

Exercise - Cost Management

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You have a project to build a new fence. The fence will form a square. Each side is to take one day to build, and \$1,000 has been budgeted per side. The sides were planned to be completed one after the other; however, circumstances changed on the project, and work on the sides was able to proceed in parallel. Assume therefore that the sides have a finish-to-finish relationship instead of a finish-to-start relationship, so more than one side can be worked on at the same time. Today is the end of day 3.

Using the information in the project status chart, calculate the following to three decimal points.

1. PV =
2. EV =
3. AC =
4. BAC =
5. CV =
6. CPI =
7. SV =
8. SPI =
9. EAC =
10. ETC =
11. VAC =

Project Status Chart

Activity	Day 1	Day 2	Day 3	Day 4	Status End of Day 3
Side 1	S-----F				Complete, spent \$1,000
Side 2		S----F PF			Complete, spent \$900
Side 3		S----	PS PF		50% done, spent \$600
Side 4			S----	PS PF	75% done, spent \$600

Key S = Actual Start, F = Actual Finish, PS = Planned Start, and PF = Planned Finish

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Answer

	What Is:	Calculation	Answer	Interpretation of the Answer
1.	PV	\$1,000 plus \$1,000 plus \$1,000	\$3,000	We should have done \$3,000 worth of work.
2.	EV	Complete, complete, half done, and 75% done, or \$1,000 plus \$1,000 plus \$500 plus \$750	\$3,250	We have actually completed \$3,250 worth of work.
3.	AC	\$1,000 plus \$900 plus \$600 plus \$600	\$3,100	We have actually spent \$3,100.
4.	BAC	\$1,000 plus \$1,000 plus \$1,000 plus \$1,000	\$4,000	Our project budget is \$4,000.
5.	CV	\$3,250 minus \$3,100	\$150	We are under budget by \$150.
6.	CPI	\$3,250 divided by \$3,100	1.048	We are getting about \$1.05 out of every dollar we put into the project.
7.	SV	\$3,250 minus \$3,000	\$250	We are ahead of schedule.
8.	SPI	\$3,250 divided by \$3,000	1.083	We are progressing at about 108 percent of the rate planned.
9.	EAC	\$4,000 divided by \$1.048	\$3,817	We currently estimate that the total project will cost \$3,817.
10.	ETC	\$3,817 minus \$3,100	\$717	We need to spend an additional \$717 to finish the project.
11.	VAC	\$4,000 minus \$3,817	\$183	We currently expect to be \$183 under budget when the project is completed.

In this example, you are looking for the value of the work that has actually been done. The finish-to-finish relationship allowed the team to work on more than one side at the same time. In this case, work is being done on both sides 3 and 4 at the same time. Since the value of each side is \$1,000, we look at how much of each side is complete and apply that percent to the value. Here sides 1 and 2 are completed, so each receives a value of \$1,000. It doesn't matter what it actually cost—just the value. Side 3 is 50 percent done and receives a value of \$500 (50 percent of \$1,000). Side 4 is 75 percent done and receives a value of \$750 (75 percent of \$1,000). The earned value to date is \$3,250.