

## **What Every Government IT Professional Should Know About Earned Value Management**

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Many U.S. government IT professionals are unfamiliar with or misunderstand the fundamentals of earned value management. However, this must change soon, because new policies require that all agencies use EVM for every major IT initiative.

## ANALYSIS

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### Overview

The U.S. federal government will spend about \$65 billion on information technology programs in 2006. Many will deliver their intended value, but with 248 projects on the government's "management watch list" and several high-profile efforts such as the FBI's Virtual Case File system falling well short of expectations or terminated altogether, the Office of Management and Budget (OMB) is taking action to ensure that agencies refocus on project and program fundamentals (see "Lack of Goals and Specifications Dooms FBI's Virtual Case File Management System"). This renewed emphasis is manifest in capital planning and investment control, performance-based service acquisition, and annual performance plans. In addition, the OMB is now requiring that earned value management (EVM) be used to demonstrate government and contractor costs for all major IT projects, as well as to show how close projects are to meeting approved cost, schedule and performance goals. EVM is a structured method for integrating technical, schedule and cost performance that has long proven effective in managing performance of complex government projects. However, while EVM has been used in government programs for more than 30 years, it hasn't been used extensively for IT projects.

### Key Findings

- Despite its proven track record in large government capital projects (such as construction, weapon systems and aerospace systems development), EVM is not well known or understood among government IT professionals.
- EVM is not a science, nor is it necessarily the most-appropriate tool for every IT project. Managers must learn to use it as a project management tool, recognizing that it requires understanding, experience and common-sense application.
- When applied effectively, earned value analysis (EVA) yields earlier and better visibility into program performance than nonintegrated methods of planning and control. EVA can reliably forecast project performance as early as 15 percent into a project's total budgeted work.
- Although tracking earned value occurs during project execution, it cannot be accomplished if appropriate project planning and budget allocation have not occurred upfront.

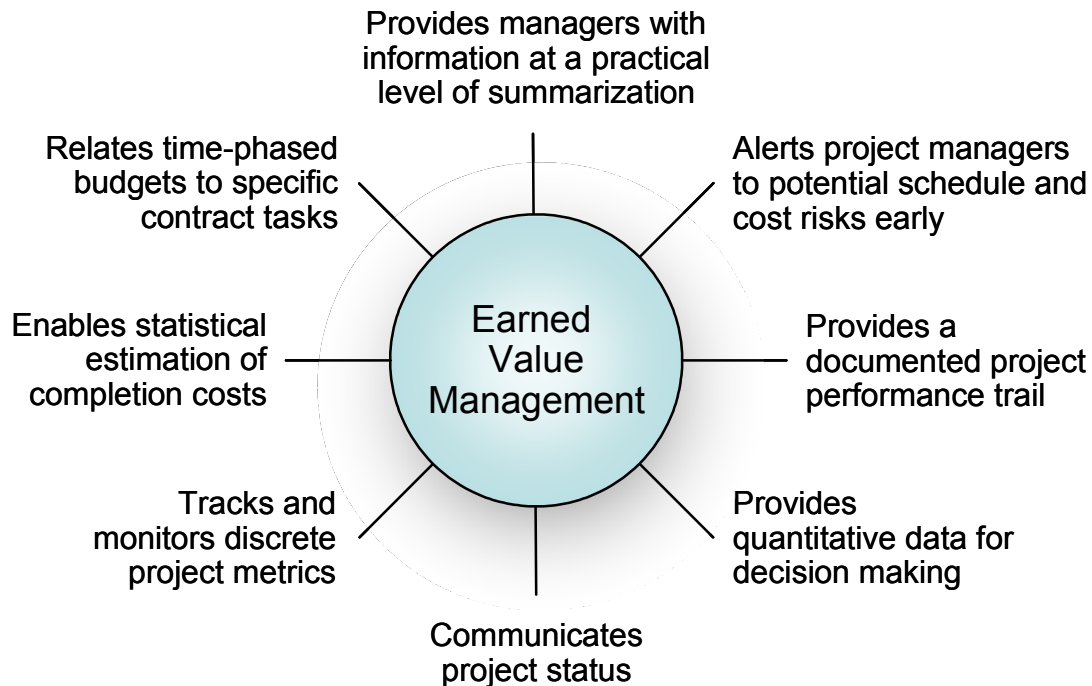
Because of the steep learning curve associated with institutionalizing EVM within an agency's IT project management discipline, its effectiveness in government will likely be uneven during the first five to seven years of implementation. However, once fully implemented, EVM can help agencies develop stronger project controls, enable more transparency of project execution, and raise management attention and action — thereby improving IT program success rates by as much as 30 percent in some agencies.

### IT Professionals Must Know the Basics When Implementing EVM

EVM enables the service provider (often a government contractor) and service recipient to have clear visibility into technical, cost and schedule planning, performance and progress on their contracts. EVM requires that each element of work be budgeted. As each element is completed with clearly defined deliverables, its budgeted costs are earned. By placing a cost value on status, a project's performance can be evaluated and communicated. Proper use of EVM can provide early warning (forecasting) of impending problems, leaving ample time for corrective

action. Applying EV principles can provide for better control of program/project performance, along with greater accountability and a reduction in risk (see Figure 1).

**Figure 1. Key Features and Attributes of Earned Value Management**



Source: Gartner (January 2006)

EVM makes no pretense at determining a course of action; instead, it simply isolates the cause of project problems or confirms that tasks are progressing as planned. If a project is really in trouble, deciding whether to delay, stop or even cancel a project could be the real issue. Yet, such decisions are all too often off the table in the highly decentralized management and political structures of large government organizations.

Although following fundamental practices are core to its strength, EVM is not a "one size fits all" approach. Project type, size, significance and level of risk should drive the rigor and granularity of earned value analyses. Project managers must ensure that appropriate cost estimation, project planning and budget allocation are done at the outset for EV calculations and tracking to be meaningful. Otherwise, problems will be simply attributed to poor project planning or unreliable performance baselines used at contract initiation, rather than variances experienced in project execution. In addition, EVM should be used in concert with other project management tools, such as an effective risk management approach.

Managers must also ensure that quality issues are addressed. If adequately defined as deliverables, the majority of tasks put into EVM may not be that difficult to measure, but they may not be great indicators of overall program performance improvement results. Project managers should pay attention to this, given the current push in government to demonstrate project outcomes and results in terms of business, mission or citizen impact.

The OMB recently proposed changes to the Federal Acquisition Regulations (FAR) that would standardize use of EVM systems governmentwide. This change would again revise EVM provisions that OMB introduced in 2004, requiring agencies to include EVM in their business

cases and take proactive measures to identify high-risk projects to show how close investments are to meeting approved cost, schedule and performance goals.

Since OMB published the proposed changes in the Federal Register (April 2005), there has been a healthy dialogue among government agencies and industry service providers. Although some of the proposed FAR provisions will likely change before the regulation is finalized, EVM and project management improvement will clearly become an integral part of improvements to IT procurement practices governmentwide. Accordingly, CIOs, chief acquisition officers, program/project managers and other stakeholders involved in IT procurement should learn how EVM should be applied in end-to-end project planning and how and when it can be most effectively used in project execution and oversight.

### **Where to Begin?**

Collectively, this research provides government IT professionals and their service providers with an understanding of the facts, issues, opportunities and challenges surrounding the effective use of earned value in IT project management. The series offers sound advice and action-oriented recommendations for government IT professionals working to make EVM integral to their agency's established project management discipline. In this Spotlight, we:

- Explain the earned value analysis technique, examine its function as a project management and reporting tool, and describe how it complements larger business and public value elements associated with project outcomes (see "Earned Value Analysis: A Tutorial").
- Examine how the government's proposed changes to Federal Acquisition Regulations will standardize earned value management for every major government IT procurement, as well as how these changes will present issues, challenges and opportunities for agencies and external service providers (see "U.S. Government Agencies and Service Providers Face Challenges in Adopting Earned Value Management").
- Analyze how the U.S. government is striving to require the use of integrated baseline reviews and earned value management systems on all major acquisitions, including IT, and discuss how an EVM system can help ensure more-positive project outcomes, especially when executive management understands and uses it (see "Get More 'Value' From Earned Value Management").
- Study how the National Oceanic and Atmospheric Administration (NOAA) applied EVM to a high-visibility, but relatively small, low-cost and firm-fixed-price contract project — Grants Online — and how the disciplined EVM approach brought the project to successful completion on time, within budget and with the expected functional requirements (see "Applying Earned Value Management to Smaller IT Projects").
- Discuss what it will take to implement EVM effectively in government and how the project management technique helps evaluate and control project risk — something that all government entities (federal, state, county, municipal and tribal) can benefit from (listen to the replay of the November 8, 2005, Gartner teleconference, "Earned Value Management: An Overview for Federal IT Managers").

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