

PCM

**7th
Lectures**

• Topics Today:

1. Control Cost Process.

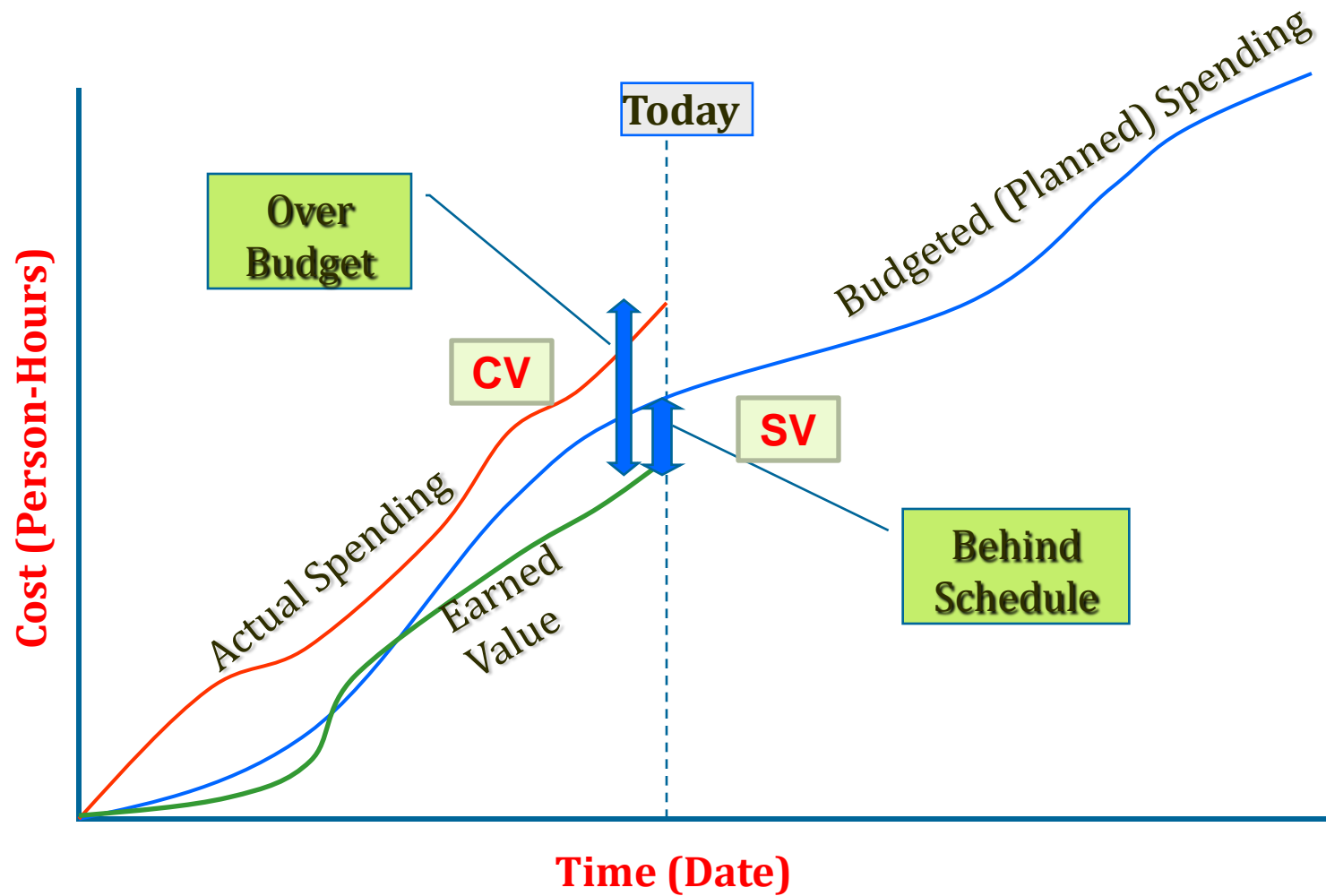
EVM Analysis ---SV, CV, SPI, CPI, TV.

Schedule and Cost Variance

- **$SV = EV - PV$**
- **Positive SV** = Project is ahead schedule in terms of cost.
- **Negative SV** = Project is behind schedule in terms of cost.

- **$CV = EV - AC$**
- **Positive CV** = Project is underbudget
- **Negative CV** = Project is over budget

EVM- Graphic Presentation of SV and CV



Schedule and Cost Variance

- $SPI = EV / PV$
- **If $SPI < 1$ It Indicates Less work was completed than planed.**
- $CPI = EV / AC$
- **If $CPI < 1$ It Indicates Indicates cost over run for work completed.**

Example SPI and CPI

- *One month project has budget of \$10,000. This is end of month, and \$8,000 of work has been completed. The cost spent till date is \$8,500.*
- **PV** = what is planned to be done = \$10,000.
- **AC** = what was paid for work done = \$8,500.
- **EV** = budget of work actually done.=\$8000

$CV = \$8,000 - 8,500 = -\500 . i.e., cost overrun,

$CPI = \$8,000 / 8,500 = 0.94$. i.e., cost overrun

$SV = \$8,000 - 10,000 = -\$2,000$. i.e. time overrun

$SPI = \$8,000 / 10,000 = 0.80$ i.e. time overrun

Table 7-7: Earned Value Calculations for One Activity After Week One

ACTIVITY	WEEK 1
Earned Value (EV)	7,500
Planned Value (PV)	10,000
Actual Cost (AC)	15,000
Cost Variance (CV)	-7,500
Schedule Variance (SV)	-2,500
Cost Performance Index (CPI)	50%
Schedule Performance Index (SPI)	75%

Project Management Question	EVM Performance Measures
<i>How are we doing time-wise?</i>	Schedule Analysis & Forecasting
- <i>Are we ahead or behind schedule?</i>	- Schedule Variance (SV)
- <i>How efficiently are we using time?</i>	- Schedule Performance Index (SPI)
<i>How are we doing cost-wise?</i>	Cost Analysis & Forecasting
- <i>Are we under or over our budget?</i>	- Cost Variance (CV)
- <i>How efficiently are we using our resources?</i>	- Cost Performance Index (CPI)

Performance Index Trends

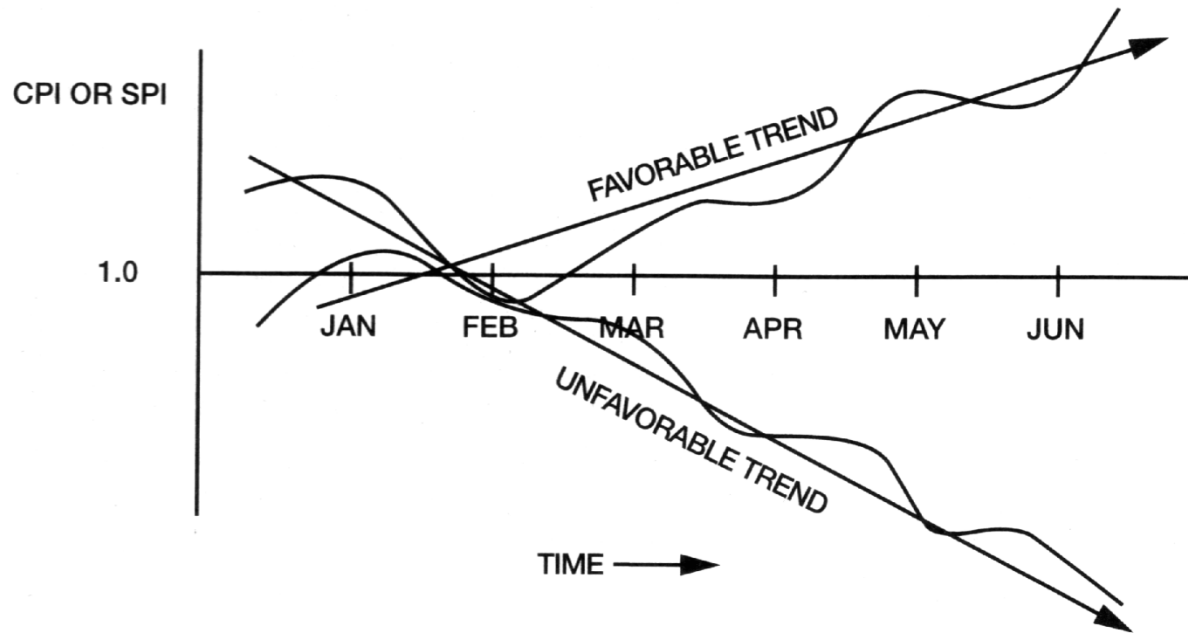


FIGURE 15-13. The performance index.

Practice Q1:

Mr. Johnson is a Project Director for a six ICU rooms renovation Project. Each of the rooms is identical with the same hardware components. Total cost for this Project is \$60,000 and is expected to take six months.

Today is end of 4th month (for PV Calculation) and he has finished renovation work of only three rooms (for EV Calculation) and has spent \$11,500 per room till date (for AC Calculation). Determine the cost as well as schedule performance of the above project today?

Practice Q2:

This is a \$54,600 project consisted of five deliverables (A to E) detailed below. Although the deliverables are planned sequentially but the project manager may start next also before completion of the previous deliverables.

Status Dates	Deliverables	Estimates \$	EV Today
End of W-1	Deliverable-A	10,500	100% of PV
End of W-2	Deliverable-B	9,200	90% of PV
End of W-3	Deliverable-C	13,500	80% of PV
End of W-4	Deliverable-D	11,300	60% of PV
End of W-5	Deliverable-E	10,100	0

At status date (end of 4th week) Actual spending is Rs 65,00. Prepare EVM analysis of above project based on followings;

Required:

a) SV, CV, SPI, CPI?

b) Show graphically indicate SV, CV and BAC ?