

# The Earned Value Concept

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Earned Value is not a new concept, yet it is a significant part of the federal acquisition reform initiatives being implemented throughout government. Once viewed by many as a mere financial reporting requirement, Earned Value has come into its own as the only

reliable tool for integrating cost, schedule and technical performance management on complex programs.

Wayne Abba, a senior program analyst in the Office of the Undersecretary of Defense for Acquisition and Technology, defines Earned Value as a management tool that relates resource planning to schedule and technical performance requirements. All work on a project is planned, budgeted and scheduled in time-phased "planned value" increments, constituting a baseline for performance measurement. As work is performed, it is "earned" as it was planned, in dollars or other quantifiable units such as hours of work. The earned value should match the planned value. Any difference between the two is called a "schedule" or "accomplishment" variance. Thus, Earned Value is an objective measurement of completed work compared to planned and actual values for the same work.

The Earned Value concept emerged in the 1960s but did not have the computer hardware and software support to make it work effectively. Today it is endorsed by the Department of Defense and the Project Management Institute, and it is among the "best practices" of Boeing, Lockheed, Motorola and Delco. The ANSI considers it an industry "standard."

Earned Value starts with the control account: plan, budget, schedule and corrective action. The

Budgeted Cost for Work Scheduled (BCWS) is compared to the Budgeted Cost for Work Performed (BCWP) and the Actual Cost of Work Performed (ACWP.) Any difference between BCWP and BCWS provides a schedule variance, and any difference between BCWP and ACWP provides a cost variance. From those two figures you can project the cost performance and estimate-at-completion.

Another way of picturing this is with questions. What's the plan? (Budget or Target Cost) What should be done by now? (BCWS) What is done so far? (BCWP) What did it cost to do it? (ACWP) What is the schedule variance? (BCWP minus BCWS) What is the cost variance? (BCWP minus ACWP) What is the Cost Performance Index (CPI)? (BCWP divided by ACWP) What is the estimate at completion? Estimates at cost of completion can be calculated or evaluated using the performance indices.

Abba says that although the "Earned Value Management Systems" (EVMS) replaced the previous cost/schedule control criteria at DOD in December 1996, Earned Value is not a "system." Rather, it is a comprehensive planning process that

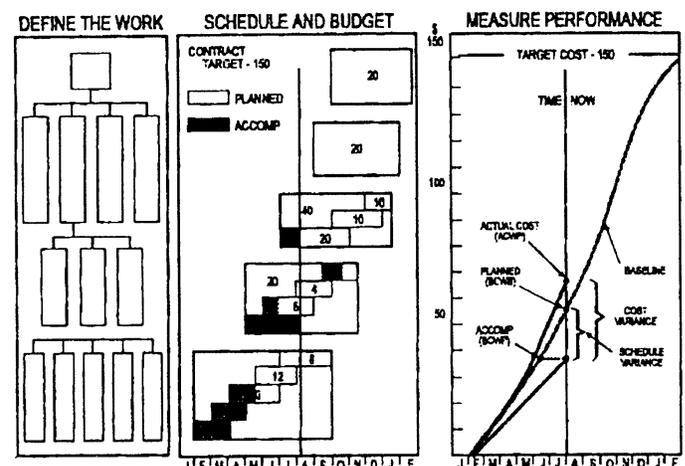


Figure 12. The Earned Value Concept Summary

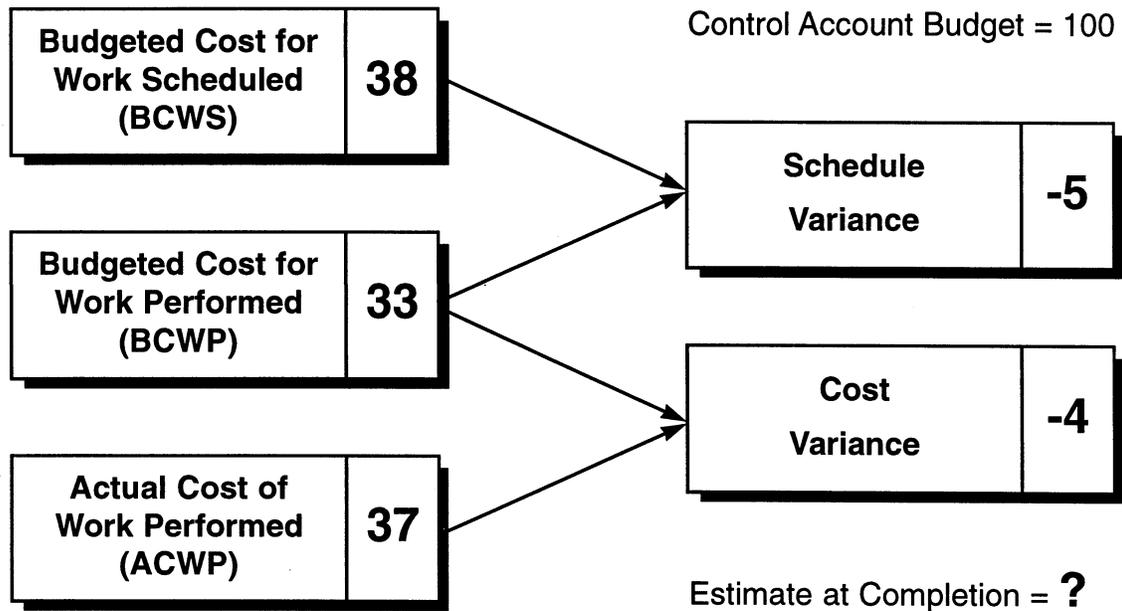


Figure 13. What did it cost to do it?  
Actual Cost of Work Performed

covers the entire SOW, schedules activities and allocates resources. It is not a reporting system, contract administration, cost analysis or accounting system but rather blends with the contractor's own management system. Soon after contract award, program managers are now expected to perform an Integrated Baseline Review to assure that the contract performance measurement baselines capture the entire technical scope of work consistent with schedule requirements, and that adequate resources have been assigned. Such a review, supported by Earned Value experts, should improve the cost, schedule and technical performance management and reduce the number of reviews.

In 1995, the United States signed a Memorandum of Understanding with Canada and Australia to advo-

cate "improved project management in both government and industry, based on effective risk assessment and integrated management of cost, schedule and technical performance objective, using earned value as the integrating tool." Since then, the United Kingdom, Sweden and New Zealand have expressed similar interest.

For more information on Earned Value, point your Web browser to < [www.acq.osd.mil/pm](http://www.acq.osd.mil/pm) >.

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