

Solution to the Scenario-Based Team Activity

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Problem Solution

Given Data

- **Total Budget (BAC):** \$300,000
- **Planned Work Completion:** 60%
- **Actual Work Completion:** 50%
- **Actual Cost Incurred (AC):** \$200,000

1. Calculations

Planned Value (PV)

Formula

$$PV = (\text{Planned Work Percentage}) \times (\text{Total Budget})$$

Calculation:

$$PV = 0.60 \times 300,000 = 180,000$$

Interpretation: The planned value of work to be completed by now is \$180,000.

Earned Value (EV)

Formula

$$EV = (\text{Actual Work Percentage}) \times (\text{Total Budget})$$

Calculation:

$$EV = 0.50 \times 300,000 = 150,000$$

Interpretation: The earned value, representing the budgeted value of the actual work completed, is \$150,000.

Schedule Performance Index (SPI)

Formula

$$SPI = \frac{EV}{PV}$$

Calculation:

$$SPI = \frac{150,000}{180,000} = 0.833$$

Interpretation: The project is behind schedule ($SPI < 1$).

Cost Performance Index (CPI)

Formula

$$CPI = \frac{EV}{AC}$$

Calculation:

$$CPI = \frac{150,000}{200,000} = 0.75$$

Interpretation: The project is over budget (CPI < 1).

Estimate to Complete (ETC)

Formula

$$ETC = \frac{BAC - EV}{CPI}$$

Calculation:

$$ETC = \frac{300,000 - 150,000}{0.75} = \frac{150,000}{0.75} = 200,000$$

Interpretation: The remaining cost to complete the project is estimated at \$200,000.

Estimate at Completion (EAC)

Formula

$$EAC = \frac{BAC}{CPI}$$

Calculation:

$$EAC = \frac{300,000}{0.75} = 400,000$$

Interpretation: The total cost at project completion is estimated to be \$400,000, exceeding the budget by \$100,000.

Variance at Completion (VAC)

Formula

$$VAC = BAC - EAC$$

Calculation:

$$VAC = 300,000 - 400,000 = -100,000$$

Interpretation: The project is expected to exceed the budget by \$100,000.

2. Interpretation of Metrics

- **SPI (0.833):** The project is behind schedule as only 83.3% of the planned work has been completed.
- **CPI (0.75):** The project is over budget, as for every dollar spent, only 75 cents of value has been delivered.
- **EAC (\$400,000):** The project is projected to cost \$400,000, exceeding the original budget by \$100,000.

3. Proposed Corrective Actions

- **Reallocate Resources:** Assign additional team members or tools to critical tasks to improve productivity and catch up on schedule.
- **Review Scope and Priorities:** Reassess the project scope to identify non-critical features that can be deferred or removed to save time and cost.

Conclusion

Using project management metrics, we identified that the project is behind schedule and over budget. To mitigate these issues, resource reallocation and scope adjustments are recommended. This analysis highlights the importance of continuous monitoring and corrective actions in project management.