

High Impact Projects

A Newsletter About Solutions and Creating Exceptional Value.

Harvard Business Review Describes How Earned Value Management Prevents Late Projects and Cost Overruns

We Used Earned Value to Manage Three Small Information Technology Projects with Outstanding Results

Three Small Projects, On-Time, On-Budget, As-Promised!

Earned Value Accurately Predicts and Prevents Cost Overruns and Delays When Project is Only 20% Complete!

Are You In Default of Sarbanes Oxley 302 (a1), (a2), (a3), (a4b), (a4c), (a4d), (a5a) If You Are Not Using Earned Value to Account for Large Projects?

Expect Some Resistance and Evasion! Earned Value Holds People Accountable Who Have Often Avoided Accountability In The Past!

By Tom Ingram, PMP

How many Information Technology projects come in On-Time, On-Budget and As-Promised?

Is Earned Value one more buzz-word or something important? In 1993, I first heard Quentin Fleming describe the Earned Value concept. It changed my management style dramatically and has consistently produced outstanding results for my clients.

I call it “Earned Value Project Accounting and Management.” Simply put, Earned Value is the Super Bowl champion method of managing, controlling and accounting for complex technical projects. Every other method is high school – level football (at best.)

These are strong words – but the evidence exists to back it up. The attached article, published in the Harvard Business Review in September of 2003 describes how Earned Value has made its way from the Department of Defense into the mainstream of business.

I regularly use Earned Value with my client projects to great benefit, as the following three cases illustrate:

Case #1: A Small Information Technology Project for Texas Instruments Comes In On-Time, On-Budget, As-Promised: The project actually got way behind in

the initial phases. Because we were using Earned Value to manage and account for the project, **we saw the trouble in time to prevent an overrun.** The project made the cover story of PM Net, the monthly magazine of the Project Management Institute. You can view the full article at <http://www.tomingraminc.com/tiarearnedvaluearticle.pdf> See the text box for my favorite quote from the project.

"The [Earned Value system] required us, as the internal project team, to complete our milestones on schedule. **In the past, other distractions and priorities have come up during projects which delayed the completion of milestones.** Having a tightly defined [schedule, based on Earned Value,] prevented our normal 'death march' at the end of the project"

Chris Fowler, Technical Team Member, Texas Instrument's Accounts Receivable Project (PM Network Magazine, December 1995)

Case #11 - A Very Small Information Technology Project for Engineered Air Balance Comes In On-Time, On-Budget, As-Promised: We defined and delivered this project based on Earned Value accounting and produced a delighted customer, as the text box shows. What is exceptional about this project is that a streamlined version of Earned Value was used effectively with a small project.

"... our guys tell me that the document production system you helped us with has **reduced the labor required by 30%!**"

"...we've been burned by consultants before... we appreciate this project coming in as promised and within our budget..."

Alan Little, Technical Sales Manager, Engineered Air Balance, Dallas Office

This project cost less than \$20,000 in total, but we were able to keep the administrative and overhead costs of the Earned Value method so minimal that the overall outcome was excellent. Note in the quote that the client had been burned by other consultants not using a disciplined method

such as Earned Value. Full details on this project can be found at <http://www.tomingraminc.com/30percentsavingsnwsltr.pdf>.

"Earned Value Project Accounting allowed us to prevent a 50% overrun on this project. Northern Telecom experienced a round of layoffs during our project, and their people were distracted with many other things.

Earned Value accounting showed that, unless we stopped the project, an overrun of about \$10,000 would occur.

We stopped work and waited until Northern Telecom's people could complete their responsibilities.

As a result, we completed the project within Northern Telecom's budget. They were delighted with the result and we (as the vendor,) still made a good profit on the project.

In the past, we would usually eat the overrun because we are a customer-oriented firm. Of course, you can only do that so many times before you are out of business. Earned Value helped us produce a happy client and make a reasonable profit."

Tom Ingram, Director of Delivery, Decision Consultants, Inc., Dallas Office

Case #11 - A \$20,000 Information Technology Project for Northern Telecom Comes In On-Budget, As-Promised - Despite Large Layoffs and Financial Difficulties: I ran the consulting organization that sold this project to Northern Telecom, and decided to use the project to teach Earned Value concepts to one of my most promising managers. Not only did we deliver as promised, but our people and the Northern Telecom people functioned as a team under extreme difficulty.

As you may recall, in 2001 the Telecom industry took a nose dive, resulting in numerous layoffs - which happened during our project. The

text box describes how we recovered from the difficulty.

Expect Some Resistance and Evasion! Earned Value Holds People Accountable Who Have Often Avoided Accountability In The Past! *The Measurable News*, published in Spring, 2004 by the Project Management Institute, posed the question: “If Earned Value Management is so good, why isn’t it used on all Projects?” Page 7 reports that one of the three main reasons is “**because sometimes management...doesn’t really want to know the full cost!**”

Information Technology people have never been consistently held accountable for performing as promised. This includes front line people, but most especially middle management. I, and others I know, have lost jobs and promotions because we insisted on this system of accountability. Do not be surprised when your technology people evade this subject.

Is Earned Value Obscure, Out-of-the-Mainstream and Only Applicable to Large Department of Defense Projects? I did an internet search today on Earned Value. It yielded 194 citations in 11 seconds. Consider also that Harvard

Business Review (see article below) and other mainstream publications are writing about the topic. The type of project results from Earned Value Management cited in this paper is becoming commonplace. If you look closely at the Sarbanes Oxley language cited in the text box, you will see that the language speaks directly to the issues that Earned Value effectively manages. Unsurprisingly, it is my view that we can no longer afford to ignore Earned Value.

Summary: How many Information Technology projects come in On-Time, On-Budget and As-Promised? With Earned Value, as well as several other disciplines and techniques, we are consistently delivering projects as promised for clients. Since 1983, the project teams I have led have delivered over \$17 million in project contracts substantially on time, on budget and as promised. These projects have generated some **\$86 million in measured benefits for clients – and Earned Value played a major part.** Earned Value Project Accounting and Management is the Super Bowl Champion of project management methods. Everything else is high school football.

Are You In Default of Sarbanes Oxley 302 (a1), (a2), (a3), (a4b), (a4c), (a4d), (a5a) If You Are Not Using Earned Value to Account for Large Projects?

How many Information Technology projects come in On-Time, On-Budget and As-Promised? How much money and time is lost to bad IT projects? Read the excerpts from Sarbanes Oxley Section 302 below and decide whether you need to use Earned Value accounting and management to report on your projects to the regulators.

“The principal executive officer... and the principal financial officer ... certify in each annual or quarterly report filed ... that-“

“based on the officer’s knowledge, the report does not contain any untrue statement of a material fact or **omit to state a material fact...**”

“...fairly present in all material respects the financial condition and **results of operations...**”

“have designed such **internal controls to ensure that material information ... is made known to such officers...**”

“have **evaluated the effectiveness of the issuer’s internal controls** as of a date within 90 days prior to the report;”

“have presented in the report their **conclusions about the effectiveness of their internal controls** based on their evaluation...”

“...have **disclosed to the issuer’s auditors...**”

“**all significant deficiencies in the design or operation of internal controls...** “

“...have **identified for the issuer’s auditors any material weaknesses** in internal controls;”

Need further information?

Call us if you have questions or would like more information. This case is written as a teaching tool and is not intended to fully describe exact details or dialog.

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TOOL

What's Your Project's *Real* Price Tag?

Would the capital-project forecasts you endorse withstand public scrutiny? Here's how to be sure.

by Quentin W. Fleming and Joel M. Koppelman

There are many ways executives can cook the books, some legal, some not. The illegal ways are becoming less attractive, thanks to recent attention from Congress, the SEC, and other regulatory bodies. But there is a way some executives put a spin on company performance that is no less dangerous for being legal: They endorse, even encourage, optimistic forecasts on major long-term capital projects. We're talking about big projects like building new factories, implementing IT outsourcing, or decommissioning nuclear reactors – projects that can depress the bottom line for years if they run late or seriously over budget.

The problem is that most corporate financial executives track the cost of a project using only two dimensions: planned costs and actual costs. According to this accounting method, if managers spend all the money allotted to a project, they are right on target. If they spend less than allotted, they have a cost underrun. If they spend more, it's an overrun. But this method ignores a key third dimension – the value of the work performed.

Consider an example: On a five-year aircraft-development project costing \$1 billion, the budget you've projected for the first two and a half years is \$500 million, a number that reflects the expected value, in labor and materials, of

the project at the halfway mark. Let's say that when you reach this point, you have spent only \$450 million. Some project managers would call this "coming in under budget." But what if you're behind schedule, so that the value of the work completed is only \$400 million? This isn't coming in under budget at all. We think you should call it what it is: a \$50 million overrun.

So how can you measure the true cost performance of long-term capital projects? We advise companies on the use of a project-tracking

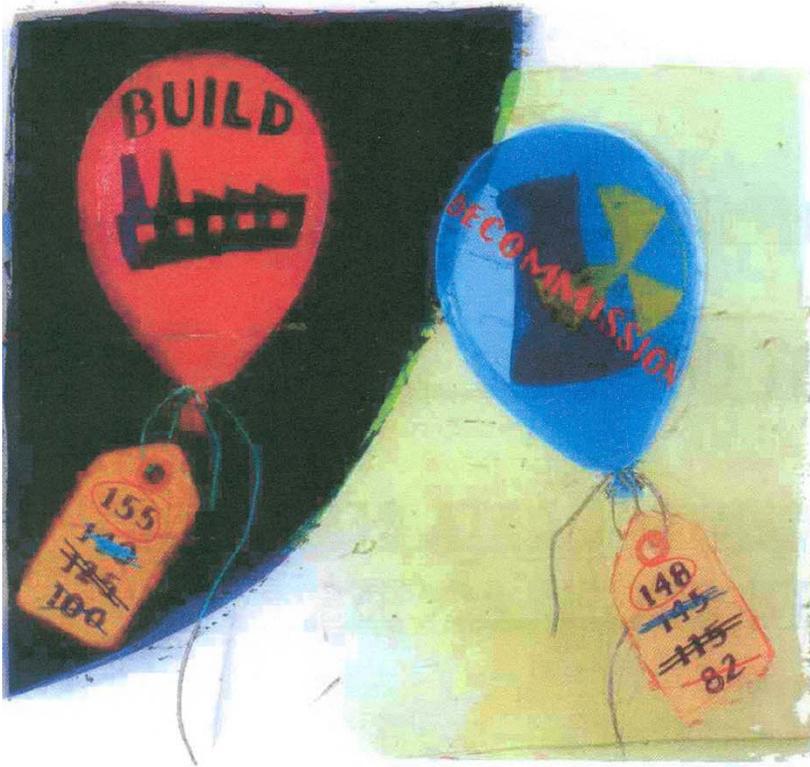
method called earned-value management (EVM). Industrial engineers in American factories first applied EVM principles more than a century ago. Today, while EVM has found a few champions in the private sector, government contractors are still the major practitioners. Since 1977, the Department of Defense (DOD) has used the technique to track the performance of more than 800 projects. A recent study by David Christensen and David Rees at Southern Utah University of 52 DOD contracts validates EVM's precision in tracking cost performance as projects proceed. Perhaps more important, the work also confirms that EVM can be used to accurately predict the final cost of projects – years before completion.

Nuts, Bolts, and Dollars

The most important tracking metric in EVM is the cost performance index, or CPI. The CPI shows the relationship between the value of work accomplished (the "earned value"), as established by a meticulously prepared budget, and the actual costs incurred to accomplish that work. So, for example, if a project is budgeted to have a final value of \$1 billion, but the CPI is running at 0.8 when the project is, say, one-fifth complete, the actual cost at completion can be expected to be around \$1.25 billion (\$1 billion/0.8). You're earning only 80 cents of value for every dollar you're spending. Management can take advantage of this early warning by reducing costs while there's still time.

The CPI is remarkably stable over the course of most projects. That's what makes it such a good predictive tool. The DOD study shows that the CPI at the 20% completion point rarely varies by more than 10% from the CPI at the end of the project. To continue with the aircraft-development example, the potential variance in the CPI means your final cost will likely fall between roughly \$1.1 billion and \$1.4 billion. In any case, by the end of the first year, you've

Earned-value management can accurately predict a major project's final cost – years before completion.



identified a likely cost overrun for the completed project. In fact, the DOD experience shows that the CPI typically gets worse over a project's course. Final costs calculated early in a project are usually underestimates.

A Matter of Scale

If EVM is so powerful, why doesn't every company use it? The fact is, when it's used in its full-fledged form for major acquisitions, it can be a demanding exercise, particularly as practiced by government agencies. The DOD requires the companies it contracts with to meet dozens of complex EVM criteria covering everything from detailed planning to progress measurement to the valuation of incomplete work. For monitoring multibillion-dollar reimbursable projects, like the development of a new fighter aircraft, the complex accounting is worth the considerable investment.

But we believe there's an untapped value for EVM in private industry. There, a simplified version of EVM can help control the growth of project costs. And with the increasing scrutiny of companies' financial statements,

EVM can help ensure that the balance sheets signed by company executives are accurate.

Private-sector companies such as Edison International and Computer Sciences Corporation have applied a simplified EVM approach to IT projects with great success. At Bo-

eing, Michael Sears, now CFO, embraced EVM practices as a program manager on the development of the company's F/A-18E/F fighter aircraft in the 1990s. Sears championed the adoption of weekly EVM measurement throughout the company, even migrating it to the commercial side of the business, where it was tailored for use in developing the 717 passenger jet. Sears later summarized the practical case for EVM: "We flew the F/A-18E/F on cost, a month early, and under weight...No adjustments. No asterisks. No footnotes. No kidding."

Using EVM to cut the "kidding" from project cost accounting isn't just good management; with companies' financial statements scrutinized as never before, it's a smart move for those who must ultimately stand behind the numbers.

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