ANSWERS TO READING GUIDE

PRACTICE STANDARD FOR PROJECT ESTIMATING

DESCRIPTION

This document summarizes the answers to the reading guide for the *Practice Standard for Project Estimating*, so that students can evaluate their work by comparing their answers to the ones in this document.

QUESTIONS AND ANSWERS

1. What is the purpose of this document? How should it be used?
   The purpose of the document is to:
   - Provide a standard for the project management profession and other stakeholders that defines the aspects of project estimating, recognized as best practices on most projects.
   - Provide a standard that is widely known and consistently applied.
   - Be used to complement Chapters 6 and 7 of the *PMBOK* guide.

2. What is an estimate? In which knowledge areas can it be applied?
   An estimate is a quantitative assessment of the likely amount or outcome. It is mostly applied for the areas of Time Management and Cost Management.

3. What is rolling wave planning or progressive elaboration?
   Rolling wave planning is an estimating technique, which uses ongoing progressive elaboration to continually define and redefine the estimate.

4. What are the stages in the estimating life cycle?
   The stages in the estimating life cycle are:
   - Prepare to make estimates.
   - Create estimates.
   - Manage estimates.
   - Improve the estimation process.

5. How are the project management roles related to the estimation process?

The PM roles related to the estimation are shown in the following table from the *Practice Standard for Project Estimating*.

Role	Description	Responsibilities
Project manager	The person accountable for the estimate, but not necessarily the one responsible to do the estimating	• Document the estimating approach and plan • Coordinate the team of estimators • Review the estimate and initiate revisions if necessary • Aggregate the estimates from the estimators • Identify and document risks and assumptions • Work with appropriate finance resources to create cost estimates and contingency (if appropriate) • Work with management to set expectations for stakeholders around estimates, assumptions, and risks
Program manager	Aggregation of estimates across the projects within the program	• Aggregate the project estimates from the project managers • Work with management to set expectations for stakeholders around estimates, assumptions, and risks
Estimators	Individual or team responsible for estimating a specific piece of the project; estimators can be team members from the project, people identified as experts in the area being estimated, or other stakeholders	• Create the activity resource and activity duration estimates • Document assumptions and risks
Senior management/ project sponsor	Individual or team who reviews and approves the project estimate	• Review and approve the project estimate
Customers of estimates	Individual or team who provides the scope to be estimated and who accepts the estimates	• Provide initial scope to be estimated • Review and accept the project estimate

6. What is a rough order of magnitude (ROM)?
   A rough order of magnitude (ROM) is a preliminary estimation that is typically done during the early stages of the project. It can be in the range of ± 50%.

7. What is the relationship between the project progress and the accuracy of the estimates?
   The accuracy level of estimates is directly related to the activity definition and available information. The estimates can be refined as more information becomes available, making the project estimating an iterative and evolving process aligned with the concepts of progressive elaboration. For example, a project in the initiation phase could have a ROM estimate in the range of ± 50%. Later in the project, as more information is available, estimates could narrow to a range of ± 10%.

8. What is the relationship between the project risks and the accuracy of the estimates?
   All project estimates involve assumptions, uncertainty, and identified potential risks. Therefore, the accuracy level of estimates is directly related to the activity definition and available information. Contingency reserves are applied to estimates based upon available information and identified risks. As the project gains more information and the estimating range decreases, the need for contingency reserves associated with uncertainties in estimation should decrease as well.

9. What are the characteristics of a good estimate?
   The basic characteristics of a good estimate include the following:
   - Clear identification of tasks
   - Broad participation in preparing estimates
   - Availability of valid data
   - Standardized structure for the estimates
   - Provisions for program uncertainties
   - Recognition of inflation
   - Recognition of excluded costs
   - Independent review of estimates
   - Revision of estimates for significant project changes

10. In terms of estimates, are there any differentiated practices for different application areas?
    Although estimating life-cycle stages is the same for all types of projects, there are some differences in the estimation metrics and models that are employed across industries (for example, software development, construction, and petroleum refining).