ongoing efforts.

In addition, temporary does not generally apply to the product, service or result created by the project. Most projects are undertaken to create a lasting outcome. For example, a project to erect a national monument will create a result expected to last centuries. Projects also may often have intended and unintended social, economic and environmental impacts that far outlast the projects themselves.

The temporary nature of projects may apply to other aspects of the endeavor as well:

- The opportunity or market window is usually temporary—some projects have a limited time frame in which to produce their product or service.
- The project team, as a working unit, seldom outlives the project—a team created for the sole purpose of performing the project will perform that project, and then the team is disbanded and the team members reassigned when the project ends.

.2 Unique Products, Services, or Results

A project creates unique deliverables, which are products, services, or results. Projects can create:

- A product or artifact that is produced, is quantifiable, and can be either an end item in itself or a component item
- A capability to perform a service, such as business functions supporting production or distribution
- A result, such as outcomes or documents. For example, a research project develops knowledge that can be used to determine whether or not a trend is present or a new process will benefit society.

Uniqueness is an important characteristic of project deliverables. For example, many thousands of office buildings have been developed, but each individual facility is unique—different owner, different design, different location, different contractors, and so on. The presence of repetitive elements does not change the fundamental uniqueness of the project work.

3 Progressive Elaboration

Progressive elaboration is a characteristic of projects that accompanies the concepts of temporary and unique. Progressive elaboration means developing in steps, and continuing by increments¹. For example, the project scope will be broadly described early in the project and made more explicit and detailed as the project team develops a better and more complete understanding of the objectives and deliverables. Progressive elaboration should not be confused with scope creep (Section 5.5).

Progressive elaboration of a project's specifications needs to be carefully coordinated with proper project scope definition, particularly if the project is performed under contract. When properly defined, the scope of the project—the work to be done—should be controlled as the project and product specifications are progressively elaborated. The relationship between product scope and project scope is discussed further in the Chapter 5 introductory material.

The following examples illustrate progressive elaboration in two different application areas:

- Development of a chemical processing plant begins with process engineering to define the characteristics of the process. These characteristics are used to design the major processing units. This information becomes the basis for engineering design, which defines both the detailed plant layout and the mechanical characteristics of the process units and ancillary facilities. All of this results in design drawings that are elaborated to produce fabrication and construction drawings. During construction, interpretations and adaptations are made as needed and are subject to proper approval. This further elaboration of the deliverables is captured in as-built drawings, and final operating adjustments are made during testing and turnover.
- The product of an economic development project may initially be defined as: "Improve the quality of life of the lowest income residents of community X." As the project proceeds, the products may be described more specifically as, for example: "Provide access to food and water to 500 low-income residents in community X." The next round of progressive elaboration might focus exclusively on increasing agriculture production and marketing, with provision of water deemed to be a secondary priority to be initiated once the agricultural component is well under way.

1.2.2 Projects vs. Operational Work

Organizations perform work to achieve a set of objectives. Generally, work can be categorized as either projects or operations, although the two sometimes overlap. They share many of the following characteristics:

- Performed by people
- Constrained by limited resources
- Planned, executed, and controlled.

Projects and operations differ primarily in that operations are ongoing and repetitive, while projects are temporary and unique.

The objectives of projects and operations are fundamentally different. The purpose of a project is to attain its objective and then terminate. Conversely, the objective of an ongoing operation is to sustain the business. Projects are different because the project concludes when its specific objectives have been attained, while operations adopt a new set of objectives and the work continues.

Projects are undertaken at all levels of the organization and they can involve a single person or many thousands. Their duration ranges from a few weeks to several years. Projects can involve one or many organizational units, such as joint ventures and partnerships. Examples of projects include, but are not limited to:

- Developing a new product or service
- Effecting a change in structure, staffing, or style of an organization
- Designing a new transportation vehicle
- Developing or acquiring a new or modified information system
- Constructing a building or facility
- Building a water system for a community
- Running a campaign for political office
- Implementing a new business procedure or process
- Responding to a contract solicitation.

1.2.3 Projects and Strategic Planning

Projects are a means of organizing activities that cannot be addressed within the organization's normal operational limits. Projects are, therefore, often utilized as a means of achieving an organization's strategic plan, whether the project team is employed by the organization or is a contracted service provider.

Projects are typically authorized as a result of one or more of the following strategic considerations:

- A market demand (e.g., an oil company authorizes a project to build a new refinery in response to chronic gasoline shortages)
- An organizational need (e.g., a training company authorizes a project to create a new course in order to increase its revenues)
- A customer request (e.g., an electric utility authorizes a project to build a new substation to serve a new industrial park)
- A technological advance (e.g., a software firm authorizes a new project to develop a new generation of video games after the introduction of new game-playing equipment by electronics firms)
- A legal requirement (e.g., a paint manufacturer authorizes a project to establish guidelines for the handling of a new toxic material).

1.3 What is Project Management?

Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. Project management is accomplished through the application and integration of the project management processes of initiating, planning, executing, monitoring and controlling, and closing. The project manager is the person responsible for accomplishing the project objectives.

Managing a project includes:

- Identifying requirements
- Establishing clear and achievable objectives
- Balancing the competing demands for quality, scope, time and cost
- Adapting the specifications, plans, and approach to the different concerns and expectations of the various stakeholders.

Project managers often talk of a “triple constraint”—project scope, time and cost—in managing competing project requirements. Project quality is affected by balancing these three factors (Chapters 5 through 7). High quality projects deliver the required product, service or result within scope, on time, and within budget. The relationship among these factors is such that if any one of the three factors changes, at least one other factor is likely to be affected. Project managers also manage projects in response to uncertainty. Project risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on at least one project objective.

The project management team has a professional responsibility to its stakeholders including customers, the performing organization, and the public. PMI members adhere to a “Code of Ethics” and those with the Project Management Professional (PMP®) certification adhere to a “Code of Professional Conduct.” Project team members who are PMI members and/or PMPs are obligated to adhere to the current versions of these codes.

It is important to note that many of the processes within project management are iterative because of the existence of, and necessity for, progressive elaboration in a project throughout the project’s life cycle. That is, as a project management team learns more about a project, the team can then manage to a greater level of detail.

The term “project management” is sometimes used to describe an organizational or managerial approach to the management of projects and some ongoing operations, which can be redefined as projects, that is also referred to as “management by projects.” An organization that adopts this approach defines its activities as projects in a way that is consistent with the definition of a project provided in Section 1.2.2. There has been a tendency in recent years to manage more activities in more application areas using project management. More organizations are using “management by project.” This is not to say that all operations can or should be organized into projects. The adoption of “management by project” is also related to the adoption of an organizational culture that is close to the project management culture described in Section 2.3. Although, an understanding of project management is critical to an organization that is using “management by projects,” a detailed discussion of the approach itself is outside the scope of this standard.