Earned Value Management (EVM)

Every project manager hears the same two questions: are we on time, and are we on budget? Looking only at the money spent can mislead us, because spending a lot does not mean doing a lot. Earned Value Management, or EVM, answers both questions by comparing three simple values. It began in large government projects in the United States in the 1960s, and today it is a standard project management tool.

1. Planned Value (PV)

Planned Value, or PV, is the budget for the work that was planned to be finished by a certain date. It answers the question: where should we be by now? To find it, we add up the budget of all the work scheduled until today. PV does not tell us what happened; it is only our target.

At work: Tariq manages a ten-week project to build a new company website, with a budget of 100,000. By the end of week five, half of the work was planned, so his PV is 50,000.

2. Earned Value (EV)

Earned Value, or EV, is the value of the work that is really finished, measured with the budget. We take the share of the work that is complete and multiply it by the total budget. This is the heart of the method, because it turns progress into money. Now we can compare what we planned, what we did and what we paid in the same unit.

Example: a painter who planned four rooms by Wednesday but finished three has earned the budget of three rooms, not four.

At work: after five weeks, Tariq's team has finished forty percent of the website. His EV is forty percent of 100,000, which is 40,000.

3. Actual Cost (AC)

Actual Cost, or AC, is the money that was really spent on the work done so far. It includes salaries, materials and services charged to the project. We take this figure from the accounts, not from the plan. On its own, AC says little, because a low cost can mean good control or simply little work.

At work: two of Tariq's developers were moved to an urgent project for a few weeks. So far, his project has cost 32,000.

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4. Schedule and Cost Variance

A variance is simply a difference. Schedule Variance, SV, equals EV minus PV, and shows if we are ahead of or behind the plan. Cost Variance, CV, equals EV minus AC, and shows if the work cost more or less than its value. A positive number is good news, and a negative number is a warning.

At work: Tariq's SV is 40,000 minus 50,000, which is minus 10,000, so the project is behind schedule. His CV is 40,000 minus 32,000, which is plus 8,000, so it is under budget.

5. SPI and CPI

Indexes turn the same values into ratios, which are easy to compare. The Schedule Performance Index, SPI, equals EV divided by PV. The Cost Performance Index, CPI, equals EV divided by AC. Above one is good, exactly one is on plan, and below one means behind schedule or over budget.

At work: Tariq's SPI is 40,000 divided by 50,000, which is zero point eight, so his team delivers only eighty percent of the planned progress. His CPI is 40,000 divided by 32,000, which is one point two five, so every unit spent earns one and a quarter in value.

6. Acting on the Results

The numbers are only useful if they lead to action. First, we look for the cause behind each number, instead of blaming people. Then we choose the right steps, such as adding people, changing the order of tasks or cutting costs. Finally, we measure again every week or month, so that small problems are caught early.

At work: Tariq sees that his problem is time, not money, so he asks to get his two developers back. He also warns his manager that, at this speed, ten weeks could become about twelve and a half.

Conclusion

In summary, EVM compares three values: Planned Value, Earned Value and Actual Cost. The two variances tell us how far we are from the plan, and the two indexes tell us how well we are working. The method only works with an honest measure of the work that is really finished. Used regularly, it shows problems early, while there is still time to fix them.

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