Earned Value Management- The Truth, the Whole Truth and Nothing but the Truth [1]

(Part 1 of a 2-Part Paper)

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Given the dynamic resurgence of MAGA, under the leadership of President Trump, now is a great opportunity to set the record straight regarding research that has failed to meet the Model Standards of Academic Information and Technology Literacy. As a result, "false or misleading" information has become the basis for teaching and learning Earned Value Management, specifically that "Earned Time" and "Earned Schedule", as recognized and rewarded by PMI and the efforts of the U.S. Government to divorce payment from performance. To the contrary, as this paper will validate, the concept of "Earned Schedule" or "Earned Time" originated as a core element of what is commonly known today as Earned Value Management (EVM), and "payment for performance" was the "raison d'être" for the adoption of Earned Value Management 120+ years ago.

And given that President Trump recently signed Executive Order 14094, "Restoring Gold Standard Science," on May 23, 2025. The order aims to ensure federal scientific research is conducted according to "Gold Standard Science" principles and rebuild public trust in science. It requires agencies to align their research practices with these principles, which include transparency, reproducibility, and unbiased peer review.[2]

Combine this with the U.S. Defense Acquisition University (DAU- Ft. Belvoir, VA), finally admitting that Earned Value Management, as defined under ANSI 748, has not worked. The Federal Acquisition Regulation, specifically Subpart 34.2 - Earned Value Management System, has posted an informal input invitation on Acquisition.gov, open until noon Eastern Time on **September 30, 2025**. Here's the link inviting our inputs - **https://www.acquisition.gov/far-overhaul/far-part-deviation-guide/far-overhaul-part-34.**

Why is all this so important? As we are already using **generative AI**, which has typically focused on administrative ("back-office") tasks, such as cost estimating, forecasting, and progress reporting. The focus now is on **agentic AI**, a more advanced form of artificial intelligence with enhanced reasoning capabilities that can independently plan and execute a series or network of complex tasks. Before we can do this, we MUST purge the system of any and all "fake news" (false or misleading theories, tools, or techniques) or systems that have failed to prove their effectiveness. (e.g., ANSI 748)

[1] How to cite this paper: Giammalvo (2025). Earned Value Management- The Truth, the Whole Truth and Nothing but the Truth, Part 1 of 2; *PM World Journal*, Vol. XIV, Issue VIII, August.
[2] White House (May 23, 2025) Fact Sheet for EO #14094, "Restoring Gold Standard in Science".

Under these circumstances, now is a great time to revisit and re-establish the TRUTH about the origins of Earned Value Management, and to move forward, we need to apply the "lessons learned" from 120+ years of TESTED and PROVEN methods that serve to protect the interests of both BUYER and SELLER. As "We the People" recognize that the U.S. government, like other governments, operates under a FIDUCIARY OBLIGATION[3] to its citizens, meaning it has a responsibility to act in our best interests and manage public resources and assets with care and integrity.

THE IMPACTS OF SLOPPY, INCOMPLETE, OR POOR RESEARCH

As the philosopher Umberto Eco told us, "Social media gives legions of idiots the right to speak when they once only spoke at a bar after a glass of wine, without harming the community... but now they have the same right to speak as a Nobel Prize winner. It's the invasion of the idiots." Goodreads. This undesirable reality of social media is what drove Trump to issue the "Restoring Gold Standard Science," which puts the burden on professionals and the societies that we've chosen to represent us to be more responsible in researching what we publish, consistent with the 5 Attributes of the Scientific Method.[4]

- ✓ ***"Empirical Observation***
  The scientific method is empirical. That is, it relies on direct observation of the world, and disdains hypotheses that run counter to observable fact. This contrasts with methods that rely on pure reason (including that proposed by Plato) and with methods that rely on emotional or other subjective factors.

- ✓ ***Replicable Experiments***
  Scientific experiments are replicable. That is, if another person replicates the experiment, they will obtain the same results. Scientists are expected to publish sufficient details of their methods so that another person, with appropriate training, can replicate the results. This contrasts with methods that rely on experiences that are unique to a particular individual or a small group of individuals.

- ✓ ***Provisional Results***
  Results obtained through the scientific method are provisional; they are (or ought to be) open to question and debate. If new data arise that contradict a theory, that theory must be modified. For example, the phlogiston theory of fire and combustion was rejected when evidence against it arose.

[3] Johnson, Vincent R. (2019) "The Fiduciary Obligations of Public Officials" St Mary's School of Law
[4] Flom, Peter. (2018, April 16). Five Characteristics Of The Scientific Method. sciencing.com. Retrieved from https://www.sciencing.com/five-characteristics-scientific-method-10010518/

- ✓ ***Objective Approach***
  The scientific method is objective. It relies on facts and the world as it is, rather than on beliefs, wishes, or desires. Scientists attempt (with varying degrees of success) to remove their biases when making observations.

- ✓ ***Systematic Observation***
  Strictly speaking, the scientific method is systematic; that is, it relies on carefully planned studies rather than on random or haphazard observation. Nevertheless, science can begin from a random observation. Isaac Asimov said that the most exciting phrase to hear in science is not "Eureka!" but "That's funny." After the scientist notices something unusual, they proceed to investigate it systematically."

This is the standard applied to this paper (and all the papers written by this author) and is the standard that, as professional practitioners, we should all be applying and expecting the professional societies we support to adopt. If we fail to adhere to the standards that apply to other professions, it will only reduce the respect we earn from those who engage our services in the future. We need to reject the standard that PMI has adopted for many years, which is the tools, techniques, and methodologies "used on most projects, most of the time," translating into at best average practices, which is made even worse by credible research by AIPM and KPMG, indicating only 36% of our projects finish within budget and only 32% finish on time.[5]

Figure 1 shows quotes taken from Quentin Fleming and Joel Koppelman's "Earned Value Project Management, 2nd Edition (2000) that clearly and unequivocally explain that Earned Value Management is a "cost engineering" function that evolved and matured with the Industrial Engineers from the 18th Century Industrial Revolution.

[5] AIPM and KPMG (2019-2022) The state of project management in Australia 2022- Leading projects through volatility.
https://info.aipm.com.au/hubfs/Reports%20and%20major%20content%20assets/The%20State%20of%20PM%202022%20Report%20FINAL.pdf

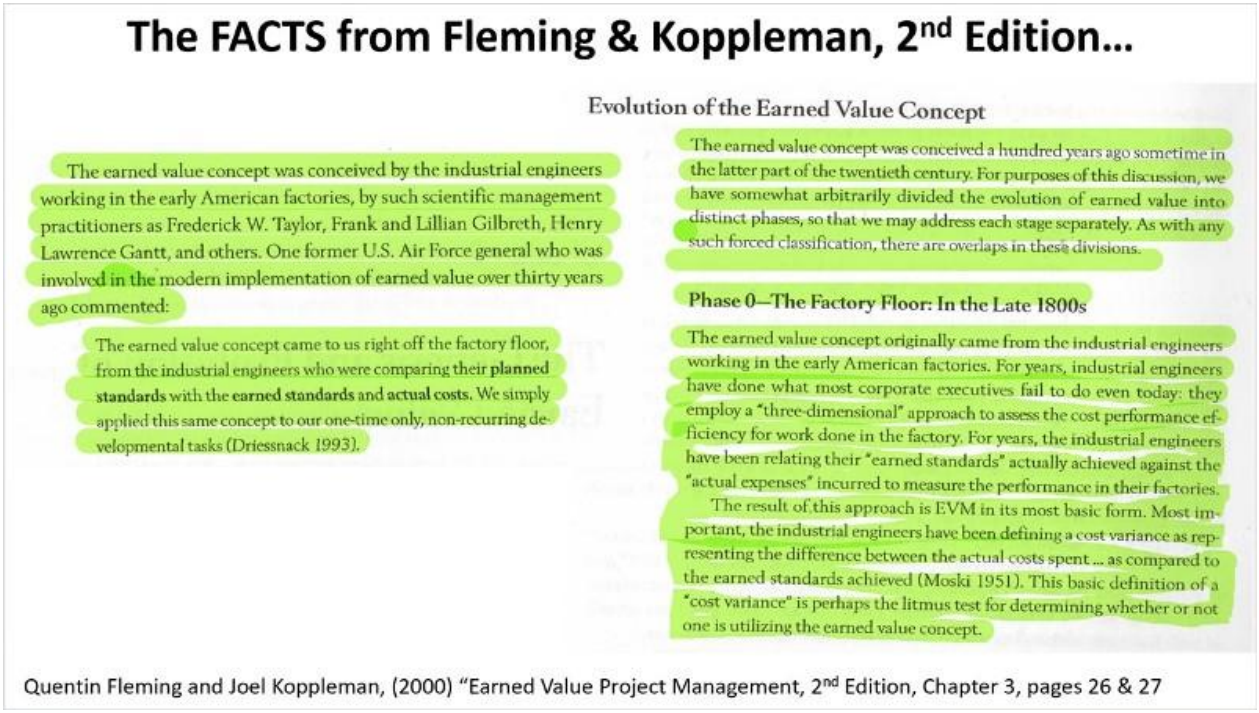

Figure 1- Factual Statements Published by Fleming and Koppelman, 1998 and 2000

What is especially ironic is how clearly General Driessnack explained that "all the earned value was an adaptation of the same methods used by the Industrial Engineers, direct from the factory floors." How this was misinterpreted to indicate that the Air Force discovered Earned Time or Earned Schedule can only reinforce the importance of sound research practices, especially requiring a complete literature review.

THE MISSING LINKS

While Fleming and Koppelman were clear in referencing the work of Taylor, Gantt, Fayol, the Gilbreths, and others, they were not more specific in the details.

This paper will take us to the next levels of details showing us a more detailed look at exactly what the Earned Value from the 1800s and how they have evolved over the past 120+ years, as this author learned Earned Value Management from Prof. Marvin Gates, PE, Adjunct Professor at Worcester Polytechnic Institute, between late 1969 to the early 1970s.

Contributions of Frank and Lilian Gilbreth-

> *"Frank Bunker Gilbreth (1868-1924) and Lillian Moller Gilbreth (1878-1972) are respected for their unique contributions to the advancement of motion study, fatigue study, and work simplification. Their humanistic approach to the problems of management utilized the principles of psychology and the application of experimental*

> *results to improve industrial procedures."[6] Of particular relevance today was the work of the Gilbreths in advocating for the establishment of standard operating procedures. (SoP) They researched and supported efforts to define the "one best way" to perform any single task, thereby completing the work as efficiently and cost-effectively as possible while reducing fatigue and physical risks to the worker.*

Contributions of Henri Fayol-

Henri Fayol, a French mining engineer and management theorist, laid out the fundamental principles of modern management. First published in 1916, "General and Industrial Management" remains a foundational text in the field of organizational management today.[7]

Fayol believed managers should interact with personnel in five basic ways to control and plan production:

> *Henri Fayol, a French mining engineer and management theorist, laid out the fundamental principles of modern management. First published in 1916, "General and Industrial Management" remains a foundational text in the field of organizational management today.[4]*
> *Fayol believed managers should interact with personnel in five basic ways to control and plan production:*
>
> > *"Prevoyance," also known today as Planning & Scheduling or "PMOs": This involves FORESIGHT- determining what needs to be done, how it will be accomplished, when it will be completed, and who will be responsible. Fayol's emphasis on prevoyance highlights the importance of foresight and both tactical and strategic thinking in successful management.[8]*
> > *Organizing: Management must ensure that all necessary resources, including raw materials, equipment, and personnel, are assembled at the appropriate time for production or execution. For today's relevance, see this reference: "Peeling the Onion:*

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[6] Schroyer, H. Q. (1975). CONTRIBUTIONS OF THE GILBRETHS TO THE DEVELOPMENT OF MANAGEMENT THOUGHT. Proceedings - Academy of Management. https://doi.org/10.5465/ambpp.1975.4975789

[7] Henri Fayol Management Theory & Principles. https://www.business.com/articles/management-theory-of-henri-fayol/

[8] prévoyance- British& American English: foresight NOUN /ˈfɔːsaɪt/ https://www.collinsdictionary.com/dictionary/french-english/pr%C3%A9voyance
Someone's *foresight* is their ability to see what is likely to happen in the future and to take appropriate action.
"He was later criticized for his lack of **foresight**."
Brazilian Portuguese: previdência
Chinese: 先见之明
European Spanish: previsión
French: prévoyance
German: Voraussicht
Italian: previdenza
Japanese: 先見の明
Korean: 선견지명
European Portuguese: previdência
Latin American Spanish: previsión

Why Centralized Control / Decentralized Execution Works" (2014) by Lt Col Alan Docauer, USAF.
Commanding: Management must encourage and direct workers' activity.
Coordinating: Management must ensure that workers collaborate.
Controlling: Managers evaluate and ensure that personnel follows management's commands.

Fayol's management theory included 14 key principles:

1. *"Division of work: Dividing work among employees helps improve productivity, accuracy, and efficiency. Fayol was an early advocate for the use of WBS/CBS/OBS structures.*
2. *Authority: Managers have the authority to enforce processes that make employees work as efficiently as possible; they are responsible for their team's output. This is where ANSI 748 has failed "We the People" who pay the taxes that support the government.*
3. *Discipline: It is the responsibility of managers to discipline workers to ensure compliance and collaboration. You can see this in action with the DOGE team and the Federal Government layoffs and downsizing.*
4. *Unity of command: To streamline the chain of command and avoid confusion, employees should answer to only one manager. This is often MISSING in today's companies.*
5. *Unity of direction: Everyone in an organization should work toward a single, unified goal. E.g., MAGA Efforts? SPI & CPI +/-5%?*
6. *Subordination of individual interest: All employees, including managers, should set aside their interests and focus solely on the company's success. "That which gets rewarded gets done."*
7. *Remuneration of employees: Managers must reward their employees, either monetarily or otherwise, for their efforts. Reference Figure 3 and the Incentive formulas under EVM.*
8. *Centralization: Management's authority should be centralized, but decision-making should be divided equally among leaders, ensuring that no single entity has the autonomy to make decisions unilaterally. Reference Centralized Decision Making/Decentralized Execution, by Docauer.*
9. *Scalar chain: Managers must communicate the leadership hierarchy across the company, so everyone knows whom they report to. Reference the relationships between the WBS and SCHEDULE, showing CONTROL ACCOUNTS, WORK PACKAGES, and PLANNING PACKAGES from the GAO's Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Program Costs.*
10. *Order: Maintaining order across the business increases productivity and output. Reference Figure 3 and the Incentive formulas under EVM.*
11. *Equity: All employees should be treated equally, and it is the managers' responsibility to protect their teams from discrimination. "Equal pay for Equal Work"*
12. *Stability: Employees who feel secure in their positions perform better, and managers are responsible for providing job security to their teams. Just how "stable" is Trillions of dollars in DEBT and no efforts to get government spending under control?*
13. *Initiative: Managers should encourage employees to be proactive whenever possible.*

14. *Esprit de corps: Managers are responsible for motivating their teams and setting a positive, supportive, and collaborative tone. MAGA Efforts?"*

Contributions of Henry Gantt-

Henry Laurence Gantt (1861-1919) was a mechanical engineer & management consultant who is noted for the following contributions:

"Task and bonus system- Under the Gantt Plan, the worker was guaranteed a minimum wage regardless of the pace of their production. However, if he/she could produce each deliverable at or faster than the STANDARD TIME, he/she would earn a bonus equal to the % that the standard was met or better. (For more, see Figure XX)

The perspective of the worker- The worker is entitled to a "fair day's pay for a fair day's work," and to work in a safe and healthy working environment.

The social responsibility of business- "The business system must accept its social responsibility and devote itself primarily to service, or the community will ultimately make the attempt to take it over to operate it in its interest ." - Henry Laurence Gantt."

Gantt is often, but incorrectly, credited with inventing the Gantt Chart, which bears his name. "Bar Charts" were invented more than 100 years ago by William Playfair.[9]

Contributions of Frederick Taylor –

Frederick Winslow Taylor (Born March 20, 1856, and died March 21, 1915) was an American Mechanical Engineer, inventor, and Management Consultant, known as the "father of scientific management."[10] See Authors Note[11]

His major contribution was the development of scientific management, also known as Taylorism. He sought to improve ***industrial efficiency*** *through the systematic study of work processes (Activity Based Costing/Activity Based Management), breaking down tasks into their smallest components (WBS/CBS) to find the most efficient methods."[12] This approach, which emphasized scientific analysis over traditional methods, revolutionized manufacturing and production management. "Taylor's work, while groundbreaking, also faced criticism for potentially dehumanizing the workplace and reducing workers to mere cogs in a machine. However, his contributions laid the foundation for modern management practices and continue to influence industrial engineering and production management today."[13] Notably, like this author, Taylor*

[9] Mosaic Project Services (2006) "A Brief History of Scheduling" by Patrick Weaver- https://www.mosaicprojects.com.au/PDF_Papers/P042_History_of_Scheduing.pdf y

[10] *Frederick Winslow Taylor* Written by John F. Mee for the Encyclopedia Britannica Editors https://www.britannica.com/biography/Frederick-W-Taylor

7 Fact-checked by Article History by Encyclopedia Britannica Editors

[11] AUTHORS NOTE- Not to be confused with Ibn al-Haytham: The Muslim Scientist Who Birthed the Scientific Method- https://www.realclearscience.com/blog/2014/03/the_muslim_scientist_who_birthed_the_scientific_method.html Mashudu Nethavhani (2020)

[13] *Frederick Winston Taylor (1911) "Principles of Scientific Management"* https://www.goodreads.com/book/show/18990540-the-principles-of-scientific-management-with-biographical-introduction

came up through the trades and didn't obtain his academic credentials until after he was well established, having tested and proven his theories in the field.

Taylor evolved FOUR RULES or GUIDELINES to implement his "Time and Motion Studies" successfully:

- ✓ *"Firstly, management working with qualified tradespeople develops a SCIENCE for each element of a worker's activities, which replaces the old "ad hoc" or "rule of thumb" methods with methods that have been TESTED and PROVEN to produce quality results SAFELY and COST-EFFECTIVELY. An example of what that looks like is one of Elon Musk's plants.*
- ✓ *Secondly, Management selects and trains, teaches, evaluates, and develops the workpeople to be assigned to perform each TASK or ACTIVITY. (This method embraces Activity Based Costing/Activity Based Management- ABC/ABM)*

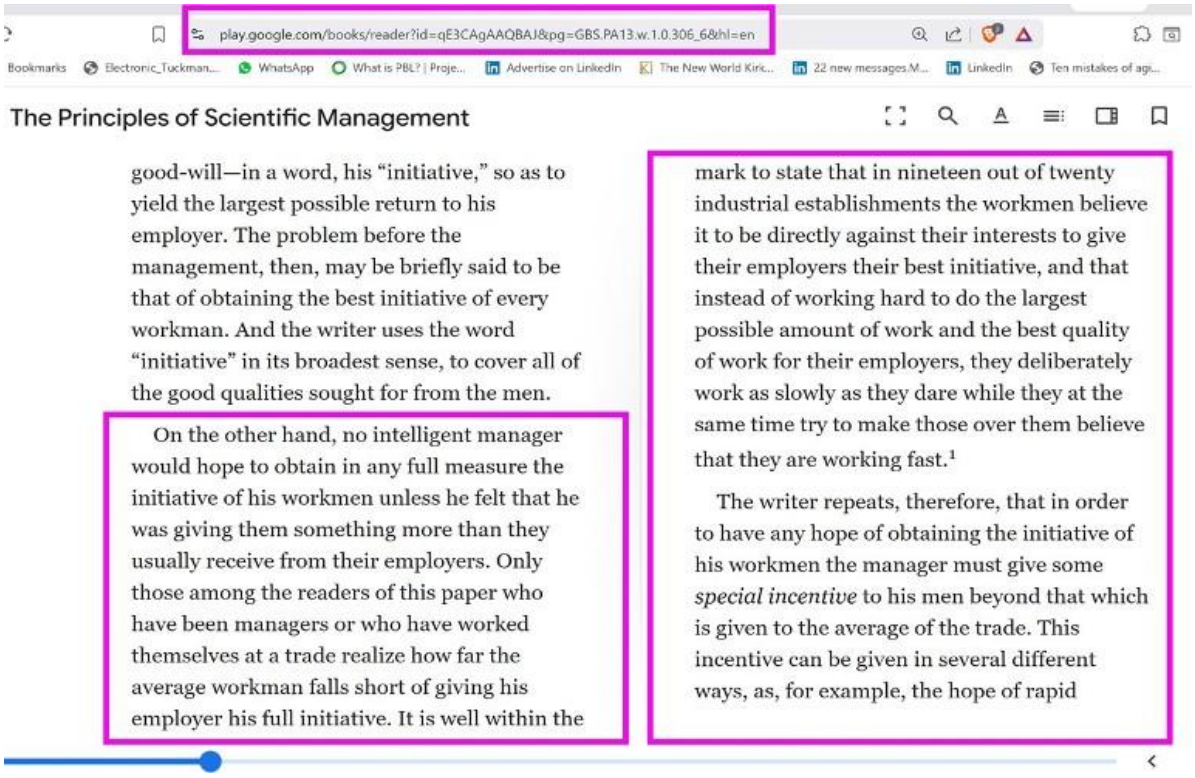

Figure 2- The Principles of Scientific Management, Frederick Winslow Taylor, 1911.[14]

- ✓ *Thirdly, Management and Workers COOPERATE to ensure that the work is being EXECUTED as developed by the Standard Operating Procedure (SoP) and that the QUALITY of the produce meets or exceeds the specifications AND that the payment meets the "fair wage for a fair day's work". (There is no DEI/ESG in this system.)*

[14] *Frederick Winston Taylor (1911) "Principles of Scientific Management"* https://play.google.com/books/reader?id=qE3CAgAAQBAJ&pg=GBS.PA13.w.1.0.306_6&hl=en

- ✓ *Fourthly and finally, there is SHARED responsibility between MANAGEMENT and the WORKFORCE. MANAGEMENT is responsible for providing a safe and healthy work environment, sufficient and appropriate tools, materials, and equipment, and it is the responsibility of the WORKFORCE to follow the SoP, use the tools & techniques developed, and report any problems with the equipment, materials, or workflow processes that can be improved upon."*

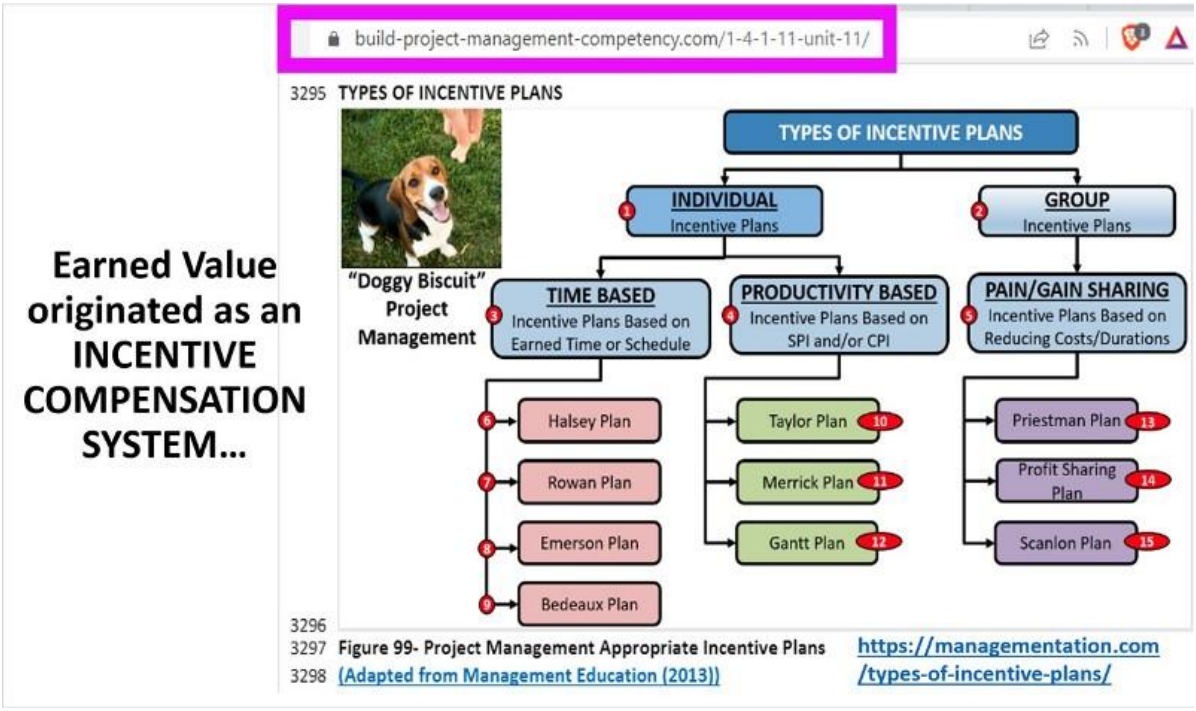

Figure 3- The Various TYPES OF INCENTIVE PLANS Illustrating the Many Contributors[15]

As we can see by the names, the time frames they lived, and their INCENTIVE PLANS were developed and tested, we can see three incontestable and undeniable FACTS:

1. Incentives were always an INTEGRAL COMPONENT that formed the basis and "raison d'être" for the adoption of Earned Value Management 120+ years ago;
2. 70% of the INCENTIVE FORMULAS are based on TIME or EFFICIENCY (Productivity)
3. The basis for Earned Time or Earned Schedule was not "invented" or "discovered" by Walt Lipske and the U.S. Air Force, as promulgated and tacitly validated by PMI. Or how the U.S. Government incorrectly divorced payments for performance, when they ADOPTED or ADAPTED the research of Taylor, Gantt, Fayol, the Gilbreth's et al., as captured and documented by Gillette and Dana in their 1909 book "***Cost Keeping and Management Engineering:*** *A Treatise for Engineers, Contractors and Superintendents Engaged in the Management of Engineering Construction*"

[15] What Are The Basic 4 Principles Of Management & Organization?. https://basadvisory.com/what-are-the-basic-4-principles-of-management-and-organization/

To be CONSISTENT with Trump's Executive Order number 14303 for "Restoring Gold Standard Science", signed on May 23, 2025, and given that the order emphasizes "transparency, rigor, and impact in federally funded research. It also aims to ensure that "federal decisions are based on the most credible scientific evidence."

Then wouldn't it make sense that not only the U.S. Government, especially the Government Accountability Office (GAO) and U.S. Defense Acquisition University (DAU), but also professional societies such as PMI, AACE, or anyone else that publishes standards or "recommended practices" related to progress or procurement adopt Earned Value Management and should adhere to the 3rd "rule" or "attribute" of the "5 Characteristics of the Scientific Method"

> *#3- Provisional Results*
> *Results obtained through the scientific method are provisional; they are (or ought to be) open to question and debate. If new data arise that contradict a theory, **that theory must be modified.** For example, the phlogiston theory of fire and combustion was rejected when evidence against it arose.*

One would hope that this "Leadership by Example" will become the driving force for all practitioners and their professional societies, regardless of their country, to adopt the same standards. We have already proven that the EVM System we have been using for our own "FOR PROFIT" companies and teaching them to our clients, is a "best TESTED and PROVEN method. Here is our premier case study for PT Freeport McMoran Indonesia, which has documented savings of U.S. $65 million and a productivity increase of up to 700% for night shifts, and stands as *prima facie* evidence for a SUCCESSFUL PMO that has remained in use for 20+ years.

CASE STUDY SHOWING TESTED AND PROVEN RESULTS USING GILLETTE & DANA'S METHOD

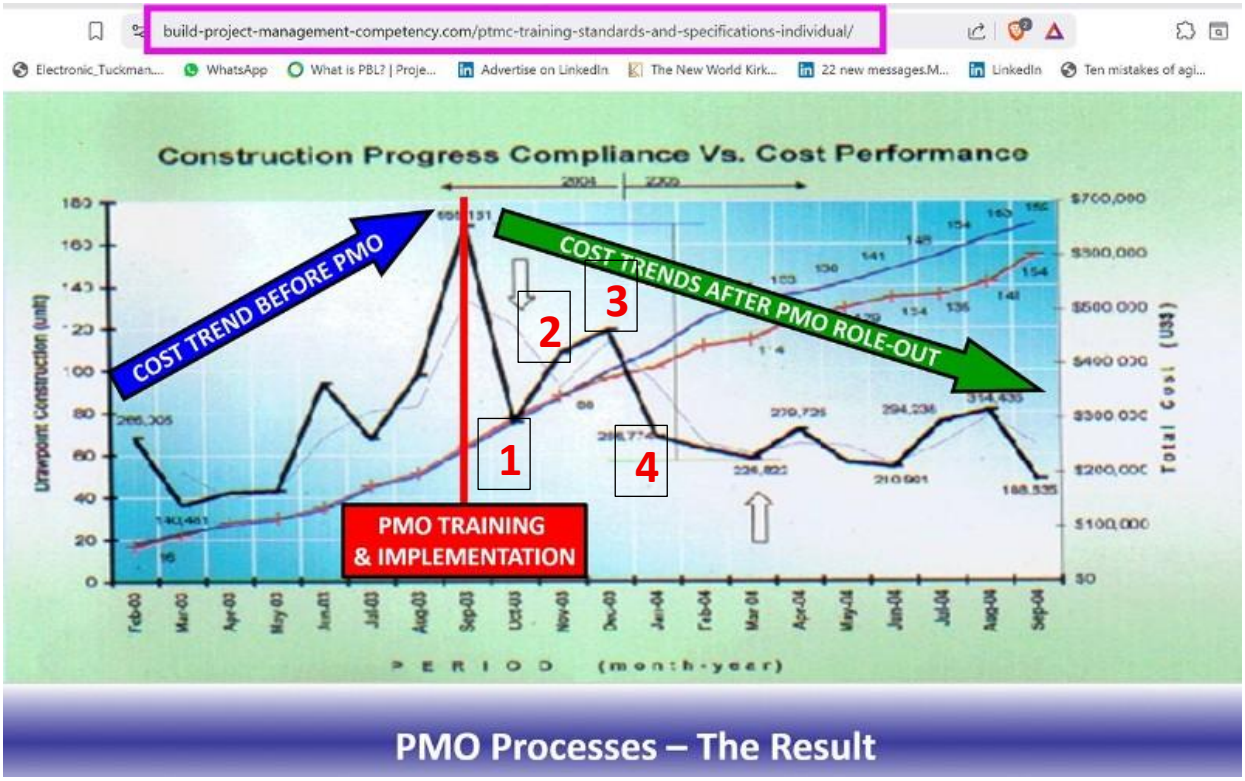

Figure 4- Actual Results from Implementing EVM Per Gillette and Dana

As you can see in Figure 4, partly due to the Hawthorne Effect but mostly due to the WORKFLOW PROCESS OPTIMIZATION, we were able to achieve significant improvements in both COST and PRODUCTIVITY. We achieved this using nothing more than Excel as the primary project management tool for planning and reporting. **(1)** The management suggested we move from Excel to MS Project, and in **(2),** you can see that using MSP increased the costs considerably and slowed the generation of reports by about 25%. Then, management directed us to use Primavera P6 **(3),** and the costs of administering the Earned Value Management System increased even further, as well as slowing down the ability to publish results within 4 hours after the close of each shift. After documenting the impacts, we convinced Freeport to revert to the use of Excel **(4),** and as you will see in the follow-on presentation, we continue to rely on Excel, especially as we move to adopt the use of Artificial Intelligence (AI), especially through the use of Statistical Process Control Charts, Excel Forecasting features and Monte Carlo Simulation software. https://lumivero.com/solutions/

For more on this story, go here, https://build-project-management-competency.com/ptmc-training-standards-and-specifications-individual/.

AND here https://pmworldlibrary.net/authors/ridwan-wibiksana/

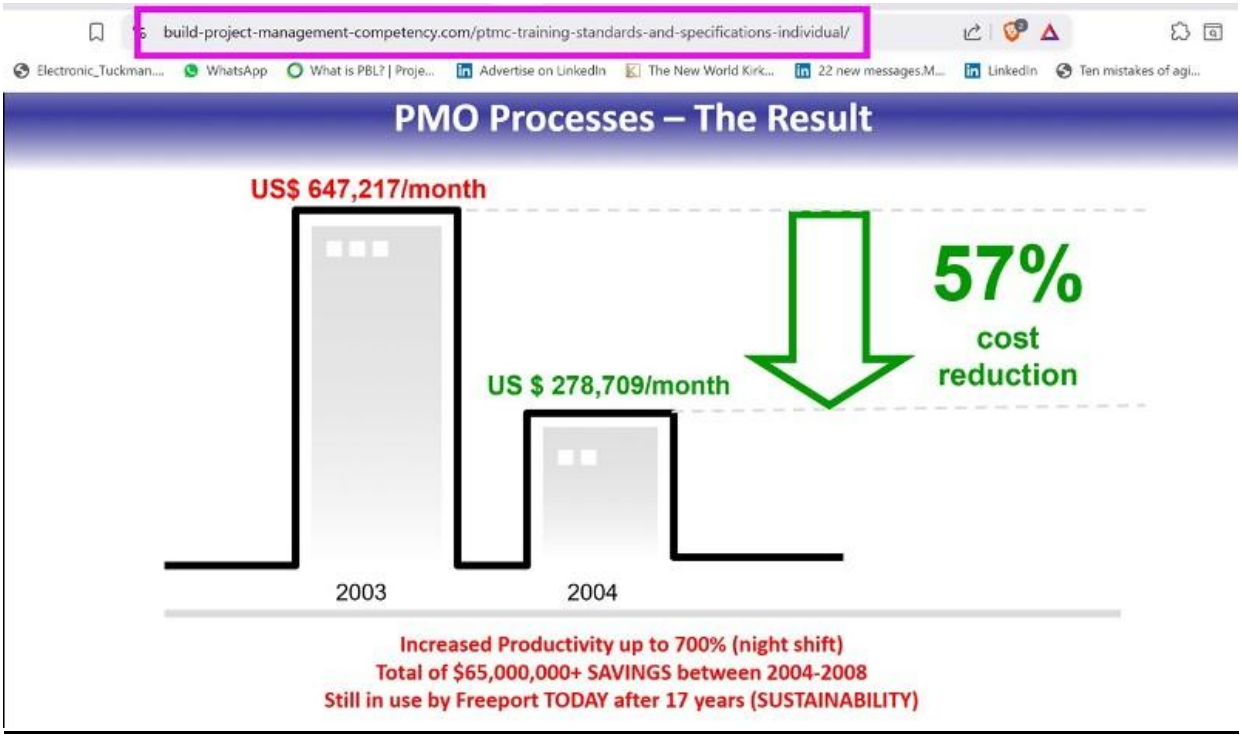

Figure 5- Quantified Results from Implementing EVM Per Gillette and Dana

Implementing Earned Value Management, not as advocated by ANSI 748, but using the Gillette and Dana method, Freeport Indonesia achieved a 57% reduction in both direct project costs and project overhead costs.

Because the focus was on EFFICIENCY (Using CPI and SPI), we were able to increase productivity by as much as 700% on the night shifts.

The productivity on night shifts suffered because if they ran out of materials, they had to drive 2 hours out of the mine to the laydown yards, load their trucks, and drive 2 hours back into the mine. By requiring the first two shifts to PRESTOCK for the next shift, we increased PRODUCTIVITY.

This is one of the very few PMOs that has remained substantially unchanged since it was designed 21 years ago.

This resulted in a total of U.S. $65 million in savings over four years, leading to the Project Manager for this PMO implementation being promoted from a General Superintendent to a Vice President position by Freeport McMoran Indonesia mining.

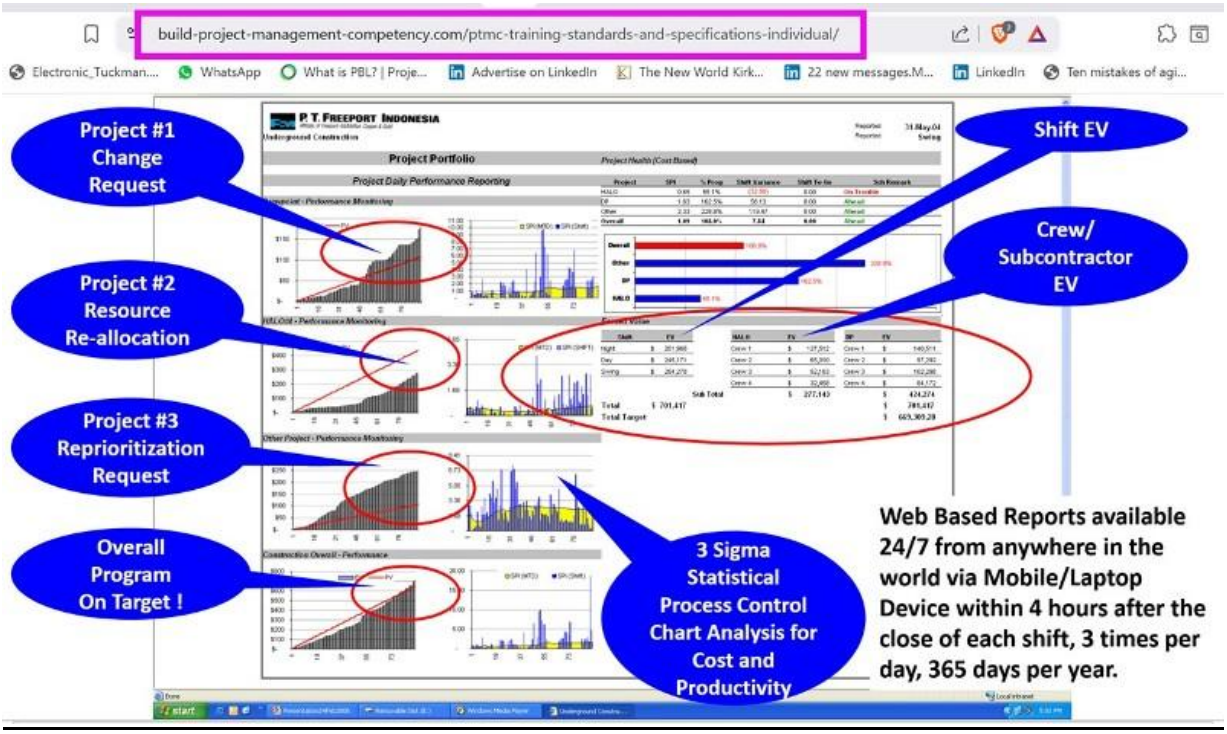

Figure 6- An Actual DAILY Progress Report Issued Electronically 3X/Day, 365 Days/Year

One of the "Lessons Learned" from Freeport was the importance of focusing on all levels of management, not just the "Big Bosses".

Given that project performance data has about the same half-life as that of a ripe banana, monthly reports are of little or no value. To have any value in informing management in making resource allocation decisions, progress reporting should lag no more than one day behind physical progress in the field. This report is issued three times a day, every day of the year. The report is published online within 4 hours after the completion of each shift. This is done with a PMO team of 6 people.

It covers the following levels of management:

- Program (Operations Managers)
- Project Managers
- Shift (Superintendents)
- Individual Work Crews (Crew Forepeople)

We utilize Statistical Process Control Charts to MAXIMIZE PRODUCTIVITY without compromising QUALITY of the work or the SAFETY.

BONUSES (incentives) are awarded not only for PRODUCIVITY, but also for meeting or exceeding Safety and Quality, but especially for any INNOVATIVE IDEAS or SUGGESTIONS. These are distributed on a weekly, monthly, and annual basis.

Below is an example from another one of our top graduates from Vale Tin and Nickel, Brazil, who wrote an outstanding paper showing how Earned Value Management is being applied in real mining, using examples from the popular Discovery Channel reality program, "Gold Rush."- "Enhancing Productivity in Greenfield Mining Projects through Earned Value Management and Timely Contractor Payments" Pangestu, S. A. (2024). Enhancing Productivity in Greenfield Mining Projects through Earned Value Management and Timely Contractor Payments; PM World Journal, Vol. XIII, Issue X, October/November

Specifically, Ms. Pangestu focused on how EVM is being used today to increase SPI and CPI through her use of well-established "motion and time study" professionals:

- ✓ Discovery Channel UK. (2024, September 4). Crab Shells Help Hoffmans Find Big Gold Haul | Hoffman Family Gold [Video]. YouTube. https://youtube.com/watch?v=aiU-xvAaO9M
- ✓ Discovery Channel UK. (2019, December 11). Parker Hires An Analyst To Get His Plant Running More Efficiently | Season 10 | Gold Rush [Video]. YouTube. https://www.youtube.com/watch?v=87sLm_JdAmw
- ✓ Discovery UK. (2024, March 1). Tony Beets makes $80,000 more by building a new road | Gold Rush [Video]. YouTube. Retrieved from https://www.youtube.com/watch?v=2oSHsXxC3HE&t=528s

And how INCENTIVES were applied on real projects, just as Gillette and Dana explained:

- ✓ Discovery UK. (2024, October 30). Hoffman's End The Season With $2 Million Of Gold Before Winter Shuts Them Down | Hoffman Family Gold [Video]. YouTube. https://www.youtube.com/watch?v=odJu1nqkpDo

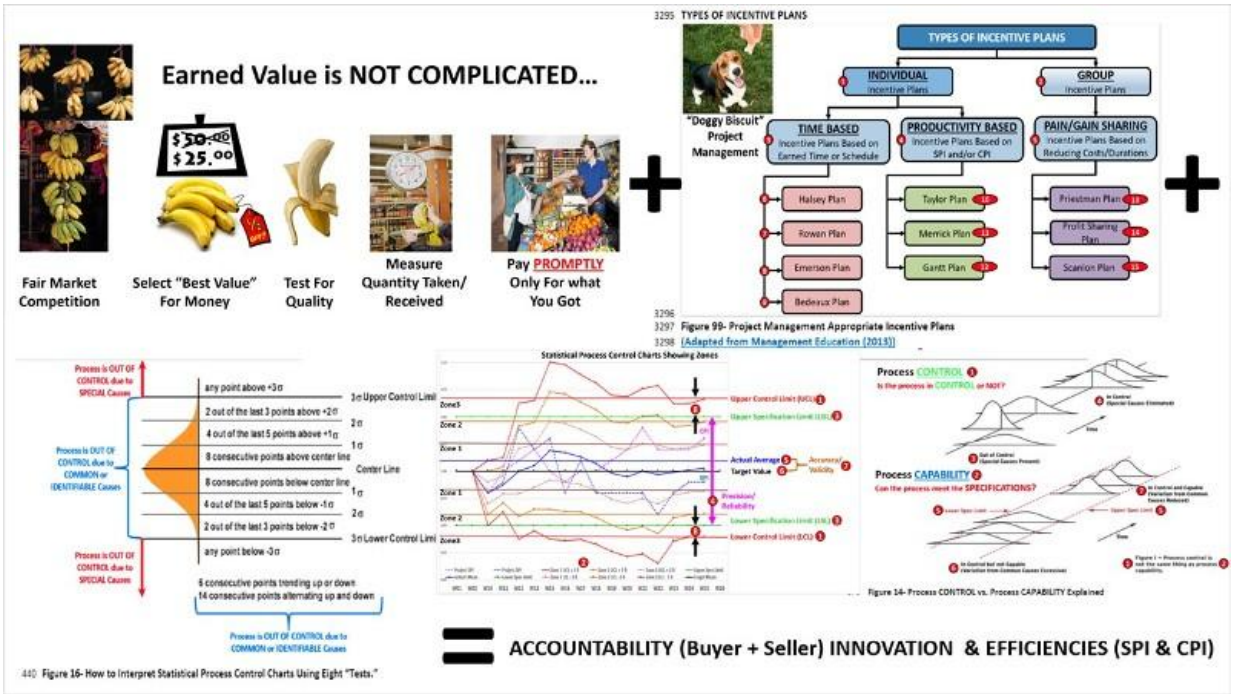

Figure 7- Simplified But Effective EVM Process Map Following Gillette & Dana.

To summarize, we do not use ANSI 748 EVM as the basis for our "for-profit" businesses or teach it to our clients.

Under Earned Value Management as structured by Gillette & Dana, we do not need to use MSP, P6, or any dedicated scheduling software. Excel is perfectly sufficient.

We utilize and teach others how to apply Earned Value Management, as developed by Taylor, Gantt, Fayol, the Gilbreths, and others, and published by Gillette and Dana. This approach has been modified to incorporate AI features, including Excel, Statistical Process Controls, and Simulation.

We are currently experimenting with other AI solutions, specifically using **generative AI**, which has typically focused on administrative ("back-office") tasks, such as cost estimating and progress reporting. Our focus now is on **agentic AI**, a more advanced form of artificial intelligence with enhanced reasoning capabilities that can independently plan and execute a series or network of complex tasks, replacing forward pass/backwards pass software with Systems Dynamics models. (Using Boolean Operators- IF/THEN logic)

The FOCUS is on increasing the EFFICIENT UTILIZATION of MONEY (CPI) and ASSETS (SPI) through WORKFLOW OPTIMIZATION. (SPC)

All workflow processes include or incorporate INCENTIVES in the form of cash and/or recognition awards. (i.e., Time, Money, Safety, Quality) and they apply at ALL LEVELS from Top Management to the Janitor.

Many private sector contractors today, including not only tradespeople but also professionals and other service providers, as well as nearly all retail sales outlets (e.g., greengrocers), utilize "Earned Value Management," even though they may not refer to it by this name.

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He is also active in the Global Project Management Community, by playing a "thought leadership" role for the Association for the Advancement of Cost Engineering International, (AACEI) http://www.aacei.org/ since 1991; He has also been active in two IPMA member organizations: The Green Project Management Association (GPM) http://www.greenprojectmanagement.org/ where he served on the Certification Board of Directors for two years and the American Society for the Advancement of Project Management http://www.asapm.org/ for which he served for four years on the BoD as Director of Marketing. He also sat on the Board of Directors of the Global Alliance for Project Performance Standards (GAPPS), www.globalpmstandards.org, Sydney, Australia and is active as a regional leader. Currently, he is a compensated consultant to the International Guild of Project Controls. http://www.planningplanet.com/guild as the primary author of their "Compendium and Reference" as well as the chief architect of their competency-based credentialing program. http://www.planningplanet.com/guild/certification

He has spent 35 of the last 50 years working on large, highly technical international projects, including such prestigious projects as the Alyeska Pipeline and the Distant Early Warning Site (DEW Line), upgrades in Alaska and the Negev Airbase Constructors, Ovda, Israel and the Minas Oil Field in Rumbai, Sumatra. His current client list includes Fortune 500 major telecommunications, oil, gas and mining companies plus the UN Projects Office and many other multi-national companies, NGO organizations and Indonesian Government Agencies.

In addition to 45+ years of hands-on field experience, Dr. Giammalvo holds an undergraduate degree in Construction Management, his Master of Science in Project Management through

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