

# Chapter 5

*Student:* \_\_\_\_\_

1. The process of forecasting or approximating the time and cost of completing project deliverables is called
  - A. Budgeting.
  - B. Predicting.
  - C. Estimating.
  - D. Planning.
  - E. Guesstimating.
  
2. In practice, estimating processes are frequently classified as
  - A. Top down/bottom up.
  - B. Rough/polished.
  - C. Precise/order of magnitude.
  - D. Draft/final.
  - E. Broad/Specific.
  
3. What is the relationship between organizational culture and estimating?
  - A. There is no relationship
  - B. Cultural norms affect the accuracy of estimates
  - C. Culture determines whether estimates are made
  - D. Estimating alters cultural norms
  - E. Estimating and culture are independent

4. A good starting point for developing time and cost estimates is
- A. Past experience.
  - B. Work packages.
  - C. Task analysis.
  - D. Time and motion studies.
  - E. Work breakdown structure.
5. Which of the following is NOT one of the factors that need to be considered to improve quality of estimates for project times and costs?
- A. Planning horizon
  - B. People
  - C. Padding estimates
  - D. Profit
  - E. Project structure
6. Ed is looking over the actual results of projects and comparing them to what was estimated. He notices that the projects that took six months or longer to complete were noticeably more off the estimates. Which of the following factors is he recognizing?
- A. Padding estimates
  - B. Project duration
  - C. Project structure
  - D. People
  - E. Organization culture

7. Janet is forecasting how much money her department needs to support a new project. She estimates that two people and \$25,000 in expenses will cover her needs. Because management typically insists on reducing forecasts by 20 percent, she increases her estimates to allow for that reduction. Which of the following factors is illustrated in this situation?
- A. Padding estimates
  - B. Planning horizon
  - C. Project structure
  - D. People
  - E. Organization culture
8. Which of the following is a good condition for top-down estimating?
- A. Cost and time important
  - B. Fixed price contract
  - C. Customer wants details
  - D. Internal, small project
  - E. Large scale project involving several subcontractors
9. Which of the following is a good condition for bottom-up estimating?
- A. When the project involves strategic decision making
  - B. When the project is internal and small
  - C. When there is a fixed price contract
  - D. When there is high uncertainty involved in the project
  - E. When there is an unstable scope

10. Richard is collecting estimates for a house that he will have the funding to build in 12 months. Which of the following factors does Richard need to consider in regard to the quality of these estimates?
- A. Padding estimates
  - B. Planning horizon
  - C. Project structure
  - D. People
  - E. Project duration
11. Which of the following does NOT help describe a bottom-up estimating approach?
- A. They are made by someone who uses experience and/or information from someone else to determine overall project cost and duration
  - B. They establish low-cost, efficient methods for completing activities
  - C. They typically comes from the people actually doing the work and who are most knowledgeable about the task at hand
  - D. Estimates are made at the work package level and then "rolled up" to determine estimates for major deliverables and for the project itself
  - E. They can take place after the project has been planned in detail
12. Which of the following methods is NOT considered a top-down approach to estimating project time and cost?
- A. Ratio
  - B. Template
  - C. Apportion
  - D. Function point
  - E. Learning curve

13. Jose is forecasting project time and cost for constructing a new building by multiplying the total square footage by a given dollar amount. Which of the following methods is he using?
- A. Ratio
  - B. Template
  - C. Apportion
  - D. Function point
  - E. Learning curve
14. Sean is forecasting the time and cost of developing a customized software program by looking at the number of inputs, outputs, inquiries, files, and interfaces. Which of the following methods is he using?
- A. Ratio
  - B. Template
  - C. Apportion
  - D. Function point
  - E. Learning curve
15. Laura is forecasting the time and cost of developing an intranet for a new customer. Her department has completed six such intranets for customers during the last two years. Although the proposed system is about the same size as the others, she estimates that it will take about 10 percent less time and money. Which of the following methods is she using?
- A. Ratio
  - B. Template
  - C. Apportion
  - D. Function point
  - E. Learning curve

16. Learning curves are more likely to be applied in situations where most of the costs are

- A. Materials.
- B. Labor.
- C. Overhead.
- D. Evenly spread over materials, labor, and overhead.
- E. Labor and materials.

17. Which of the following describes the consensus method?

- A. Should be used only for projects that require the same task, group of tasks, or product to be repeated several times
- B. Uses several people with relevant experience regarding the task at hand to make time and cost estimates
- C. Uses pooled experience of senior and/or middle managers to estimate the total project duration and cost
- D. Uses the number of square feet to estimate the total cost and time of the project
- E. Uses weighted macro variables or major parameters such as the number of inputs or outputs to estimate the total cost and time of the project

18. Which of the following is NOT one of the bottom-up approaches to estimating project time and cost?

- A. Parametric procedures applied to specific tasks
- B. Estimates for the WBS work packages
- C. Learning curve
- D. Template method
- E. Range estimates

19. Which of the following would be the best method for projects where the final product is not known and the uncertainty is very large?
- A. Function point
  - B. Template
  - C. Learning curve
  - D. Phase estimating
  - E. Apportion
20. Rob is responsible for estimating a work package that has a significant amount of uncertainty associated with the time and cost to complete. Due to the uncertainty involved he will be making a low, an average and a high estimate. Rob is using which estimating approach?
- A. Parametric procedures applied to specific tasks
  - B. Template method
  - C. Apportion method
  - D. Range estimating
  - E. Learning curve
21. Which of the following is NOT true in regard to the level of detail estimates should contain?
- A. It will vary with the complexity of the project
  - B. Detailed estimates are crucial to project success; therefore, an effort should be made to make estimates as detailed as possible for all projects
  - C. The more detailed the estimate is the more the estimate will cost to create
  - D. Inadequate detail might lead to estimates that fall short of their intended purpose
  - E. Excessive detail means unproductive paperwork and unnecessary expenditures

22. The salary of the project manager would be an example of what type of cost found in a project?
- A. Labor
  - B. Direct
  - C. Direct project overhead
  - D. General and administrative overhead
  - E. Salary
23. Typical kinds of costs found in a project include all of the following EXCEPT
- A. Direct costs.
  - B. Project overhead costs.
  - C. General and administrative overhead costs.
  - D. Labor.
  - E. All of these are examples of costs found in a project.
24. Accounting would be an example of which of the following costs typically found in a project?
- A. Labor
  - B. Direct
  - C. Direct project overhead
  - D. General and administrative overhead
  - E. Salary



25. Which of the following would best represent direct project costs?

- A. Only labor
- B. Only materials
- C. Only equipment
- D. Both labor and materials
- E. Labor, materials and equipment

26. Which of the following is NOT one of the recommended guidelines for developing useful work package estimates?

- A. Estimates should be made by those responsible for the work
- B. Use several people to estimate the same work
- C. Estimates should be based on normal conditions
- D. Estimates should include a normal level of contingency
- E. Estimates should be independent of other projects

27. Companies are using which of the following for improving the estimating process for future projects?

- A. Adjusting estimates based on individual forecasting abilities
- B. Benchmarking and using the experience of other companies
- C. Using time and motion studies
- D. Creating historical databases of previous projects
- E. Establishing an estimating training course for all employees

28. Reasons why estimating time and cost are important include all of the following EXCEPT

- A. To schedule work.
- B. To determine how long the project should take and cost.
- C. To develop cash flow needs.
- D. To determine how well the project is progressing.
- E. To help establish a project selection process.

29. The bottom-up approach for estimating times and costs that uses costs from past projects that were similar to the current project is known as

- A. Detailed WBS work package estimates.
- B. Template method.
- C. Function point method.
- D. Time-phased cost estimates.
- E. Phase estimating.

30. Which of the following top-down methods is used when projects closely follow past projects in regard to features and costs of those features, and result in costs being assigned by percentages to major segments of the project?

- A. Apportion
- B. Function point
- C. Phase estimating
- D. Learning curve
- E. Consensus

31. Refining estimates may be necessary for a number of reasons. For example, resource shortages, in the form of people, equipment, or materials, can extend original estimates. This is a good example of

- A. Hidden interaction costs.
- B. Things going wrong on a project.
- C. Normal conditions not applying.
- D. Changes in project scope.
- E. The customer not being clear about their expectations.

32. Refining estimates may be necessary for a number of reasons. For example, people working on prototype development needing time to interact with the design engineers after the design is completed is a good example of

- A. Hidden interaction costs.
- B. Things going wrong on a project.
- C. Normal conditions not applying.
- D. Changes in project scope.
- E. The customer not being clear about their expectations.

33. Refining estimates may be necessary for a number of reasons. For example, a manager getting further into a project and obtaining a better understanding of what needs to be done to accomplish a project and meet the needs of the customer is an example of

- A. Hidden interaction costs.
- B. Things going wrong on a project.
- C. Normal conditions not applying.
- D. Changes in project scope.
- E. There is never a good reason to refine estimates.

34. Refining estimates may be necessary for a number of reasons. For example, design flaws being revealed after the fact, extreme weather conditions, and accidents occurring are good examples of

- A. Hidden interaction costs.
- B. Things going wrong on a project.
- C. Normal conditions not applying.
- D. Changes in project scope.
- E. None of these are correct.

35. When work package estimates are made by individuals most knowledgeable about the work being performed and these estimates are then "rolled up" to find estimated costs for major deliverables and the project itself, \_\_\_\_\_ estimating is being used.

\_\_\_\_\_

36. When someone uses experience and/or information from others to determine the project duration and total cost, \_\_\_\_\_ estimating is being used.

\_\_\_\_\_

37. The estimating factor that considers the decreasing accuracy of estimates as one forecasts activities that are further into the future is known as \_\_\_\_\_.

\_\_\_\_\_

38. The estimating factor that considers the skill level of participants doing the estimating is known as the \_\_\_\_\_ factor.

\_\_\_\_\_

39. The estimating factor that considers the tendency to overestimate project time and cost in order to improve the likelihood of meeting the estimates is known as the \_\_\_\_\_ factor.

\_\_\_\_\_

40. The estimating factor that considers the prevailing belief in some firms that detailed estimating takes too much time and is not worth the effort is an example of the \_\_\_\_\_ factor.

\_\_\_\_\_

41. The preferred method for situations involving strategic decision making, projects with a high degree of uncertainty, and projects with an unstable scope is the \_\_\_\_\_ approach to estimating project time and costs.

\_\_\_\_\_

42. The preferred method for situations where the cost and time estimates are important, in a fixed contract situation, and when the customer wants a lot of detail is the \_\_\_\_\_ approach to estimating project time and costs.

\_\_\_\_\_

43. The information necessary to conduct a bottom-up estimate of project time and costs starts with the \_\_\_\_\_.

\_\_\_\_\_

44. Jose is forecasting project time and cost for constructing a new building by multiplying the total square footage by a given dollar amount. He is using the \_\_\_\_\_ method of top-down estimating.

\_\_\_\_\_

45. Rose is working on estimates for a project that is very similar to a previous project, in that it has many of the same features and those features have similar costs. Each feature or deliverable will represent the same percentage of the total cost as it did for the previous project. Rose is using the \_\_\_\_\_ method of top-down estimating.

\_\_\_\_\_

46. The top-down method for estimating project time and cost that uses weighted variables based on major parameters and is frequently used in the development of software is known as the \_\_\_\_\_ method.

\_\_\_\_\_

47. The top-down method of estimating project time and costs that is useful for projects requiring the same task, group of tasks, or product repeated several times, especially if it is labor intensive, is the \_\_\_\_\_.

\_\_\_\_\_

48. The bottom-up method of estimating where work package time and costs for past projects are used as a starting point for a new project and adjustments are made based on differences in the new project is known as the \_\_\_\_\_ method.

\_\_\_\_\_

49. The top-down method of estimating when the pooled experience of senior and/or middle managers are used to estimate the total project duration and cost is the \_\_\_\_\_ method.

\_\_\_\_\_

50. The approach to estimating project time and cost that begins with an overall estimate for the project and then refines estimates for various stages of the project as it is implemented is known as \_\_\_\_\_.

\_\_\_\_\_

51. The estimating approach that is best to use on projects where there is an unusual amount of uncertainty surrounding the project and when it is impractical to estimate times and costs for the entire project is known as \_\_\_\_\_.

\_\_\_\_\_

52. A way to improve estimates on future projects is to collect and archive data on past project estimates and actuals. Creating a \_\_\_\_\_ for estimating is a way to achieve this goal.

\_\_\_\_\_

53. Project costs such as labor and materials are typically classified as \_\_\_\_\_ costs.

\_\_\_\_\_

54. The salary of the project manager and temporary rental space for the project team would be classified as \_\_\_\_\_ costs.

\_\_\_\_\_

55. Estimates should be made based on \_\_\_\_\_ conditions, efficient methods, and a normal level of resources.

\_\_\_\_\_

56. Costs that are associated with time devoted to the coordination in meetings and briefings as well as time necessary to resolve disconnects between tasks are known as \_\_\_\_\_ costs.

\_\_\_\_\_

57. Costs that are not directly related to a specific project, such as advertising, accounting, and senior management's salary, are classified as \_\_\_\_\_ costs.

\_\_\_\_\_

58. Project estimates should be broken down into as much detail, and with as much accuracy, as possible.

True False

59. Cost, time, and budget estimates are the lifeline for control; they serve as the standard for comparison of the actual and the planned throughout the life of the project.

True False

60. Past experience is almost always used primarily in the initial phases of estimating.

True False

61. After averaging out the underestimates and overestimates, a long-duration project is more likely to be on target than a short-term, small project.

True False

62. The process of forecasting or approximating the time and cost of completing project deliverables is called planning.

True False

63. The project management structure chosen to manage the project will have little impact on the quality of estimates.

True False



64. As long as everyone in a project adds a little padding to reduce risk, the project duration and cost estimates will be more accurate.

True False

65. Organization culture can significantly influence project time and cost estimates.

True False

66. If a project is internal to the company and relatively small, the bottom-up approach to estimating time and costs for the project is the best choice.

True False

67. If time and costs are important to a project the top-down approach to estimating time and costs for the project is the best choice.

True False

68. The ideal approach to estimating project time and costs is to use both the top-down and the bottom-up approach.

True False

69. Estimates that are typically based on estimates of elements found in the work breakdown structure are called bottom-up estimates.

True False

70. Top-down estimates usually are derived from someone who uses experience and/or information to determine the project duration and total cost.

True False

71. Estimating the total cost of a house by multiplying the total square feet by cost per square foot is an example of the apportion method of estimating costs.

True False

72. Estimating the total cost of a project by multiplying each major function by a complexity factor is an example of the apportion method of estimating costs.

True False

73. Phase estimating is used when a project cannot be rigorously defined because of the uncertainty of design or the final product.

True False

74. All task time estimates need consistent time units.

True False

75. One guideline to follow when estimating time, cost and resources is to use several people to make the estimate for a task.

True False

76. The consensus method of estimating costs is a bottom-up technique.

True False

77. The salary of the project manager and her administrative assistant is classified as direct labor costs.

True False

78. General and administrative costs are usually allocated as a percent of the total of a direct cost which includes labor, materials, or equipment.

True False

79. Work package estimates should include allowances for contingencies.

True False

80. Estimates are supposed to be based on normal conditions. While this is a good starting point, it rarely holds true in real life.

True False

81. Identify and briefly describe the two major classifications of estimating project time and costs.

82. List and briefly describe four reasons why estimating time and cost are important to project management.

83. Identify and briefly describe three out of the six factors that should be considered to improve the quality of estimates for project times and costs.
84. Under what conditions would the top-down approach to estimating project times and costs be the best choice?
85. Under what conditions would the bottom-up approach to estimating project times and costs be the best choice?

86. Describe the ideal approach for a project manager to develop optimal estimates for a project's time and costs.
87. Estimates should be based on normal conditions, efficient methods, and a normal level of resources. Explain.
88. Describe phase estimating. When should it be used and how is it different from all other top-down and bottom-up methods of estimating?

89. Identify the drawbacks to an excessive level of detail in estimating project times and costs.

90. Identify the three major categories of project costs and give an example of each.

91. List and describe two reasons why estimates may need to be refined.

## Chapter 5 Key

1. The process of forecasting or approximating the time and cost of completing project deliverables is called
- A. Budgeting.
  - B. Predicting.
  - C. Estimating.
  - D. Planning.
  - E. Guesstimating.

Estimating is the process of forecasting or approximating the time and cost of completing project deliverables.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #1*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 1 Easy*

2. In practice, estimating processes are frequently classified as

- A. Top down/bottom up.
- B. Rough/polished.
- C. Precise/order of magnitude.
- D. Draft/final.
- E. Broad/Specific.

Estimating processes are frequently classified as top-down and bottom-up. Top-down estimates are usually done by senior management. Bottom-up estimates are typically done by the people doing the work.

*AACSB: Reflective Thinking*  
*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #2*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 1 Easy*

3. What is the relationship between organizational culture and estimating?

- A. There is no relationship
- B. Cultural norms affect the accuracy of estimates
- C. Culture determines whether estimates are made
- D. Estimating alters cultural norms
- E. Estimating and culture are independent

Organizational culture can significantly influence project estimates. Organizations vary in the importance they attach to estimates.

*AACSB: Reflective Thinking*  
*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #3*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 2 Medium*



4. A good starting point for developing time and cost estimates is

- A. Past experience.
- B. Work packages.
- C. Task analysis.
- D. Time and motion studies.
- E. Work breakdown structure.

Past experience is a good starting point for developing time and cost estimates. But past experiences must almost always be refined to reach an acceptable level of accuracy.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #4*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 2 Medium*

5. Which of the following is NOT one of the factors that need to be considered to improve quality of estimates for project times and costs?

- A. Planning horizon
- B. People
- C. Padding estimates
- D. Profit
- E. Project structure

Factors that need to be considered to improve the quality of estimates are the planning horizon, the project duration, the people responsible for making the estimates, project management structure and organization, padding estimates, and the organizational culture.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Remember*

6. Ed is looking over the actual results of projects and comparing them to what was estimated. He notices that the projects that took six months or longer to complete were noticeably more off the estimates. Which of the following factors is he recognizing?

- A. Padding estimates
- B.** Project duration
- C. Project structure
- D. People
- E. Organization culture

Long duration projects increase the uncertainty in estimates.

7. Janet is forecasting how much money her department needs to support a new project. She estimates that two people and \$25,000 in expenses will cover her needs. Because management typically insists on reducing forecasts by 20 percent, she increases her estimates to allow for that reduction. Which of the following factors is illustrated in this situation?

- A. Padding estimates
- B. Planning horizon
- C. Project structure
- D. People
- E. Organization culture

In work situations where we are asked for time and cost estimates, most of us are inclined to add a little padding to increase the probability and reduce the risk of being late. If everyone at all levels of the project adds a little padding to reduce risk, the project duration and cost are seriously overstated.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #7*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 2 Medium*

8. Which of the following is a good condition for top-down estimating?

- A. Cost and time important
- B. Fixed price contract
- C. Customer wants details
- D. Internal, small project
- E. Large scale project involving several subcontractors

Good conditions for top-down estimating are when there is high uncertainty involved in the project, when the project is small and internal, when the scope is unstable and when it involves strategic decision making.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #6*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 3 Hard*

9. Which of the following is a good condition for bottom-up estimating?

- A. When the project involves strategic decision making
- B. When the project is internal and small
- C. When there is a fixed price contract
- D. When there is high uncertainty involved in the project
- E. When there is an unstable scope

Good conditions for bottom-up estimating are when cost and time are important to the project, when there is a fixed-price contract and when the customer wants details.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #6*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 3 Hard*

10. Richard is collecting estimates for a house that he will have the funding to build in 12 months. Which of the following factors does Richard need to consider in regard to the quality of these estimates?

- A. Padding estimates
- B.** Planning horizon
- C. Project structure
- D. People
- E. Project duration

If Richard will not have funding to start the project for 12 months, he needs to consider the planning horizon. The accuracy of the time and cost estimates decrease as the planning horizon expands.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #10*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 2 Medium*

11. Which of the following does NOT help describe a bottom-up estimating approach?
- A. They are made by someone who uses experience and/or information from someone else to determine overall project cost and duration
  - B. They establish low-cost, efficient methods for completing activities
  - C. They typically comes from the people actually doing the work and who are most knowledgeable about the task at hand
  - D. Estimates are made at the work package level and then "rolled up" to determine estimates for major deliverables and for the project itself
  - E. They can take place after the project has been planned in detail

Top-down estimates usually are derived from someone who uses experience and/or information to determine the project duration and total cost.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #11*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 2 Medium*

12. Which of the following methods is NOT considered a top-down approach to estimating project time and cost?
- A. Ratio
  - B. Template
  - C. Apportion
  - D. Function point
  - E. Learning curve

Template methods are used in bottom-up approach to estimating.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Remember*

13. Jose is forecasting project time and cost for constructing a new building by multiplying the total square footage by a given dollar amount. Which of the following methods is he using?

- A. Ratio
- B. Template
- C. Apportion
- D. Function point
- E. Learning curve

Top-down methods (sometimes called parametric) usually use ratios, or surrogates, to estimate project times or costs. Top-down approaches are often used in the concept or "need" phase of a project to get an initial duration and cost estimate for the project. For example, contractors frequently use the number of square feet to estimate the cost and time to build a new house.

14. Sean is forecasting the time and cost of developing a customized software program by looking at the number of inputs, outputs, inquiries, files, and interfaces. Which of the following methods is he using?

- A. Ratio
- B. Template
- C. Apportion
- D. Function point
- E. Learning curve

In the software industry, software development projects are frequently estimated using weighted macro variables called "function points" or major parameters such as number of inputs, number of outputs, number of inquiries, number of data files, and number of interfaces.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #14*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*



15. Laura is forecasting the time and cost of developing an intranet for a new customer. Her department has completed six such intranets for customers during the last two years. Although the proposed system is about the same size as the others, she estimates that it will take about 10 percent less time and money. Which of the following methods is she using?

- A. Ratio
- B. Template
- C. Apportion
- D. Function point
- E. Learning curve

This is a phenomenon of tasks that are labor intensive. In these circumstances the pattern of improvement phenomenon can be used to predict the reduction in time to perform the task. From empirical evidence across all industries, the pattern of this improvement has been quantified in the learning curve (also known as improvement curve, experience curve, and industrial progress curve).

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #15*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

16. Learning curves are more likely to be applied in situations where most of the costs are

- A. Materials.
- B. Labor.
- C. Overhead.
- D. Evenly spread over materials, labor, and overhead.
- E. Labor and materials.

This is a phenomenon of tasks that are labor intensive. In these circumstances the pattern of improvement phenomenon can be used to predict the reduction in time to perform the task. From empirical evidence across all industries, the pattern of this improvement has been quantified in the learning curve (also known as improvement curve, experience curve, and industrial progress curve). This phenomenon is especially true of tasks that are labor intensive.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #16*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

17. Which of the following describes the consensus method?

- A. Should be used only for projects that require the same task, group of tasks, or product to be repeated several times
- B. Uses several people with relevant experience regarding the task at hand to make time and cost estimates
- C. Uses pooled experience of senior and/or middle managers to estimate the total project duration and cost
- D. Uses the number of square feet to estimate the total cost and time of the project
- E. Uses weighted macro variables or major parameters such as the number of inputs or outputs to estimate the total cost and time of the project

The consensus method simply uses the pooled experience of senior and/or middle managers to estimate the total project duration and cost. This typically involves a meeting where experts discuss, argue, and ultimately reach a decision as to their best guess or estimate.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #17*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

18. Which of the following is NOT one of the bottom-up approaches to estimating project time and cost?

- A. Parametric procedures applied to specific tasks
- B. Estimates for the WBS work packages
- C. Learning curve
- D. Template method
- E. Range estimates

Learning curve is part of top-down approach to estimating.

*AACSB: Reflective Thinking*  
*Accessibility: Keyboard Navigation*  
*Blooms: Understand*  
*Larson - Chapter 05 #16*  
*Learning Objective: Methods for Estimating Project Times and Costs*  
*Level of Difficulty: 2 Medium*

19. Which of the following would be the best method for projects where the final product is not known and the uncertainty is very large?

- A. Function point
- B. Template
- C. Learning curve
- D. Phase estimating
- E. Apportion

Phase estimating is used when an unusual amount of uncertainty surrounds a project and it is impractical to estimate times and costs for the entire project.

*AACSB: Reflective Thinking*  
*Accessibility: Keyboard Navigation*  
*Blooms: Understand*  
*Larson - Chapter 05 #15*  
*Learning Objective: Methods for Estimating Project Times and Costs*  
*Level of Difficulty: 2 Medium*

20. Rob is responsible for estimating a work package that has a significant amount of uncertainty associated with the time and cost to complete. Due to the uncertainty involved he will be making a low, an average and a high estimate. Rob is using which estimating approach?

- A. Parametric procedures applied to specific tasks
- B. Template method
- C. Apportion method
- D. Range estimating
- E. Learning curve

Range estimating works best when work packages have significant uncertainty associated with the time or cost to complete. Under these circumstances it is a prudent policy to require three estimates: low, average and high.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #26*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

21. Which of the following is NOT true in regard to the level of detail estimates should contain?

- A. It will vary with the complexity of the project
- B. Detailed estimates are crucial to project success; therefore, an effort should be made to make estimates as detailed as possible for all projects
- C. The more detailed the estimate is the more the estimate will cost to create
- D. Inadequate detail might lead to estimates that fall short of their intended purpose
- E. Excessive detail means unproductive paperwork and unnecessary expenditures

At any level of management, the detail of an estimate should be no more than necessary and sufficient. Otherwise time and money are wasted.

*AACSB: Reflective Thinking*  
*Accessibility: Keyboard Navigation*  
*Blooms: Understand*  
*Larson - Chapter 05 #21*  
*Learning Objective: Level of Detail*  
*Level of Difficulty: 2 Medium*

22. The salary of the project manager would be an example of what type of cost found in a project?

- A. Labor
- B. Direct
- C. Direct project overhead
- D. General and administrative overhead
- E. Salary

The salary of the project manager would be an example of the direct project overhead cost. The cost is linked to the project, but cannot be directly linked to a work package.

*AACSB: Reflective Thinking*  
*Accessibility: Keyboard Navigation*  
*Blooms: Understand*  
*Larson - Chapter 05 #22*

23. Typical kinds of costs found in a project include all of the following EXCEPT

- A. Direct costs.
- B. Project overhead costs.
- C. General and administrative overhead costs.
- D. Labor.
- E. All of these are examples of costs found in a project.

Typical costs found in a project include direct costs, which consist of labor, materials and equipment, direct project overhead costs and general and administrative overhead costs.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #23*

*Learning Objective: Types of Costs*

*Level of Difficulty: 1 Easy*

24. Accounting would be an example of which of the following costs typically found in a project?

- A. Labor
- B. Direct
- C. Direct project overhead
- D. General and administrative overhead
- E. Salary

Accounting is an example of a cost that is carried out for the duration of the project and cannot be linked to a specific work package or even the project itself. These costs are called general and administrative overhead.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

25. Which of the following would best represent direct project costs?

- A. Only labor
- B. Only materials
- C. Only equipment
- D. Both labor and materials
- E. Labor, materials and equipment

Direct project costs can be clearly chargeable to a specific work package. These costs represent real cash outflows as the project progresses; therefore they are usually separated from overhead costs. They include labor, materials and equipment costs.



26. Which of the following is NOT one of the recommended guidelines for developing useful work package estimates?

- A. Estimates should be made by those responsible for the work
- B. Use several people to estimate the same work
- C. Estimates should be based on normal conditions
- D. Estimates should include a normal level of contingency
- E. Estimates should be independent of other projects

Estimates should be made by the individuals responsible for the work, should involve several people with relevant experience and knowledge of the tasks, should be made based on normal conditions and should not include any allowances for contingencies, should be created with consistent time units, and should be independent of other projects.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #26*

*Learning Objective: Estimating Guidelines for Times; Costs; and Resources*

*Level of Difficulty: 2 Medium*

27. Companies are using which of the following for improving the estimating process for future projects?

- A. Adjusting estimates based on individual forecasting abilities
- B. Benchmarking and using the experience of other companies
- C. Using time and motion studies
- D. Creating historical databases of previous projects
- E. Establishing an estimating training course for all employees

Some organizations have large estimating departments of professional estimators—e.g., Boeing, Kodak, IBM—that have developed large time and cost databases.

*AACSB: Reflective Thinking*

28. Reasons why estimating time and cost are important include all of the following EXCEPT

- A. To schedule work.
- B. To determine how long the project should take and cost.
- C. To develop cash flow needs.
- D. To determine how well the project is progressing.
- E. To help establish a project selection process.

Estimates are not important to help establish a project selection process. This process should be established before the project was selected.

29. The bottom-up approach for estimating times and costs that uses costs from past projects that were similar to the current project is known as

A. Detailed WBS work package estimates.

**B.** Template method.

C. Function point method.

D. Time-phased cost estimates.

E. Phase estimating.

If the project is similar to past projects, the costs from past projects can be used as a starting point for the new project. Differences in the new project can be noted and past times and costs adjusted to reflect these differences.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #29*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

30. Which of the following top-down methods is used when projects closely follow past projects in regard to features and costs of those features, and result in costs being assigned by percentages to major segments of the project?

- A. Apportion
- B. Function point
- C. Phase estimating
- D. Learning curve
- E. Consensus

Apportionment is used when projects closely follow past projects in features and costs. Given good historical data, estimates can be made quickly with little effort and reasonable accuracy. This method is very common in projects that are relatively standard but have some small variation or customization.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #36*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

31. Refining estimates may be necessary for a number of reasons. For example, resource shortages, in the form of people, equipment, or materials, can extend original estimates. This is a good example of

- A. Hidden interaction costs.
- B. Things going wrong on a project.
- C. Normal conditions not applying.
- D. Changes in project scope.
- E. The customer not being clear about their expectations.

Estimates are supposed to be based on normal conditions. While this is a good starting point, it rarely holds true in real life. This is especially true when it comes to the availability of resources. Resource shortages, whether in the form of people, equipment, or materials, can extend original estimates.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #31*

*Learning Objective: Refining Estimates*

*Level of Difficulty: 2 Medium*

32. Refining estimates may be necessary for a number of reasons. For example, people working on prototype development needing time to interact with the design engineers after the design is completed is a good example of

- A. Hidden interaction costs.
- B. Things going wrong on a project.
- C. Normal conditions not applying.
- D. Changes in project scope.
- E. The customer not being clear about their expectations.

Interaction costs are hidden in estimates. According to the guidelines, each task estimate is supposed to be done independently. However, tasks are rarely completed in a vacuum. Work on one task is dependent upon prior tasks, and the hand-offs between tasks require time and attention. For example, people working on prototype development need to interact with design engineers after the design is completed, whether to simply ask clarifying questions or to make adjustments in the original design.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #32*

*Learning Objective: Refining Estimates*

*Level of Difficulty: 2 Medium*

33. Refining estimates may be necessary for a number of reasons. For example, a manager getting further into a project and obtaining a better understanding of what needs to be done to accomplish a project and meet the needs of the customer is an example of

- A. Hidden interaction costs.
- B. Things going wrong on a project.
- C. Normal conditions not applying.
- D. Changes in project scope.
- E. There is never a good reason to refine estimates.

As he or she gets further and further into the project, the manager obtains a better understanding of what needs to be done to accomplish the project. This may lead to major changes in project plans and costs. Likewise, if the project is a commercial project, changes often have to be made midstream to respond to new demands by the customer and/or competition.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #33*

*Learning Objective: Refining Estimates*

*Level of Difficulty: 2 Medium*

34. Refining estimates may be necessary for a number of reasons. For example, design flaws being revealed after the fact, extreme weather conditions, and accidents occurring are good examples of

- A. Hidden interaction costs.
- B. Things going wrong on a project.**
- C. Normal conditions not applying.
- D. Changes in project scope.
- E. None of these are correct.

Design flaws are revealed after the fact, extreme weather conditions occur, accidents happen, and so forth. Although you shouldn't plan for these risks to happen when estimating a particular task, the likelihood and impact of such events need to be considered.

*AACSB: Reflective Thinking*  
*Accessibility: Keyboard Navigation*  
*Blooms: Understand*  
*Larson - Chapter 05 #34*  
*Learning Objective: Refining Estimates*  
*Level of Difficulty: 2 Medium*

35. When work package estimates are made by individuals most knowledgeable about the work being performed and these estimates are then "rolled up" to find estimated costs for major deliverables and the project itself, \_\_\_\_\_ estimating is being used.

### **bottom-up**

The bottom-up approach at the work package level can serve as a check on cost elements in the WBS by rolling up the work packages and associated cost accounts to major deliverables.

*AACSB: Reflective Thinking*  
*Blooms: Understand*  
*Larson - Chapter 05 #35*  
*Learning Objective: Top-Down versus Bottom-Up Estimating*  
*Level of Difficulty: 1 Easy*



36. When someone uses experience and/or information from others to determine the project duration and total cost, \_\_\_\_\_ estimating is being used.

**top-down**

Top-down estimates are usually done by senior management. Management will often derive estimates from analogy, group consensus, or mathematical relationships.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #36*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 1 Easy*

37. The estimating factor that considers the decreasing accuracy of estimates as one forecasts activities that are further into the future is known as \_\_\_\_\_.

**planning horizon**

The quality of the estimate depends on the planning horizon; estimates of current events are close to 100 percent accurate but are reduced for more distant events. The accuracy of time and cost estimates should improve as you move from the conceptual phase to the point where individual work packages are defined.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #37*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 2 Medium*

38. The estimating factor that considers the skill level of participants doing the estimating is known as the \_\_\_\_\_ factor.

**people**

The people factor can introduce errors in estimating times and cost. For example, accuracy of estimates depends on the skills of the people making the estimates. A close match of people skills to the task will influence productivity and learning time.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #36*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 2 Medium*

39. The estimating factor that considers the tendency to overestimate project time and cost in order to improve the likelihood of meeting the estimates is known as the \_\_\_\_\_ factor.

**padding estimates**

In work situations where we are asked for time and cost estimates, most of us are inclined to add a little padding to increase the probability and reduce the risk of being late. If everyone at all levels of the project adds a little padding to reduce risk, the project duration and cost are seriously overstated.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #39*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 2 Medium*

40. The estimating factor that considers the prevailing belief in some firms that detailed estimating takes too much time and is not worth the effort is an example of the \_\_\_\_\_ factor.

### organization culture

Organizations vary in the importance they attach to estimates. The prevailing belief in some organizations is that detailed estimating takes too much time and is not worth the effort or that it's impossible to predict the future. Other organizations subscribe to the belief that accurate estimates are the bedrock of effective project management. Organization culture shapes every dimension of project management; estimating is not immune to this influence.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #40*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 2 Medium*

41. The preferred method for situations involving strategic decision making, projects with a high degree of uncertainty, and projects with an unstable scope is the \_\_\_\_\_ approach to estimating project time and costs.

### top-down

Good conditions for top-down estimating are when there is high uncertainty involved in the project, when the project is small and internal, when the scope is unstable and when it involves strategic decision making.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #41*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 2 Medium*

42. The preferred method for situations where the cost and time estimates are important, in a fixed contract situation, and when the customer wants a lot of detail is the \_\_\_\_\_ approach to estimating project time and costs.

### bottom-up

Good conditions for bottom-up estimating are when cost and time are important to the project, when there is a fixed-price contract and when the customer wants details.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #42*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 2 Medium*

43. The information necessary to conduct a bottom-up estimate of project time and costs starts with the \_\_\_\_\_.

### work package

If possible and practical, you want to push the estimating process down to the work package level for bottom-up estimates that establish low-cost, efficient methods. This process can take place after the project has been defined in detail. Good sense suggests project estimates should come from the people most knowledgeable about the estimate needed.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #43*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 2 Medium*

44. Jose is forecasting project time and cost for constructing a new building by multiplying the total square footage by a given dollar amount. He is using the \_\_\_\_\_ method of top-down estimating.

### ratio

Top-down methods (sometimes called parametric) usually use ratios, or surrogates, to estimate project times or costs. Top-down approaches are often used in the concept or "need" phase of a project to get an initial duration and cost estimate for the project. For example, contractors frequently use the number of square feet to estimate the cost and time to build a new house.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #44*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

45. Rose is working on estimates for a project that is very similar to a previous project, in that it has many of the same features and those features have similar costs. Each feature or deliverable will represent the same percentage of the total cost as it did for the previous project. Rose is using the \_\_\_\_\_ method of top-down estimating.

### apportion

This method is an extension to the ratio method. Apportionment is used when projects closely follow past projects in features and costs. Given good historical data, estimates can be made quickly with little effort and reasonable accuracy. This method is very common in projects that are relatively standard but have some small variation or customization.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #45*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

46. The top-down method for estimating project time and cost that uses weighted variables based on major parameters and is frequently used in the development of software is known as the \_\_\_\_\_ method.

### function point

In the software industry, software development projects are frequently estimated using weighted macro variables called "function points" or major parameters such as number of inputs, number of outputs, number of inquiries, number of data files, and number of interfaces.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #46*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

47. The top-down method of estimating project time and costs that is useful for projects requiring the same task, group of tasks, or product repeated several times, especially if it is labor intensive, is the \_\_\_\_\_.

### learning curve

This is a phenomenon of tasks that are labor intensive. In these circumstances the pattern of improvement phenomenon can be used to predict the reduction in time to perform the task. From empirical evidence across all industries, the pattern of this improvement has been quantified in the learning curve (also known as improvement curve, experience curve, and industrial progress curve).

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #47*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

48. The bottom-up method of estimating where work package time and costs for past projects are used as a starting point for a new project and adjustments are made based on differences in the new project is known as the \_\_\_\_\_ method.

**template**

If the project is similar to past projects, the costs from past projects can be used as a starting point for the new project. Differences in the new project can be noted and past times and costs adjusted to reflect these differences.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #46*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

49. The top-down method of estimating when the pooled experience of senior and/or middle managers are used to estimate the total project duration and cost is the \_\_\_\_\_ method.

**consensus**

The consensus method simply uses the pooled experience of senior and/or middle managers to estimate the total project duration and cost. This typically involves a meeting where experts discuss, argue, and ultimately reach a decision as to their best guess or estimate.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #49*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

50. The approach to estimating project time and cost that begins with an overall estimate for the project and then refines estimates for various stages of the project as it is implemented is known as \_\_\_\_\_.

**phase estimating**

This approach begins with a top-down estimate for the project and then refines estimates for phases of the project as it is implemented. Some projects by their nature cannot be rigorously defined because of the uncertainty of design or the final product. Phase estimating is used when an unusual amount of uncertainty surrounds a project and it is impractical to estimate times and costs for the entire project.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #50*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

51. The estimating approach that is best to use on projects where there is an unusual amount of uncertainty surrounding the project and when it is impractical to estimate times and costs for the entire project is known as \_\_\_\_\_.

**phase estimating**

Some projects by their nature cannot be rigorously defined because of the uncertainty of design or the final product. Phase estimating is used when an unusual amount of uncertainty surrounds a project and it is impractical to estimate times and costs for the entire project.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #51*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*



52. A way to improve estimates on future projects is to collect and archive data on past project estimates and actuals. Creating a \_\_\_\_\_ for estimating is a way to achieve this goal.

**database**

The best way to improve estimates is to collect and archive data on past project estimates and actuals. Saving historical data provides a knowledge base for improving project time and cost estimating.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #52*

*Learning Objective: Creating a Database for Estimating*

*Level of Difficulty: 1 Easy*

53. Project costs such as labor and materials are typically classified as \_\_\_\_\_ costs.

**direct**

Direct project costs can be clearly chargeable to specific work packages. They include labor costs, equipment costs and material costs.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #53*

*Learning Objective: Types of Costs*

*Level of Difficulty: 1 Easy*

54. The salary of the project manager and temporary rental space for the project team would be classified as \_\_\_\_\_ costs.

**direct overhead**

Direct overhead rates more closely pinpoint which resources of the organization are being used in the project. Direct project overhead costs can be tied to project deliverables or work packages. Examples include the salary of the project manager and temporary rental space for the project team.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #54*

*Learning Objective: Types of Costs*

*Level of Difficulty: 2 Medium*

55. Estimates should be made based on \_\_\_\_\_ conditions, efficient methods, and a normal level of resources.

**normal**

Estimates should be based on normal conditions, efficient methods, and a normal level of resources.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #55*

*Learning Objective: Estimating Guidelines for Times; Costs; and Resources*

*Level of Difficulty: 1 Easy*

56. Costs that are associated with time devoted to the coordination in meetings and briefings as well as time necessary to resolve disconnects between tasks are known as \_\_\_\_\_ costs.

### interaction

Time, and therefore cost, devoted to managing interactions rises exponentially as the number of people and different disciplines involved increases on a project.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #56*

*Learning Objective: Refining Estimates*

*Level of Difficulty: 2 Medium*

57. Costs that are not directly related to a specific project, such as advertising, accounting, and senior management's salary, are classified as \_\_\_\_\_ costs.

### general and administrative overhead

General and administrative costs represent organization costs that are not directly linked to a specific project. These costs are carried for the duration of the project.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #57*

*Learning Objective: Types of Costs*

*Level of Difficulty: 2 Medium*

58. Project estimates should be broken down into as much detail, and with as much accuracy, as possible.

**FALSE**

Detailed data gathering is not always possible, practical or necessary when developing cost and time estimates.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #56*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 2 Medium*

59. Cost, time, and budget estimates are the lifeline for control; they serve as the standard for comparison of the actual and the planned throughout the life of the project.

**TRUE**

Project status reports depend on reliable estimates as the major input for measuring variances and taking corrective action.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #55*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 1 Easy*

60. Past experience is almost always used primarily in the initial phases of estimating.

**TRUE**

Past experience is a good starting point for developing time and cost estimates.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

61. After averaging out the underestimates and overestimates, a long-duration project is more likely to be on target than a short-term, small project.

**FALSE**

Long-duration projects increase the uncertainty in estimates.

AACSB: Reflective Thinking

Accessibility: Keyboard Navigation

Blooms: Understand

Larson - Chapter 05 #61

Learning Objective: Factors Influencing the Quality of Estimates

Level of Difficulty: 2 Medium

62. The process of forecasting or approximating the time and cost of completing project deliverables is called planning.

**FALSE**

The process of forecasting the time and cost of completing project deliverables is called estimating.

AACSB: Reflective Thinking

Accessibility: Keyboard Navigation

Blooms: Understand

Larson - Chapter 05 #62

Learning Objective: Factors Influencing the Quality of Estimates

Level of Difficulty: 1 Easy

63. The project management structure chosen to manage the project will have little impact on the quality of estimates.

**FALSE**

Which project structure is chosen to manage the project will influence time and cost estimates.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #63*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 2 Medium*

64. As long as everyone in a project adds a little padding to reduce risk, the project duration and cost estimates will be more accurate.

**FALSE**

If everyone at all levels of the project adds a little padding to reduce risk, the project estimates will be seriously overestimated. This phenomenon causes some managers or owners to call for a 10-15 percent cut in time and/or cost for the project. Of course the next time the game is played, the person estimating cost and/or time will pad the estimate to 20 percent or more.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #64*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 2 Medium*

65. Organization culture can significantly influence project time and cost estimates.

**TRUE**

Organization culture can significantly influence project estimates. For example, in some organizations padding estimates is tolerated and even privately encouraged. Other organizations place a premium on accuracy and strongly discourage estimating gamesmanship.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #65*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 1 Easy*

66. If a project is internal to the company and relatively small, the bottom-up approach to estimating time and costs for the project is the best choice.

**FALSE**

Good conditions for top-down estimating are when there is high uncertainty involved in the project, when the project is small and internal, when the scope is unstable and when it involves strategic decision making.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #66*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 1 Easy*

67. If time and costs are important to a project the top-down approach to estimating time and costs for the project is the best choice.

**FALSE**

Good conditions for bottom-up estimating are when cost and time are important to the project, when there is a fixed-price contract and when the customer wants details.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #67*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 1 Easy*

68. The ideal approach to estimating project time and costs is to use both the top-down and the bottom-up approach.

**TRUE**

The ideal approach is for the project manager to allow enough time for both the top-down and bottom-up estimates to be worked out so a complete plan based on reliable estimates can be offered to the customer. In this way false expectations are minimized for all stakeholders and negotiation is reduced.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #68*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 2 Medium*



69. Estimates that are typically based on estimates of elements found in the work breakdown structure are called bottom-up estimates.

**TRUE**

Bottom-up estimates start with estimates for work packages. These then can be "rolled up" to estimate the cost and duration of major deliverables and the project itself.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #69*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 1 Easy*

70. Top-down estimates usually are derived from someone who uses experience and/or information to determine the project duration and total cost.

**TRUE**

Top-down estimates usually are derived from someone who uses experience and/or information to determine the project duration and total cost.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #70*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 1 Easy*

71. Estimating the total cost of a house by multiplying the total square feet by cost per square foot is an example of the apportion method of estimating costs.

**FALSE**

Apportionment is used when projects closely follow past projects in features and costs. Given good historical data, estimates can be made quickly with little effort and reasonable accuracy. This method is very common in projects that are relatively standard but have some small variation or customization. Estimating the total cost of a house by multiplying the total square feet by cost per square foot is an example of the ratio method of estimating costs.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #71*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

72. Estimating the total cost of a project by multiplying each major function by a complexity factor is an example of the apportion method of estimating costs.

**FALSE**

Apportionment is used when projects closely follow past projects in features and costs. Given good historical data, estimates can be made quickly with little effort and reasonable accuracy. This method is very common in projects that are relatively standard but have some small variation or customization. Estimating the total cost of a project by multiplying each major function by a complexity factor is an example of the function point method of estimating costs.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #72*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

73. Phase estimating is used when a project cannot be rigorously defined because of the uncertainty of design or the final product.

TRUE

Phase estimating is used when an unusual amount of uncertainty surrounds a project and it is impractical to estimate times and costs for the entire project.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #73*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 2 Medium*

74. All task time estimates need consistent time units.

TRUE

Estimates of time must consider whether normal time is represented by calendar days, workdays, workweeks, hours, minutes, etc. Network analysis requires a standard unit of time.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #74*

*Learning Objective: Estimating Guidelines for Times; Costs; and Resources*

*Level of Difficulty: 1 Easy*

75. One guideline to follow when estimating time, cost and resources is to use several people to make the estimate for a task.

**TRUE**

It is well known that cost or time estimates usually have a better chance of being reasonable and realistic when several people with relevant experience and/or knowledge of the task are used.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #75*

*Learning Objective: Estimating Guidelines for Times; Costs; and Resources*

*Level of Difficulty: 1 Easy*

76. The consensus method of estimating costs is a bottom-up technique.

**FALSE**

The consensus method simply uses the pooled experience of senior and/or middle managers to estimate the total project duration and cost. This typically involves a meeting where experts discuss, argue, and ultimately reach a decision as to their best guess or estimate.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #76*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 1 Easy*

77. The salary of the project manager and her administrative assistant is classified as direct labor costs.

**FALSE**

Direct project overhead costs can be tied to project deliverables or work packages. Examples include the salary of the project manager and temporary rental space for the project team.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #77*

*Learning Objective: Types of Costs*

*Level of Difficulty: 2 Medium*

78. General and administrative costs are usually allocated as a percent of the total of a direct cost which includes labor, materials, or equipment.

**TRUE**

General and administrative (G&A) costs are usually allocated as a percent of total direct cost, or a percent of the total of a specific direct cost such as labor, materials, or equipment.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #78*

*Learning Objective: Types of Costs*

*Level of Difficulty: 2 Medium*

79. Work package estimates should include allowances for contingencies.

**FALSE**

Work package estimates should not include allowances for contingencies. The estimate should assume normal or average conditions even though every work package will not materialize as planned.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #79*

*Learning Objective: Estimating Guidelines for Times; Costs; and Resources*

*Level of Difficulty: 2 Medium*

80. Estimates are supposed to be based on normal conditions. While this is a good starting point, it rarely holds true in real life.

**TRUE**

Estimates are supposed to be based on normal conditions. While this is a good starting point, it rarely holds true in real life. This is especially true when it comes to the availability of resources.

*AACSB: Reflective Thinking*

*Accessibility: Keyboard Navigation*

*Blooms: Understand*

*Larson - Chapter 05 #80*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 1 Easy*

81. Identify and briefly describe the two major classifications of estimating project time and costs.

Answer will vary

Feedback: (1) Top-down estimates are made for the project as a whole and typically made by top management; (2) Bottom-up estimates are made at the work package level and by those responsible for completing the work packages.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #81*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 2 Medium*

82. List and briefly describe four reasons why estimating time and cost are important to project management.

Answer will vary

Feedback: Estimating time and cost are important to project management because they are needed to support good decisions, to schedule work, to determine how long the project should take and its cost, to determine whether the project is worth doing, to develop cash flow needs, to determine how well the project is progressing and to develop a time-phased budget.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #82*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 1 Easy*

83. Identify and briefly describe three out of the six factors that should be considered to improve the quality of estimates for project times and costs.

Answer will vary

Feedback: (1) Planning horizon; (2) Project duration; (3) People; (4) Project structure and organization; (5) Padding estimates; (6) Organization culture.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #83*

*Learning Objective: Factors Influencing the Quality of Estimates*

*Level of Difficulty: 3 Hard*

84. Under what conditions would the top-down approach to estimating project times and costs be the best choice?

Answer will vary

Feedback: In the early stages of a project to help develop the initial plan, in making strategic decisions, in projects of high uncertainty, in small internal projects, or in projects with an unstable scope.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #84*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 3 Hard*



85. Under what conditions would the bottom-up approach to estimating project times and costs be the best choice?

Answer will vary

Feedback: When low-cost, efficient estimates are needed, when time and cost are important, when working on a fixed price contract, or when the customer wants details.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #85*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 3 Hard*

86. Describe the ideal approach for a project manager to develop optimal estimates for a project's time and costs.

Answer will vary

Feedback: The ideal approach is to allow enough time for both the top-down and bottom-up estimates to be worked out and included in the final plan.

*AACSB: Reflective Thinking*

*Blooms: Understand*

*Larson - Chapter 05 #86*

*Learning Objective: Top-Down versus Bottom-Up Estimating*

*Level of Difficulty: 3 Hard*

87. Estimates should be based on normal conditions, efficient methods, and a normal level of resources. Explain.

Answer will vary

Feedback: Normal conditions are sometimes difficult to discern, but it is necessary to have a consensus in the organization as to what normal conditions mean in this project. This establishes a certain level of accuracy.

*AACSB: Analytic*

*Blooms: Analyze*

*Larson - Chapter 05 #87*

*Learning Objective: Estimating Guidelines for Times; Costs; and Resources*

*Level of Difficulty: 3 Hard*

88. Describe phase estimating. When should it be used and how is it different from all other top-down and bottom-up methods of estimating?

Answer will vary

Feedback: This approach starts with a top-down estimate and then estimates are refined after each phase of the project. Some projects cannot be clearly defined because of their uncertainty. Phase estimating uses a two-estimate system over the life of the project. A detailed estimate is developed for the immediate phase and a macro estimate is made for the remaining phases of the project.

*AACSB: Analytic*

*Blooms: Analyze*

*Larson - Chapter 05 #88*

*Learning Objective: Methods for Estimating Project Times and Costs*

*Level of Difficulty: 3 Hard*

89. Identify the drawbacks to an excessive level of detail in estimating project times and costs.

Answer will vary

Feedback: If the estimate reflects excessive detail, there is a tendency to break the work effort into department assignments. This tendency can become a barrier to success, since the emphasis will be on departmental outcomes rather than on deliverable outcomes. Excessive detail also means more unproductive paperwork.

*AACSB: Analytic*

*Blooms: Analyze*

*Larson - Chapter 05 #89*

*Learning Objective: Level of Detail*

*Level of Difficulty: 3 Hard*

90. Identify the three major categories of project costs and give an example of each.

Answer will vary

Feedback: (1) Direct costs (labor, materials, equipment, other); (2) Project overhead costs (salaries of project managers, rent on space to house the project, etc.); (3) General and administrative overhead costs (advertising, accounting, and senior management of the organization).

*AACSB: Reflective Thinking*

*Blooms: Remember*

*Larson - Chapter 05 #90*

*Learning Objective: Types of Costs*

*Level of Difficulty: 2 Medium*

91. List and describe two reasons why estimates may need to be refined.

Answer will vary

Feedback: (1) Interaction costs are hidden in estimates; (2) Normal conditions do not apply; (3) Things go wrong on projects; (4) Changes occur in project scope and plans.

*AACSB: Analytic*

*Blooms: Analyze*

*Larson - Chapter 05 #91*

*Learning Objective: Refining Estimates*

*Level of Difficulty: 3 Hard*

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