PERT ESTIMATE CALCULATOR

Nish Malik

PERT

- The **Program** (or **Project**) **Evaluation and Review** Technique, commonly abbreviated PERT, is a method to analyze the involved tasks in completing a given project, especially the time needed to complete each task, and identifying the minimum time needed to complete the total project.

- All plans are estimates and are only as good as the task estimates – unrealistic estimates equal unrealistic plans.

- If the scope of a plan changes, all estimates must change – adding tasks equals added time and cost.

PERT Analysis

- PERT Analysis is a good way to "what if" before a project is launched
  - What tasks will it take to do the project?
  - What is the optimum order of the project tasks?
  - How long will it take to do the project?
  - How likely is the project to succeed?
  - What if the customers wants it earlier, what is the likelihood then?

Critical Path

- **Step 1:** Identify Critical Path Tasks (Column A)

  The longest possible continuous pathway taken from the initial event to the terminal event. It determines the total calendar time required for the project; and, therefore, any time delays along the critical path will delay the reaching of the terminal event by at least the same amount.

Estimates

- **Step 2:** Enter the following Estimates (in days) for all Critical Path Tasks:

  - Optimistic O (Column B): The minimum possible time required to accomplish a task, assuming everything proceeds better than is normally expected.

  - Likely M (Column C): The best estimate of the time required to accomplish a task, assuming everything proceeds as normal.

  - Pessimistic P (Column D): The maximum possible time required to accomplish a task, assuming everything goes wrong (but excluding major catastrophes).

Expected Duration

- **Step 3:** PERT calculator generates:

  - **PERT Expected Duration (Column E):** a probability based expected duration. The best estimate of the time required to accomplish a task, assuming everything proceeds as normal (the implication being that the expected time is the average time the task would require if the task were repeated on a number of occasions over an extended period of time).

    TE = (O + 4M + P) ÷ 6

Standard Deviation and Variance

- **Standard Deviation** (Column F): is the average deviation from the estimated time.
  - SD = (P-O)/6
  - As a general rule, the higher the standard deviation the greater the amount of uncertainty
- **Variance** (Column G): reflects the spread of a value over a normal distribution
  - V=SD^2 (Standard deviation squared)

Probability of Completion

- **Step 4:** Enter Desired Completion Time in days (Column C29)

- **Step 5:** PERT calculator generates:
  - **Probability of Completion** (Column G29)
  - **Z Number** (Column H29)

Q & A