

Course: BBA Part III

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Topic: Difference Between PERT and CPM

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## Difference Between PERT and CPM

Project management can be understood as a systematic way of planning, scheduling, executing, monitoring, controlling the different aspects of the project, so as to attain the goal made at the time of project formulation. PERT and CPM are the two network-based project management techniques, which exhibit the flow and sequence of the activities and events. Program (Project) Management and Review Technique (PERT) is appropriate for the projects where the time needed to complete different activities are not known. On the other hand, the Critical Path Method or CPM is apt for the projects which are recurring in nature.

The two scheduling methods use a common approach for designing the network and for ascertaining its critical path. They are used in the successful completion of a project and hence used in conjunction with each other. Nevertheless, the truth is that CPM is different from PERT in a way that the latter concentrates on time while the former stresses on the time-cost trade-off.

The most important differences between PERT and CPM are provided below:

1. PERT is a project management technique, whereby planning, scheduling, organising, coordinating and controlling uncertain activities are done. CPM is a statistical technique of project management in which planning, scheduling, organising, coordination and control of well-defined activities take place.
2. PERT is a technique of planning and control of time. Unlike CPM, which is a method to control costs and time.
3. While PERT is evolved as a research and development project, CPM evolved as a construction project.
4. PERT is set according to events while CPM is aligned towards activities.
5. A deterministic model is used in CPM. Conversely, PERT uses a probabilistic model.
6. There are three times estimates in PERT, i.e. optimistic time ( $t_o$ ), most likely time  $t_M$ , pessimistic time ( $t_p$ ). On the other hand, there is only one estimate in CPM.

7. PERT technique is best suited for a high precision time estimate, whereas CPM is appropriate for a reasonable time estimate.
8. PERT deals with unpredictable activities, but CPM deals with predictable activities.
9. PERT is used where the nature of the job is non-repetitive. In contrast to, CPM involves the job of repetitive nature.
10. There is a demarcation between critical and non-critical activities in CPM, which is not in the case of PERT.
11. PERT is best for research and development projects, but CPM is for non-research projects like construction projects.
12. Crashing is a compression technique applied to CPM, to shorten the project duration, along with the least additional cost. The crashing concept is not applicable to PERT.