

1) Triple constraint:

The Triple Constraint demonstrates the key attributes that must be handled effectively for successful completion and closure of any project.

Time – This refers to the actual time required to produce a deliverable. Which in this case, would be the end result of the project. Naturally, the amount of time required to produce the deliverable will be directly related to the amount of requirements that are part of the end result (scope) along with the amount of resources allocated to the project (cost).

Cost – This is the estimation of the amount of money that will be required to complete the project. Cost itself encompasses various things, such as: resources, labor rates for contractors, risk estimates, bills of materials, et cetera. All aspects of the project that have a monetary component are made part of the overall cost structure.

Scope – These are the functional elements that, when completed, make up the end deliverable for the project. The scope itself is generally identified up front so as to give the project the best chance of success.

2) 5 process group: The five PMBOK® process groups outline the necessary competencies that must be achieved in order to secure the most effective use of project resources. These five essential areas or process groups are:

Initiating Process Group: The initiating process group involves the processes, activities, and skills needed to effectively define the beginning of a project. Setting all permits, authorizations, and initial work orders in place to secure an effective and logical progression of initial project activities sets the stage for subsequent success throughout all project phases.

Planning Process Group: The Planning Process Group sets forth the processes needed to define the scope of the project, set strategic plans in place to maximize workflow, and begin to assemble priority lists and plan team needs. This process group also addresses a more narrow clarification of all project goals and expectations and puts in place the project infrastructure necessary to achieve those goals according to the timeline and budgetary constraints.

Executing Process Group: The executing process group involves managing teams effectively while orchestrating timeline expectations and reaching benchmark goals. Project managers utilizing this set of skills will demonstrate a high degree of organization and communication skills while addressing team concerns or other complex situations associated with getting the work done on time and within budget.

Monitoring and Control Process Group: Processing change orders, addressing on-going budget considerations, and mitigating unforeseen circumstances that may affect a team's ability to meet initial project expectations are all part of the core skills and competencies involved in the Monitoring Process Group. Seasoned managers keep the momentum moving forward and guard the project against stalling by actively monitoring progress and using foresight and quick response to address project challenges.

Closing Process Group: Bringing a project to a successful close on time and within budget is no small feat. The Closing Process Group addresses the culmination of strong project management skills demonstrated throughout the other interrelated processes that guided the project. Following through to close all aspects of the process and submitting necessary paperwork on time is just as important as all other skills and processes.

3) Project Charter: In project management, a project charter, project definition, or project statement is a statement of the scope, objectives, and participants in a project. It provides a preliminary delineation of roles and responsibilities, outlines the project objectives, identifies the main stakeholders, and defines the authority of the project manager. It serves as a reference of authority for the future of the project. The terms of reference are usually part of the project charter.

The project charter is usually a short document that refers to more detailed documents such as a new offering request or a request for proposal.

In Initiative for Policy Dialogue (IPD), this document is known as the project charter. In customer relationship management (CRM), it is known as the project definition report. Both IPD and CRM require this document as part of the project management process.

The project charter establishes the authority assigned to the project manager, especially in a matrix management environment. It is considered industry best practice.

The purpose of the project charter is to document:

- Reasons for undertaking the project
- Objectives and constraints of the project
- Directions concerning the solution
- Identities of the main stakeholders
- In-scope and out-of-scope items
- Risks identified early on (A risk plan should be part of the overall project management plan)
- Target project benefits
- High level budget and spending authority

The three main uses of the project charter are:

- To authorize the project - using a comparable format, projects can be ranked and authorized by Return on Investment.
- Serves as the primary sales document for the project - ranking stakeholders have a 1-2 page summary to distribute, present, and keep handy for fending off other project or operations runs at project resources.
- Serves as a focal point throughout the project. For example, it is a baseline that can be used in team meetings and in change control meetings to assist with scope management.

4) Top Down and Bottoms up Estimation:

BOTTOM-UP ESTIMATING: In this style, project managers tally their costs upward, starting at the bottom and accounting for each expected cost. In sum, the total costs should equal the finished project. It's a basic method of estimating, but the benefit is that it's the most accurate means of estimating a project's total cost. Accuracy is achieved just through the process of starting at the very foundation of a project and working your way up through each cost on the project work breakdown structure.

TOP-DOWN ESTIMATING: The top-down approach starts with identifying every major aspect to the project. In home technology installations, you will typically start with the components and features of the job. Then, you will create different labor categories that apply to each task. The cost of the project is measured by estimating how much labor will go into each piece of the job. The set cost of the labor category is multiplied by each relevant task.