ESTIMATING COSTS IN PROJECT MANAGEMENT

BY: PAWAN ADHIKARI

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1. What is Cost Estimation?

- In the field of project management, **cost estimation** is the process of estimating all of the costs associated with completing a project within scope and according to its timeline.
- Initial, high-level estimates are often used in the earliest stages of project planning and can determine whether or not a project is ultimately pursued.
- Once a project is approved and an organization chooses to move forward with it, more detailed and granular cost estimates become necessary in order to appropriately allocate various.
- Cost estimate should include both the direct and indirect cost associated with bringing a project through to completion.

TECHNIQUES USED IN COST ESTIMATIONS:

- It describes how exactly project managers completing a cost estimation depends upon a number of factors.
- Some organizations, for example, require all projects to be budgeted for according to very specific policies, others may differ to the expertise of the project manager.

Four of the most common cost estimation techniques:

1. Analogous Estimation
2. Parametric Estimation
3. Bottom-Up Estimation
4. Three-Point Estimation

1. ANALOGOUS ESTIMATION

- Through analogous estimating a project manager calculates the expected costs of a project-based upon the known costs associated with a similar project that was completed in the past.
- This method of estimation relies upon a combination of historical data and expert judgment of the project manager.
- Because no two projects are exactly the same, analogous estimating does have its limitations such as, it is often leveraged in the earliest stages of project planning, when a rough estimate can be enough.
- Analogous estimating can also be used when there is relatively little information about the current project available.

2. PARAMETRIC ESTIMATION

- In parametric estimating, historical data and statistical modeling are used to assign a dollar value to certain project costs.
- This approach determines the underlying unit cost for a particular component of a project and then sales that unit cost as appropriate.
- It is much more accurate than analogous estimating but requires more initial data to accurately assess costs.
- Parametric estimating is often used in construction.
- For example, an experienced construction manager might understand that the typical new home will cost a certain number of dollars per square foot (assuming a particular margin of error).If this average cost, the margin of error, and the square footage of a new project are known, then parametric estimating will allow them to identify a budget that should accurately fall within this range.
- Other examples might include estimating the cost per unit to print and bind a book or to build an electronic device

3. BOTTOM-UP ESTIMATION

- In bottom-up estimating, a larger project is broken down into a number of smaller components & the project manager then estimates costs specifically for each of these smaller work packages.
- For example, if a project includes work that will be split between multiple departments within an organization, costs might be split out by department. Once all costs have been estimated, they are tallied into a single larger cost estimate for the project as a whole.
- Because bottom-up estimating allows a project manager to take a more granular look at individual tasks within a project, this technique allows for a very accurate estimation process.

4. THREE-POINT ESTIMATION

- In three-point estimating, a project manager identifies three separate estimates for the costs associated with a project.
- The first point represents an “optimistic” estimate, where work is done and funds spent most efficiently.
- The second point represents the “pessimistic” estimate, where work is done and funds spent in the least efficient manner.
- And the third point represents the “most likely” scenario, which typically falls somewhere in the middle.
- Three-point estimating relies on a number of weighted formulas and originates from the Program Analysis and Review Technique (PERT).