

## Project Management

*Project management* is a carefully planned and organized effort to accomplish a specific (and usually) one-time effort, for example, construct a building or implement a new computer system. Project management includes developing a project plan, which includes defining project goals and objectives, specifying tasks or how goals will be achieved, what resources are need, and associating budgets and timelines for completion. It also includes implementing the project plan, along with careful controls to stay on the "critical path", that is, to ensure the plan is being managed according to plan. Project management usually follows major phases (with various titles for these phases), including feasibility study, project planning, implementation, evaluation and support/maintenance.

Project Management is composed of several different types of activities such as:

1. Planning the work or objectives
2. Analysis & Design of objectives
3. Assessing and mitigating risk
4. Estimating resources
5. Allocation of resources
6. Organizing the work
7. Acquiring human and material resources
8. Assigning tasks
9. Directing activities
10. Controlling project execution
11. Tracking and Reporting progress
12. Analyzing the results based on the facts achieved

### Approaches

There are several approaches that can be taken to managing project activities including agile, iterative, incremental, and phased approaches.

Regardless of the approach employed, careful consideration needs to be given to clarify surrounding project objectives, goals, and importantly, the roles and responsibilities of all participants and stakeholders.

### The traditional approach

A traditional phased approach identifies a sequence of steps to be completed. In the **traditional approach**, we can distinguish 5 components of a project (4 stages plus control) in the development of a project:

1. project initiation stage;
2. project planning and design stage;
3. project production or execution stage;
4. project completion stage;
5. project monitoring or controlling systems.

Not all projects will visit every stage as projects can be terminated before they reach completion. Some projects probably don't have the planning and/or the monitoring. Some projects will go through steps 2, 3 and 4 multiple times.

### Project control variables

Project Management tries to gain control over four variables:

**time**

The amount of time required to complete the project. Typically broken down for analytical purposes into the time required to complete the components of the project, which is then further broken down into the time required to complete each task contributing to the completion of each component.

**cost**

Cost to develop a project depends on several variables including (chiefly): labor rates, material rates, risk management, plant (buildings, machines, etc.), equipment, and profit. When hiring an independent consultant for a project, cost will typically be determined by the consultant's or firm's per diem rate multiplied by an estimated quantity for completion.

**scope**

Requirements specified for the end result. The overall definition of what the project is supposed to accomplish, and a specific description of what the end result should be or accomplish. A major component of scope is the quality of the final product. The amount of time put into individual tasks determines the overall quality of the project. Some tasks may require a given amount of time to complete adequately, but given more time could be completed exceptionally. Over the course of a large project, quality can have a significant impact on time and cost (or vice versa).

**risk**

Potential points of failure. Most risks or potential failures can be overcome or resolved, given enough time and resources. According to some definitions risk can also be negative, meaning that there is an opportunity to e.g. complete the project faster than expected.

**Project Manager**

An **individual** who has been assigned **responsibility** for accomplishing a specific unit of work. The project manager is typically responsible for the **planning, implementing, controlling, and reporting** of status on a project.

The person assigned **responsibility** and **accountability** for the project and is given the necessary authority to undertake that responsibility. The project manager **reports** to the project Sponsor/Donor.

**Ten Commandments of Project Management**

- I. Set a clear project goal. (Covey: Begin with the end in mind.)
- II. Determine the project objectives. (Sub-units or Sub-goals)
- III. Establish checkpoints (milestones), activities, relationships (how tasks are interrelated), and time estimates.
- IV. Draw a picture of the project schedule (MS Project).
- V. Direct people individually and as a project team.
- VI. Reinforce commitment (walk the talk) and excitement of the project team.
- VII. Keep everyone connected with the project informed.
- VIII. Build agreements that vitalize (win/win) team members.
- IX. Empower yourself and others of the project team.
- X. Encourage risk taking and creativity but manage it closely.

## Project Planning

Project planning is perhaps the most important activity of any project. A lack of proper and thorough planning will rapidly become obvious as the project moves into the subsequent phases. As a result, much time and energy must be dedicated to this activity.

The typical components of project planning include:

- *Create a Project Management Plan* — Include all the associated project documentation noted in the following bullet points plus be sure to include the contact information for your project team members.
- *Project Summary* — The Project Manager should document the problem that the team is trying to resolve. Reference to triple constraints and their priority should be made.
- *Project Requirements* — Time, costs, and performance.
- *Milestones* — Be sure to celebrate along the way.
- *Work Breakdown Structure (WBS)* — The WBS are the lower level, detailed tasks that make up the real work that has to be performed during the project. The depth of the WBS is dependent on what level of clarity and direction is required or desired.
- *Network Diagram* — Having their physical layout always adds clarity and value.
- *Budget* — How much money and time has been contracted for? Are there travel and expense caps that must be adhered to?
- *Project Management Structure* — Communicate project management and team hierarchy.
- *Logistical Support* — Ensure you understand the work environment and the recommended travel and lodging information, if applicable.
- *Acceptance Plan* — This ensures all parties are working from not only the same set of work plans but also the acceptance of the end result.
- *Standards for Property Control and Security* — What system ID's have been created for use? Are access badges required?
- *Project Reviews / Status Reports* — Schedule regular, weekly meetings for entire project team. Coordinate additional resources as needed.

All projects must be defined in terms of Time, Budget, and Performance. This is commonly referred to as the 'Triple Constraints'. The one constraint that has the highest priority becomes the driver of the project.

Triple Constraints

