Project Management Foundations: Budgets

with Author Bob McGannon

Estimation Approached and When to Use Them

Budgets Estimation Types and Techniques

Estimation Stage and Types

1. **Rough order of magnitude** – Used early in the project as an initial estimate, before more detailed analysis is performed

2. **Budgetary** – The second stage of estimating usually derived after some research and an initial plan for approaching the project is created

3. **Definitive** – The final stage of estimating. This is the most detailed type of estimate, created when a full set of detailed plans for delivering the project are in place and verified.

Estimation Approaches

1. **Analogous** – This estimation approach is typically used as a rough order of magnitude estimate. With an analogous estimate, you used the actual costs and duration from a completed project as the basis for creating an estimate for your current project. You adjust the actuals from the completed project as appropriate, to accommodate differences between the completed project and the project you are currently estimating.

2. **Heuristic** – This estimation approach is typically used for rough order of magnitude or budgetary estimates. A heuristic estimate uses historically accurate high-level estimates to complete an aspect of a project. For example, "testing typically consumes 10% of the total project time" is a heuristic estimate used in IT projects.

3. **Expert judgment** – This estimation approach is used for all estimation types. When your team does not have the experience or expertise to estimate some aspect of a project, you call in an expert who has worked on a similar project to analyze your project and provide an estimate.

4. **Parametric** – (Pre-calculated formula) Parametric estimates also use historical information but are constructed in terms of a formula to estimate your project. Cost per square foot for office space or a residential home and cost per lane mile (or kilometer) are common instances of parametric estimate. In IT, cost per hundred lines of code, cost per function point, or cost per function in agile approaches are common heuristic estimates.

5. **Delphi** – The Delphi estimation approach is similar to expert judgment; however, you use a number of different experts to review your project and provide estimates. Differing opinions from the experts are shared, and the expert panel then makes comments or revisions on their estimates. The project team reviews the dialog from the experts and takes the elements they believe best represents the truth in their project to produce an estimate.

6. **PERT** (also called the triangular approach) – This approach uses a mathematical formula to consider the optimistic, most likely, and pessimistic estimates for a given activity (or the whole project). The formula is (Optimistic + Most Likely + Pessimistic) ÷ 3 to create an average or (Optimistic + 3x Most Likely + Pessimistic) ÷ 6 for a weighted average.