

On the History of Earned Value Management ¹

LETTER TO THE EDITOR

Date: 15 September 2022

Ref: [Giammalvo, P. D. \(2022\). The Origins and History of Earned Value Management – “A Contractor’s Perspective”; featured paper, PM World Journal, Vol. XI, Issue IX, September.](#)

Dear David,

Having read *The Origins and History of Earned Value Management: “A Contractor’s Perspective”*, by Dr. Paul D. Giammalvo, I find it both confusing and disappointing that Paul seems incapable of appreciating the difference between financial management, cost engineering, and earned value management. Notwithstanding this fundamental issue, as a starting point, I fully agree with Paul’s views on the poor delivery outcomes from the current generally applied methods of managing projects and the lack of improvement over time. I also agree Earned Value Management has very limited use in the contracting industries referenced by Paul, and is therefore not likely to be a contributor to these well-established failure rates.

Where Paul seems to be confused, or simply ill-informed, is in respect to the distinct differences between financial management, cost engineering, and earned value management. These terms are not, and never have been, synonymous. For most project management professionals, the terms have the following meanings:

Financial management: the practice of handling a company's finances in a way that allows it to be successful. This generally includes various accounting functions, supported by contract administration and purchasing. Managing the organizations cashflows by claiming payments correctly, getting paid, and in turn properly paying workers, suppliers, and contractors is critically important to any businesses’ survival and has been for centuries.

Cost engineering: evolved in the early part of the 20th century to provide solutions to a number of limitations apparent in traditional financial management and accounting. The Association for the Advancement of Cost Engineering International (AACEi) defines cost engineering as *the application of scientific principles and techniques to problems of estimation; cost control; business planning and management science; profitability analysis; project management; and*

¹ How to cite this work: Weaver, P. (2022). On the History of Earned Value Management, Letter to the Editor, *PM World Journal*, Vol. XI, Issue X, October.

planning and scheduling. A discussion on the history of cost accounting and cost engineering is in my paper *The Origins and History of Cost Engineering*².

Earned value management: evolved from traditional financial management and cost engineering in the 1960s. The USA DoD was finding the visibility and control provided by these established systems inadequate for their needs. Earned value management (EVM) developed into an effective performance management system with a focus on the performance of the people assigned to manage specific work packages, control accounts, and the overall project. This understanding of the function and purpose of EVM is consistent across:

- The USA DoD, the organization that invented Earned Value,
- The committee responsible for publishing the National Defense Industrial Association (NDIA) / Electronic Industries Alliance (EIA) standard EIA-748, *Earned Value Management Systems*,
- The PMI Standards Development group responsible for the publication of ANSI/PMI 19-006-2019 *The Standard for Earned Value Management*,
- The AACE® committee responsible for International Recommended Practice No. 82R-13 *Earned Value Management (EVM) Overview and recommended practices consistent with EIA-748-C*, and
- The International Standards Organization (ISO), Technical Committee TC258 with representatives from 82 national standard bodies, responsible for publishing ISO 21508:2018 *Earned value management in project and programme management*.

Unfortunately, Paul's unique and unusual '*contractors' perspective*' of EVM bears no resemblance to the practices described in these definitive standards for EVM. His paper appears to confuse financial controls, cost accounting, and cost engineering, and then assumes these disciplines are somehow 'earned value'. The fundamental differences between Paul's views, and the definitions and approaches used by all of the authorities listed above (and numerous others) are:

1. EVM is not and never has been a payment management system. It is a performance management system focused on measuring the performance of the managers assigned to each work package and control account.
2. The values used in EVM (planned, earned and actual) are required to be measured in the same way, at the same time. This means the actual costs used as at 'time now' include all of the costs that have been, and will be, expended for the work performed to that point in time. Some of these costs may not be paid out of the accounts system for

² Originally published in PMWJ in Vol. XI, Issue III – March 2022. An augmented version of *The Origins and History of Cost Engineering*, incorporating information received after publication can be downloaded from: <https://mosaicprojects.com.au/PMKI-ZSY-020.php#Process1>

weeks, months, or occasionally years (eg, retention monies), but the full cost of the work accomplished is included in the EVMS as at the time the work is done.

3. The terms of contract are irrelevant to the calculations used in an EVMS. The timing and calculation of a contractor's invoices, the payment periods, and any subsequent subcontractor entitlements do not form part of the EVM calculations. These factors are of critical importance in the contractor's financial management and contract administration systems, but they are deliberately excluded from a proper EVMS to allow the rapid and accurate assessment of the performance of the work to date and its projected consequences.
4. EVM uses the approved budget costs as its starting point, EVM has no involvement in the cost engineering and estimating processes that are implemented to get to the approved budget, and the performance management baseline used in EVM excludes the contractor's profits and management reserves.

Paul's opening statement concerning my failure to reference Halbert Powers Gillette and Richard Turner Dana's 1909 book, *"Cost Keeping and Management Engineering: A Treatise for Engineers, Contractors, and Superintendents Engaged in the Management of Engineering Construction"* is misconstrued. There were two reasons for not mentioning the book in my EVM History paper the first is it was published 50 years before the time-frame of events covered in *The Origins and History of Earned Value Management*³ and second, the book has absolutely nothing to say about earned value management. As the title of Gillette and Dana's book unequivocally states, its subject matter in modern terminology is cost engineering. This important book is appropriately referenced in *The Origins and History of Cost Engineering*.

In conclusion, while I accept Dr. Paul D. Giammalvo and contractors generally are perfectly entitled to use any system they choose to run their projects, and in the absence of protected terms can call their systems anything they choose, including 'earned value'. All that the misappropriation of a standard term does is cause confusion, manifest in Paul's paper.

For the rest of us who prefer to use standard terminology correctly, the simple facts are EVM was developed in the 1960s, based on PERT COST, which in turn was developed from PERT TIME. EVM certainly drew on the well-established practice of cost engineering, but the two disciplines are designed for very different purposes. Cost engineering is focused on project cost estimating and control, EVM is focused on performance management.

For people interested in implementing EVM based on the ISO and PMI standards, I would recommend my book, *Easy EVM*⁴, and the soon to be published ISO 215012 *Project, Programme and Portfolio Management – Earned value management implementation guide*. For

³ Weaver, P. (2022). *The Origins and History of Earned Value Management*; PM World Journal, Vol. XI, Issue VIII, August. Available online at <https://peworldlibrary.net/wp-content/uploads/2022/08/pmwj120-Aug2022-Weaver-origins-and-history-of-earned-value-management.pdf>

⁴ https://mosaicprojects.com.au/shop-Easy_e-Books.php

implementing EVM based on EIA 748, the AACEi *Recommended Practice No. 82R-13* is a good start. The respective authors understand what EVM is, and what it is not.

Yours sincerely,



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