

- **Proportionality rule**
 - Taking credit for progress based on either the percent of the budget that has been expended or the percent of the elapsed time that has gone by.
 - This rule can be subdivided according to the subactivities within the task

• **3 Variances, earned value chart and their significance:**

Variances can help analyze a project (negative variance is bad)

- **Cost Variance (CV):** $CV = EV - AC$.
 - CV is the difference between the amount earned and the amount spent.
 - Negative variance – COST OVERRUN
 - It is a measure of the **efficiency** at which the work is performed. CV is independent of whether the project is ahead or behind schedule.
- **Schedule Variance (SV):** $SV = EV - PV$.
 - SV is the difference between the amount earned and the amount that should have been spent based on the plan.
 - It is a measure of whether the project is AHEAD OR BEHIND SCHEDULE.
- **Time Variance (TV):** $TV = ST - AT$.
 - TV is the difference between the intended schedule for the work performed and the actual time taken to perform it.
 - Negative Variance – BEHIND SCHEDULE

1) $CV = EV - AC$

2) **$CPI (COST PERFORMANCE INDEX) = EV/AC$**

3) $SV = EV - PV$

4) **$SPI (SCHEDULE PERFORMANCE INDEX) = EV/PV$**

Negative variances are unfavorable.

If an index is less than one, the variance is unfavorable.

5) **$CSI (COST SCHEDULE INDEX) = (CPI)(SPI)$**

6) **$TV (TIME PERFORMANCE INDEX) = SV / slope [Slope = PV / Days] \rightarrow$**
predicts the project is ___ days behind/in front of schedule given the estimated EV

7) $EV = 70\% \times PV$

$ETC = (BAC + EV)/CPI$

$EAC = ETC + AC$

Example: book. Updating a project's earned value (p455)

ETC = Estimated cost to complete (cost to complete the project from a given point in time, it changes based on the project performance to date)

BAC = Budget at completion

EV= Earned Value

CPI = Cost performance index

EAC = Estimated cost at completion (Total cost of the project)

AC = Amount expended to date (actual cost)

“To complete” VS “At completion”

- PM reviewing what is complete & what remains
- Final cost & final completion date are moving targets
- PM compiles these into a “to complete” forecast
- ***Actual + Forecast = Final date and cost at completion***

Microsoft project can used to perform the earned value calculations

Milestone Reporting

- Report created when reaches a major milestone
- Designed to keep everyone up-to-date on project status
- Executive and clients --- only report they receive

Computerized PMIS (Project Management Information Systems)

- Real projects with large volumes of data require computers to manage the monitoring process.
- **Problems:**
 - Spending more time on computer than managing project
 - Data may not report real and significant problems
 - Overload information
 - Computer dependence, manager wait for the computer to tell problem

Week 11

Project Control and Termination

Control (Scope, Time, Cost)

Purpose/objective of Control:

- 1) The regulation of results through the alternation of activities
- 2) The stewardship (handling operation) of organizational asset

3 Aspects of Control:

- 1) **Physical Asset Control** (control over the use of physical assets, includes preventive and corrective maintenance, must also control inventory)
- 2) **Human Resource Control** (controlling and maintain the growth of people, hard to measure, people working on projects can gain a wide range of experience, organization never stop trying through appraisals, surveys, and other techniques)
- 3) **Financial Resource Control** (current asset, project budget, capital investment control. Even though projects are unique, but they must conform to the financial control processes of the parent organization and possibly the customer's as well)