

Basic Principles of EVM*

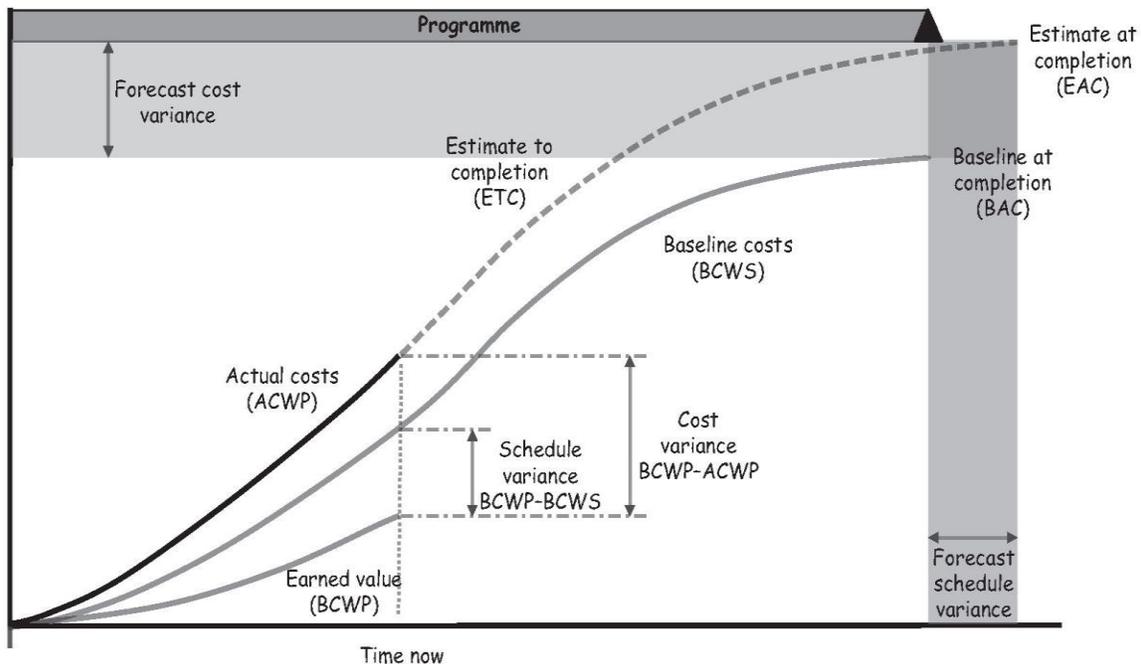
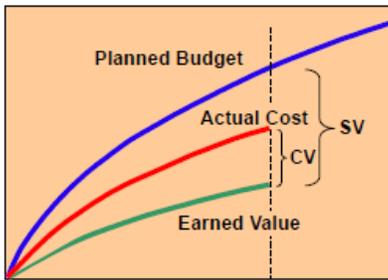
1. Plan all work scope for the program to completion
2. Breakdown the program work scope into finite pieces that can be assigned to a responsible person or organization for control of technical, schedule and cost objectives
3. Integrate program work scope, schedule, and cost objectives into a performance measurement baseline against which accomplishments may be measured
4. Use actual costs incurred and recorded in accomplishing the work performed
5. Objectively assess accomplishments at the work performance level
6. Analyze significant variances from the plan, forecast impacts, and prepare an estimate at completion based on the performance to date and work to be performed
7. Use EVMS information in company's management process

*Source: ANSI/EIA-748, Earned Value Management System (2007)

Fundamental Difference

Budget versus Actual	Earned Value Analysis
Planned Budget: \$500K	Earned Value: \$400K
Actual Cost: \$450K	Planned Budget: \$500K
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Variance : \$50K	Schedule Variance: (\$100K)
	Earned Value: \$400K
	Actual Cost: \$450K

	Cost Variance: (\$50K)



Major Terms	Formula	Definition
Cost Variance	$EV - AC$	Negative is over budget (bad). Positive is under budget (good)
Schedule Variance	$EV - PV$	Negative is late (bad). Positive is ahead of schedule (good)
Cost Performance Index	EV / AC	What we are getting for every 1\$ we spend. Above one is good.
Schedule Performance Index	EV / PV	How fast or slower are we progressing in comparison to the baseline schedule. Above one is good.
Estimate At Completion	$AC + ETC$	We are recalculating the remaining cost to complete (ETC) because we assume the original estimate was way off.
	BAC / CPI	Assuming the CPI will remain the same.
	$AC + (BAC - EV)$	Assuming the remaining work is not related or affected by previous tasks. For example, design is done now starting construction phase. (BAC-EV) is simply the value of work remaining.
	$AC + \frac{(BAC - EV)}{(CPI^c \times SPI^c)}$	Same as above but the value of the remaining work is adjusted by the CPI and SPI. CPI because we assume the performance per \$ is the same. SPI because we assume that the completion date is firm and must be met.
To Complete Performance Index (TCPI)	$\frac{(BAC - EV)}{(BAC - AC)}$	Divide the work remaining by the money remaining, this is the performance needed to stay within budget, above one is bad.
Estimate to Complete (ETC)	$EAC - AC$	Reestimate the remaining work less the work done.
Variance At Completion (VAC)	$BAC - EAC$	How much over or under budget we will be when we finish the project.

Basic Requirements to calculate EVA in Project

1. Change the "Default task Earned Value Method" in File > Options > Advanced tab from % Complete to Phy. % Complete
2. Clear the option that "Actual costs will be calculated by Project" in File > Options > Schedule tab.
3. Insert tasks, sequence it as per WBS
4. Insert resources and assign standard rate to each resource
5. Assign resources to tasks. Cost column will display the estimated cost for nonsummary and summary tasks
6. Baseline the plan through Project, Set Baseline ... Baseline and Entire Project
7. Set the status date to the date when the status is updated
8. Update the actual start date, actual finish date, % complete, actual cost
9. Update the Phy. % Complete with the % of work accomplished
10. Change the table to Earned Value, Earned Value Cost Indicators and Earned Value Schedule Indicators to view the Planned Value, Earned Value, Actual Cost, BAC, EAC, SV, CV, SPI, CPI, TCPI, VAC

Track Progress with Share Point and PowerApps

1. Save the project plan in Sharepoint Workspace. Tasks will be inserted in a task list in the new workspace
2. Open PowerApps in O365. Create a SharePoint app with the newly created workspace name and task list
3. Customize the user interface of the created app and save it.
4. Download PowerApps from Google Play Store or App Store. Login and download the new app.
5. App will display all the tasks in the Sharepoint task list which is a reflection of tasks in Project file.
6. As the task is updated, it gets updated in Sharepoint task list. Now just reopening/save the Project file will synchronize the progress