Project Planning & Control

*Duration Estimation, Network Representation & Analysis -1*

**Week 3**

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Lesson 1
Duration Estimation - Types, Inputs, Methods, Parametric Estimation

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Learning Objectives

• Methods to Estimate Activity Duration

• Examples on parametric methods

• Applicability of different methods
Why Duration Estimation?

• Top-Down approach - based on estimating parameters of leaf elements. (Recall WBS)

• Project duration depends on duration of constituent activities.

• Estimating intermediate milestone

• Resource requirements for the activity
6.4 Activity Duration Estimating

6.4.1 INPUTS

- Enterprise Environmental factors
- Organizational Process Assets
- Project Scope Statement
- Activity List
- Activity Attributes
- Activity resource requirements
- Resource calendars
- Project Management Plan
  - Risk Register
  - Activity Cost estimates
6.4 Activity Duration Estimating

6.4.2 Tools & Techniques

– Expert Judgment (Heuristic)
– Analogous Estimating (Data + Heuristic)
– **Parametric estimating**
– Three Point Estimate (Uncertainty)
– Reserve analysis (Buffer)

6.4.3 Outputs

– Activity duration estimates
– Activity attributes
Simple example....

Total Distance = 300Km

<table>
<thead>
<tr>
<th>Speed</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Km/Hr</td>
<td>3 Hr</td>
</tr>
<tr>
<td>150 Km/Hr</td>
<td>2 Hr</td>
</tr>
<tr>
<td>60Km/Hr</td>
<td>5 Hrs</td>
</tr>
</tbody>
</table>

is speed constant? What influences speed?
Parametric Estimating

Activity Duration

Total Quantity of Work = 300sqm

Determine duration to complete activity:

Prod. Rate  |  10 sqm/day |  20 sqm/day |  30 sqm/day

Duration =  |  30 days   |  15 days    |  10 days

Is production rate constant?

What influences production rate?