

What is Wrong with *Earned Value Management?*

What we found out by asking industry experts

Deltek surveyed industry experts at two successive conferences:
What are the biggest perceived issues with EVM? And what is the solution for each issue?

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INTRODUCTION

As a practitioner and EVM software supplier, I hear this question in many forms:

- If EVM is so good, why doesn't everyone use it?
- Why do different people in my company have different views of EVM?
- Isn't a good scheduling system enough?

These questions and their answers became the quest for Deltek marketing. We decided to find the answers by asking the EVM community – the very people who use EVM and live with these issues.

In the following pages, you will find a history of EVM, the questions raised in regards to using EVM and the proposed solutions.

THE HISTORY OF EVM

The US Department of Defense (DoD) started using the basics of EVM in the late 1960s. It was derived from a project management process called PERT-Cost that integrated cost and schedule and provided status information. The problem was that it was utilized differently by all who used it.

At that point, DoD came up with criteria for how to do cost and schedule control systems. As this was

documented and refined, it became widely accepted in the commercial world. In its current state, it is an ANSI standard (748) – referred to as the Earned Value Management Systems, or EVMS.

EVMS has 32 guidelines that can be summarized into five major areas:

1. Organization (5 guidelines)
2. Planning, Scheduling and Budgeting (10 guidelines)
3. Accounting Considerations (6 guidelines)
4. Analysis and Management Reports (6 guidelines)
5. Revisions and Data Maintenance (5 guidelines)

The Project Management Institute (PMI) recently updated their Project Management Body of Knowledge (PMBOK) to include more of the EVM basics but did not include all 32 guidelines. It is often debated whether all 32 guidelines are even needed to do EVM.

THE ISSUES

The largest congregation of EVM experts and users in the world are at the EVM World Conference held each Spring and the Integrated Project Management (IPM) Conference held each Fall. Deltek has been a contributor to these conferences for years and in 2008, we asked conference attendees for their feedback on EVM.

At the May 2008 EVM World Conference, Deltek hosted a reception for 70 people, where we asked for feedback on what the biggest issues were with Earned Value Management processes and systems. The attendees came forth with a large list of issues. We compiled this data into consumable context and the final results suggested that there were five main areas of concern in regards to EVM:

1. Lack of Management Support
2. Inability to Find Qualified Resources
3. Difficulty Integrating Cost, Resource and Schedule Data
4. Inconsistent Application of EVM Across the Enterprise
5. It Takes Too Long to Manually Produce Reports We Can Trust

This information was helpful, but we needed to find solutions. So, we went back to the experts. Our next reception was at the IPM Conference held in October of 2008, and again 70 conference attendees participated in our survey.

Our focus changed during this discussion to asking how to solve the five problems that came out of our first meeting. The results were an astounding 190 suggestions on how to improve EVM.

THE SOLUTIONS

In the subsequent year since the solution gathering session, Deltek has presented a series of seminars based on this data and asked customers to tell their story of how they solved the particular program. The instructor also asked for feedback from the audience. It is with this knowledge that this paper is written.

What is presented here is the evaluation of the data. It is presumed that you will find it more useful than the raw data, which is included in the appendix of this paper.

Issue #1: Lack of Management Support

This is an interesting issue that each person described differently. Where one person said this meant that the project manager did not understand EVM, the next person said it was manifested in the lack of use of the data in executive reviews. In both cases the respondent viewed the 'manager' as looking at EVM as a contractual (reporting or cost) requirement and not as a management philosophy.

With 79 individual comments, it was the one area that most people had something to say about. To make it a little easier to consume, those comments were grouped into eight common themes:

1. Demonstrate Success & ROI Using EVM

This was often a play on the movie line "show me the money." The primary message here is to demonstrate the ROI (Return on Investment) to the executives to prove the benefit. This normally requires that the CFO is brought into the process to make sure that the results are real and portrayed appropriately.

The way to do this is to pick a pilot project to demonstrate the EVM process and then measure the metrics setup by the CFO. Also, find a control project that is not using EVM and measuring the same metrics for comparison.

Another approach is to apply EVM to an existing project that is having issues. This is difficult. If you already know that there are problems the project is probably near 50% complete and there is not a lot of time to apply EVM and make a difference. A better approach would be to find a project that is new, and management is concerned that the estimate or risks are enough to make success questionable. If you can bring that project in better than the forecasts, you will make your point.

2. Create Best Practices

This approach is based on making EVM the standard practice for project management. It then becomes part of the culture and is accepted by all. This supports consistency in application. This concept is best supported by creating an EV Council.

The Earned Value (EV) Council are the people who focus on using EVM as a management tool and decide on what practices are the 'best' practices. They are also the ones who are responsible for maintaining, changing and updating those best practices. As part of these best practices they should also evaluate each organization in the company for compliance or maturity level and acquire the tools that will support that level.

It has also been suggested that as part of the best practices that there be an established minimum level of EVM understanding that is required to be a project manager.

3. Executive Training

This follows on the previous recommendations by stating that the executives of the company need to be trained in basic EV principles and in the company best practices. This training is kept to the level required of a company executive. It is not the full training that a PM or CAM would receive.

Another supplement to the training is a peer visit from another company who has had success with EVM, or simply have the executive attend an IPM Conference to see what is happening and who is performing.

4. Executive Mandates

Suggestions in this area are for everything from hiring a CEO who believes in EVM to having the executives sign a commitment document. Mostly, the suggestions were to have the CEO declare a mandate for the use of EVM. One obvious way to accomplish this is to have a management sponsored corporate organization responsible for EV standards and surveillance.

5. Compensation Tied to Performance

The responses in this area tried to state that behavior and EV performance should be tied to compensation. Everyone should have a vested interest in the use of EVM as it is the basis for company project success.

Specific areas of improvement that were suggested include:

- Putting EVM roles and responsibilities in the IPT lead and CAM performance appraisals
- Tying job success and raises to successful utilization of EV data
- Not tying EV Variances to raises and performance (this leads to making the data say what you want and defeats the purpose)

6. Change the Corporate Culture

Make EVM as simple as possible, which means more emphasis on the process and usefulness and less on the ANSI standards. Then create a company and CAM charter that states this is a program management process and not a financial process.

Additionally, tie EVMS with integrated PM and engineering discipline to make it more valuable to CAMs.

Part of the culture should be to respect the cost/schedule personnel by making the labor grade and associated pay greater than the data entry clerk they are sometimes regarded as. Use these company experts (SMEs) for program startup and in monthly program reviews.

Set up a corporate business process that includes a CAM certification, instituting engineering acceptance and the use of a common toolset. This means to invest in adequate tools and training.

7. Direct & Indirect Education

As with most processes, education always makes the acceptance go more easily, so it is no surprise that there were quite a few suggestions associated with education. This is broken down into executive training and PM/ CAM training.

For the executives, training consists of leadership benefits of EVM; demonstrate how EVM success can increase future business, and corporate metrics.

For the practitioners, the suggestions are to train using case studies of similar projects in the company or from another company, PM EVMS certification programs, EVM champion demonstration of ROI and presentation of the concept that EVM is a process and not a reporting requirement.

8. Risk Aversion

This area included comments that suggested some organizations are only going to be convinced after being publicly damaged so that they will utilize EVMS in self-defense. The types of damages suggested ranged from DCMA Corrective Action Report (CAR) to a story in the Washington Post about lack of support for the government requirement.

Issue #2: Inability to Find Qualified Resources

Most respondents had the same response to this issue. The problem seems to reside in the fact that those who have the knowledge have moved on to a better paying position in a different discipline or onto a better career path. Although most had the same opinion of what this meant, there was a wide variety of suggestions on how to solve it.

There were 62 individual comments in this area. To make it a little easier to consume, those comments were grouped into four common themes:

- **Training and Mentoring**

This area started with developing clear qualifications for the resources needed, finding the internal resources with some or all of those qualifications and mentoring them to the level you need. This means cross training, guiding and continually retraining.

- **Networking**

These suggestions were somewhat predictable. They said to ask around the company, social networks (LinkedIn, Facebook, etc.), professional associations and conferences.

- **Recruiting**

Here we also saw the common suggestions of finding a recruiter to get resources and post on job boards (Monster, Hot Jobs, etc.). The more inventive suggestions were around finding local universities with PM and EVM curriculum and recruiting candidates from the graduating class. The most aggressive suggestion was to poach employees from other companies.

- **Other**

These included hiring from consulting companies, software vendors and other organizations in their own company, with a signing bonus to change jobs. The one thing we heard implicitly was the concept of a career path – many experienced EVM people left for other positions because of the lack of career path options.

Issue #3: Difficulty Integrating Cost, Resource and Schedule Data

To some this meant the software didn't handle data correctly, to others it was the lack of communication between the cost and scheduling managers. There were other interpretations, but all agreed that it was an issue. With the requirements from the government customer emphasizing schedules, it was an issue on many minds.

For those that think this is a process issue, many think it starts with the proposal or capture team. Many contend that the proposed WBS used is not the one that will be used to manage the job. Therefore the suggestions in this area are to require the cost estimating/pricing organization to use the management WBS and require the schedule hierarchy to be the same. One way to enforce this is to include the project engagement team in the proposal preparation process.

Aiming more at the root cause, were suggestions that there should be cross training of the cost and schedule management teams. This includes a definition of what it means to integrate cost and schedule. Another part of this suggestion is to use the same database for both cost and schedule logic.

Another root cause suggestion was to make sure that the accounting process used for project control is not confused with revenue recognition.

Issue #4: Inconsistent Application of EVM Across the Enterprise

On one hand, we know that everyone thinks that their project is different and should be handled differently. On the other hand, they also appreciate the advantages of common practices and systems. The downfall is that few are willing to admit that they can use a standard approach.

This issue included 33 separate suggestions. Most of the suggestions had direct ties to other areas of this study. For instance, there were several suggestions that related to management support. The culmination of all was to say that there should be one set of reports used by executives to review all projects. This would require that all projects use similar if not the same processes.

Another approach that ties to earlier comments was the need for a single process that all practitioners are trained to use. Along with this is the idea that one common tool set supports the one process. This commonality should be enforced and supported by the EV Council or Project Management Office (PMO).

Also included in this area, were suggestions that the communications from the government could be improved. There are different guidelines from different federal groups, and this leads the contractor to build a responsive management approach that may violate the company standard.

Issue #5: It Takes Too Long to Manually Produce Reports We Can Trust

This is another issue that everyone seems to understand, but no one wants to be the first to implement. There were two separate problems here:

- **First, is the constant demand for another report.**

This is partly due to Issue #1 (Lack of Management Support) and Issue #4 (Inconsistent Application of EVM Across the Enterprise). So it becomes frustrating that they are always getting a request for different reports.

- **Second, is when there is not a common database.**

This means the reports are created in Excel, a report writer or some other product. Then when it is prepared, the data does not match or correlate to what was in the last report.

SUMMARY

The information provided in this white paper represents the point of view of those who practice earned value management. The ideas presented may or may not work in your environment. However, the goal of this white paper was to provide information on the major issues with EVM and to show that the issues are correctable, and many times have various solutions that you can employ based on the unique requirements of your organization.

FOR MORE INFORMATION

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