

Chapter Fifteen

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PERT

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Program Evaluation and Review Techniques (PERT)

- - Scheduling is the basis for the management of time on a construction project.
- - Uncertainty is more easily understood by those with a background in statistics.

- -When an activity is stated as having a given duration, it should be recognized that the duration is not an absolute value .
- -Uncertainty in scheduling is considered in the method referred to as the Program Evaluation Review Technique (**PERT**)
- -**PERT** is based on activity estimates derived from a "three time estimate," namely:
 - an optimistic estimate, the estimate of the most likely (mode) duration, and the pessimistic estimate.

The mean estimate of the activity duration can then be computed as follows:

$$T_e = \frac{T_o + 4T_m + T_p}{6}$$

T_e = Mean value of the activity duration.

T_o = Optimistic activity duration.

T_m = Most likely duration.

T_p = Pessimistic activity duration.

Uncertainty in The Duration Estimates Of An Activity Chain

- -Project schedules may consist of hundreds or even thousands of activities, each with a unique level of uncertainty.

-The explanation in the following discussion centers on a simplified network consisting of one chain of activities. The chain will be called the critical path .

- - PERT is used very little in the construction industry.
- - Despite the small amount of use, it is worthwhile to have a good understanding of this technique.
- - When activity durations are assigned to activities, a best-guess number is generally used.
- - This single number assignment of a duration makes it easy to perform network calculations.

- -The use of PERT is more accurate in its depiction of a project as the scheduler is made very aware of the uncertainty that is associated with each activity duration estimate.
- - PERT makes it possible for the scheduler to make more informed decisions about the probability of achieving stated project durations