PERT

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PERT

- One of the most difficult and most error-prone activities when constructing a project schedule is the determination of the time duration for each task within a work breakdown structure. It is particularly problematic to make these estimates when there is a high degree of complexity and uncertainty about a task.
- PERT is a technique that uses optimistic, pessimistic, and realistic time estimates to calculate the expected time for a particular task. This technique can help you to obtain a better time estimate when there is some uncertainty as to how much time a task will require to be completed.
- The optimistic (o) and pessimistic (p) times reflect the minimum and maximum possible periods of time for an activity to be completed. The realistic (r) time, or most likely time, reflects the project manager's "best guess" of the amount of time the activity actually will require for completion
- . Once each of these estimates is made for an activity, an expected time (ET) can be calculated. Because the expected completion time should be closest to the realistic (r) time, it is typically weighted four times more than the optimistic (o) and pessimistic (p) times. Once you add these values together, it must be divided by six to determine the ET. This equation is shown in the following formula:

Calculation

$$ET = \frac{o + 4r + p}{6}$$

where

ET = expected time for the completion for an activity

o = optimistic completion time for an activity

r = realistic completion time for an activity

p = pessimistic completion time for an activity

EXAMPLE PERT

- For example, suppose that your instructor asked you to calculate an expected time for the completion of an upcoming programming assignment. For this assignment, you estimate an optimistic time of two hours, a pessimistic time of eight hours, and a most likely time of six hours. Using PERT, the expected time for completing this assignment is 5.67 hours. Commercial project management software such as Microsoft Project assists you in using PERT to make expected time calculations. Additionally, many commercial tools allow you to customize the weighting of optimistic, pessimistic, and realistic completion times.

Using Project Management Software

- A wide variety of automated project management tools is available to help you manage a development project.
- New versions of these tools are continuously being developed and released by software vendors.
- Most of the available tools have a set of common features that include the ability to define and order tasks, assign resources to tasks, and easily modify tasks and resources.
- Project management tools are available to run on IBM-compatible personal computers, the Macintosh, and larger mainframe and workstation-based systems.
- These systems vary in the number of task activities supported, the complexity of relationships, system processing and storage requirements, and, of course, cost.

Activities

- When using this system to manage a project, you need to perform at least the following activities:
- Establish a project starting or ending date.
- Enter tasks and assign task relationships.
- Select a scheduling method to review project reports.

Activities Project Manager

- Project management software helps project managers (PMs) and teams collaborate and meet goals on time while managing resources and cost. Functions may include task distribution, time tracking, budgeting, resource planning, team collaboration, and many more.
- People also refer to project management software as Task Management Software or Project Portfolio Management (PPM).
- Project management software covers a range of platforms, each with a slightly different mix of functionality. It's crucial that the vendor you select makes your projects easier to manage and doesn't add unneeded complexity. The transition should be as smooth as possible.
- The three major pillars of project management are planning, tracking, and collaboration.


Thank
You