Project Management

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Project management

- **Project**
  
  “A project is a series of activities directed to accomplishment of a desired objective.”

- **Management**
  
  “It is the process of Planning, Organizing, coordinating, and Controlling”

*Plan your work first.....then work your plan*
Project management (PM)

- Discipline of initiating, planning, executing, controlling, and closing the work of a team to achieve **specific goals** and meet **specific success criteria** at the specified time.
Types of projects

- **Civil projects**
  - buildings, metro rail, and bridges

- **IT projects**
  - Aadhar, online reservation system for APSRTC

- **Research and development (R&D) projects**
  - New medicine, defense, space
Goals of project management

- Focuses on three important goals:
  - time
  - budget
  - quality.

- Successful projects are completed on schedule, within budget, and according to previously agreed quality standards.
But…

- MIS projects commonly sport 200–300% cost overruns and completion times twice that projected?

- Why do massive construction projects run so late and so over budget?
Allied functions of PM

- Project Initiation
- Project Planning
- Project Execution
- Project Closure
- Risk Management
- Change Management
- Quality Management
- Cost Management
- Issue Management
- Time Management
- Procurement Management
- Acceptance Management
- Communications Management
Road to Better Project Management

- Find a Project plan that fits your style of project management needs
- It may be as simple as creating templates, forms and spreadsheets to track tasks
- Formation of a Project Management committee
- Listing out all the tasks and sub-tasks to accomplish a goal
- Jot down the time period and person responsible against each task/sub-task
Identify a Project Manager

Identify Task Managers

Sequence the activities in relation to time period

Present to the PMC

Finalize by reaching an agreement and start work......
Implementation

- Regular Monitoring
- Resource Support
- Critical issues discussed and solution
- Meeting with the team on completion of each major milestone
- Track the progress against the plan
- System to add/delete tasks in the PMT
Consequences of not using PMT

- DELAY
- COST
- WASTE OF RESOURCES
- QUALITY
- DISSATISFACTION
- REPUTATION
A **Gantt chart** is a type of bar chart that illustrates a project schedule.

It illustrates the start and finish dates of the terminal elements and summary elements of a project.
Network Planning Methods

- Critical Path Method (CPM)
- Programme Evaluation and Review Technique (PERT)

They involves four steps:

i. Describing the Project.
ii. Diagramming the Network.
iii. Estimating time of completion.
iv. Monitoring Project Progress.
Questions Answered by CPM & PERT

- Completion date?
- On Schedule?
- Within Budget?
- Critical Activities?
- How can the project be finished early at the least cost?
Critical Path
The sequence of activities and events where there is no “slack” i.e. Zero slack

Longest path through a network
Building a new house

- Preparation of land
- Build the foundation
- Construct pillars
- Roofing
- Construct walls
- Plumbing work
- Electrical work
- Carpentry work
- Plastering
- Painting
## Activity relationships

<table>
<thead>
<tr>
<th>S. No</th>
<th>Activity particulars</th>
<th>Name of the activity</th>
<th>Predecessor</th>
<th>Activity duration (Weeks)</th>
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<tr>
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<td>Preparation of land</td>
<td>A</td>
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<tr>
<td>2</td>
<td>Build the foundation</td>
<td>B</td>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Construct pillars</td>
<td>C</td>
<td>B</td>
<td>3</td>
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<tr>
<td>4</td>
<td>Fix roofing</td>
<td>D</td>
<td>C</td>
<td>4</td>
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<td>5</td>
<td>Construct walls</td>
<td>E</td>
<td>B</td>
<td>2</td>
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<td>6</td>
<td>Plumbing work</td>
<td>F</td>
<td>E</td>
<td>4</td>
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<td>7</td>
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<td>G</td>
<td>E</td>
<td>3</td>
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<tr>
<td>8</td>
<td>Carpentry work</td>
<td>H</td>
<td>E</td>
<td>3</td>
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<td>9</td>
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<td>I</td>
<td>F, G, H</td>
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<tr>
<td>10</td>
<td>Painting</td>
<td>J</td>
<td>I</td>
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</table>
Network diagram
Evaluating activity slack

Each event has two important times associated with it:

- **Earliest time**, \( T_e \), which is a calendar time when an event can occur when all the predecessor events completed at the earliest possible times.

- **Latest time**, \( T_L \), which is the latest time the event can occur without delaying the subsequent events and completion of the project.

- Difference between the latest time and the earliest time of an event is the **slack time** for that event.

**Positive slack:** Slack is the amount of time an event can be delayed without delaying the project completion.
Critical path

Critical path: A → B → E → F → I → J

Project completion time = 12 weeks
Benefits of CPM/PERT

- Useful at many stages of project management
- Mathematically simple
- Give critical path and slack time
- Provide project documentation
- Useful in monitoring costs
Network analysis Software

- MS Project
- Primavera
- Prism
- WinQSB
- Excel – Solver
- LINDO
Can Mr Naidu take a decision?

- Mr Naidu is a young engineer working in Water Recourse Department, Govt. of AP. He wants to buy a new car. He makes an online survey of 60 different cars in various segments.
- Based on different parameters he selects three different cars: Maruti Swift, Hyundai i-10, and Ford Figo.
- Mr Naidu has four parameters: Cost, Mileage, Aesthetic, and Comfort.
- At this moment he is not able to decide which particular car he has to buy?
Alternatives

Maruthi Swift

Hyundai i-10

Ford Figo
Cost and Mileage parameters

- **Maruti Swift**
  Rs. 7,40,000; Mileage 20.4 KMPL

- **Ford Figo**
  Rs. 7,15,000; Mileage 18.16KMPL

- **Hyundai Grand i-10**
  Rs. 7,30,000; Mileage 24KMPL
Weightage of attributes

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<tr>
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## Weightage of attributes

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<tr>
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<td>X</td>
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## Factor considered (Cost)

<table>
<thead>
<tr>
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<th>Maruthi Swift</th>
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<th>Ford Figo</th>
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<td>0</td>
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<tr>
<td>Hyundai i-10</td>
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<td>1</td>
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<tr>
<td>Ford Figo</td>
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## Factor considered (Mileage)

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<td>Ford Figo</td>
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## Factor considered (Aesthetic)

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<td><strong>Hyundai i-10</strong></td>
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## Factor considered (Comfort)

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### Total weightage matrix

<table>
<thead>
<tr>
<th>Car</th>
<th>Attribute</th>
<th>Cost</th>
<th>Mileage</th>
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<th>Comfort</th>
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<tr>
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<td>1/6</td>
<td>1/6</td>
<td>4/6</td>
<td>7/6</td>
<td>I</td>
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<tr>
<td><strong>Hyundai i-10</strong></td>
<td>Score</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>7/6</td>
<td>I</td>
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<td>2/6</td>
<td>1/6</td>
<td>2/6</td>
<td>6/6</td>
<td>II</td>
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<tr>
<td><strong>Ford Figo</strong></td>
<td>Score</td>
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<td>1</td>
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<td>5/6</td>
<td>III</td>
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<td>Wt Score</td>
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<td>0</td>
<td>1/6</td>
<td>0</td>
<td>5/6</td>
<td>III</td>
</tr>
</tbody>
</table>
Project Management & Organizational Excellence

- Modern Life, Increased opportunities and comfort
- Demand for better services
- Increased Responsibility
- Multiple assignments & projects
- People Orientation, Service Orientation
- Build Organizations, Serve People, Serve the Nation
- Achieve Organizational Excellence by mastering Project Management Skills
Thank You All
&
Happy Journey