Do Private Sector Small To Medium Sized, Entrepreneurial General Contractors Comply With ANSI 748? If yes, how, if not, why not?

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INTRODUCTION-

Over the past year or two, there have been many debates, some of them quite heated, on one or more LinkedIn Forums as to whether the private sector, small to medium sized contractors, working on firm fixed price contracts using the traditional "Design>Bid>Build" delivery method do or do not use Earned Value in full or at least substantial compliance with ANSI 748, in accordance with the NDIA Intent Guide. (To be clear, "compliance" as used in this paper means "to comply with the [agency's] implementation of ANSI 748") How private sector contractors use earned value management is sometimes derisively referred to as "Earned Value Lite", but what this paper hopes to demonstrate that there are only a few differences in HOW the private sector contractors use earned value management (small letters) but how we use Earned Value Management is important to understand for those at the state or federal levels trying to improve the efficiency and effectiveness of Earned Value Management (capitalized).

The theme underlying many of these debates, is there are some (many?) of us who believe that the way the US Government uses earned value is too bureaucratic and focused on audits rather than on being proactive in managing the project, which is how entrepreneurial contractors use earned value. And given the rather abysmal failure rate of projects funded by local, state and federal government and given that save for Ben Bernanke's printing presses, the US Government would be technically bankrupt, the premise of these debates and the rational for this paper is by looking at the differences between the way the Federal Government mandates the use of Earned Value Management compared to the way entrepreneurial contractors use earned value management, it MAY offer some ideas to the Federal and State governments on how better to use EVM as an effective project planning and execution management tool? And to be clear, the author fully understands and appreciates that "the public sector is not driven by the same financial motivation that drives behavior in the commercial world" but that doesn't preclude the possibility that the way the private sector, entrepreneurial contractors use EVM cannot or will not provide ideas on how the public sector can or should be doing it. While contractors have a fiduciary obligation to our shareholders, government officials should have a fiduciary obligation to the taxpayers.

The author also realizes and recognizes that there are examples where the government has been flexible in their interpretation of ANSI 748 and the NDIA Guidelines to accommodate some of the suggestions being made in this paper. But the point being made here is that some numbers of technocrats DO take the NDIA Guidelines literally and that there needs to be a scalable model and not just a one size fits all approach.

This paper is also not intended to be an attack on any person, agency or organization. The USA is in serious financial difficulty and "Business as Usual" is no longer an option. Clearly, what we are doing now is NOT working. This paper is written as a call to action by a concerned citizen to recognize there are problems and to look at the private sector entrepreneur's for possible solutions.

For the purposes of this paper, "Small to Medium Sized" contractor is defined as companies with no single project valued at more than 20 million dollars and gross annual revenues of less than 100 million dollars. Companies falling just short of the ENR top 400. These companies were chosen because tend to be very entrepreneurial, often family based organizations. They are not yet large enough to have created levels of bureaucracy or fiefdoms within their organizations. Every process has a purpose and every process must be optimized to provide a return sufficient to pay for or offset the expense. Failure to do this will result in the contractor quickly being driven out of business.

This category of contractor is generally bidding on projects using the traditional Design>Bid>Build approach where the design is done by the owner or by an architect/engineer selected by the owner (or buyer) and is put out to bid on a firm fixed price (lowest responsive bidder) is awarded the contract. This is also known as "hard money" contracting because typically, the EBIT profit margins on projects in this category are typically in the single digits.

This is important because with single digit profit margins, the difference between staying in business and ending up in bankruptcy court revolves around:

1) aggressive and effective cash flow management;
2) effective productivity monitoring and management;
3) efficient change order management'
4) aggressive pursuit of claims/defense against counter-claims and late delivery penalties;

Yet based on the first-hand experience of the author, as a small to medium sized "hard money" (firm fixed price) general contractor and property developer, earned value is the ONLY tool which can provide an accurate and timely status of the "health" of a project in terms of both time and cost.

Furthermore, from a pragmatic perspective, as contractors literally live or die by their cash flows earned value implemented correctly, is the best possible way to ensure a healthy cash flow to the contractor based on work performed and as an added plus, the data generated by a properly set up earned value management system is essential to perfecting claims against an owner or for use by an owner in defending against any spurious claims from the contractor.

Explained another way, at least in the context of construction and the built environment, earned value is or at least should be, a core competency- an "essential practice" if one expects to succeed as a construction contractor with single digit EBIT margins.

Even though relatively few of the projects the author has worked on over the past ~40 years REQUIRED the formal use of Earned Value Management, as a contractor planning and executing projects where our own money was on the line if the project "succeeded" or "failed", we insisted on using "earned value" even if it weren't required. Thus the author could never understand why there is so much resistance to using Earned Value Management, especially from contractors working in the government sector.

It was this tension between the way the government (public sector) uses ANSI 748 and the way private sector, entrepreneurial contractors use our version of "earned value" which prompted this paper. The primary objectives of this research are to:

1) Compare how the private sector uses EVM vs the 32 NDIA criteria;
2) Analyse what the differences are and;
3) Propose possible improvements to ANSI 748 based on how entrepreneurial contractors use EVM.
4) To serve as the basis for a more open, transparent and balanced dialogue.
5) Another option is to use this research as the basis to create a SCALABLE model of Earned Value rather than a "one size fits all" solution.

The last option is the subject of a follow on paper, once all the feedback has been analysed from the work being shared here.

RESEARCH METHOD-

To compare how the private sector contractors use ANSI 748, the author started with the NDIA Intent Guide, which contains some 179 questions[1] which must be answered in order to prove a government sector contractor is in compliance with ANSI 748.

Then based on 40+ years of first-hand experience working as a general contractor and property developer, the 179 NDIA requirements were commented on by the author, with the hopes and expectations that other contractors will step forward and make any corrections, amplifications or clarifications which they feel the author may have missed or been unclear on.

As this remains a "work in progress" the "living document" template has been uploaded to this URL under "Creative Commons License BY" where anyone is encouraged to download it, adapt, modify or improve on it, with the only request that proper citation be provided to the source of this document and that the revisions be shared with the author.

[1] Thanks to Glen Alleman, for providing the Excel template.

THE FINDINGS-

Of the 179 questions or "tests" promulgated by the NDIA to measure whether a contractor is compliant with the intent, 157/179 or 88% are done[2] by successful, private sector contractors. These are shown in GREEN in the spread sheet analysis. While readers are encouraged to review them and provide comment, the focus of this paper is not where there is agreement, but where there is disagreement. The only significant differences found in those items shown in green is while the government sector contractor is obligated to prove compliance, in the private sector, even though we fulfill all these requirements, under firm fixed price contracts, we are not contractually obligated to share the information with our clients. However, we do them simply because they are "good" or "sound" business practices.

Worth noting here is while the primary driver for government contractors appears to be compliance to protect the contractor in the case of a government audit, the primary reason behind why the private sector, entrepreneurial contractor does these things it because they 1) Enhance cash flow and cash flow management and 2) Serve to provide evidence in arbitration or litigation of the cost or time impacts of changes in scope made by the owner OR to defend against claims by the owner seeking liquidated damages for delays. Very important for those agencies responsible for making changes in ANSI 748 understand how or why the private sector contractors (at least in construction) tend to embrace the fundamental principles of earned value management (small letters)

Of the 179 questions or "tests" for compliance, 3 (1.7%) were RED- that is, private sector contractors do something significantly DIFFERENT than what is required by the NDIA Intent Guide. And there were 3 (1.7%) where the contractors partially met the NDIA requirements or met them in a way quite different than what NDIA requires. Then lastly, there were 16 (9%) which are totally or substantially not applicable to the private sector, which the government requires.

WHERE WE DO NOT AGREE- (3 questions or 1.7%)

The three NDIA questions the private sector does NOT agree with ANSI 748 are: (See Appendix for those elements coded in RED)

I.1.a- Is only one WBS used for the contract?
14.a- Is all budget available as management reserve, identified and excluded from the performance measurement baseline?
14.c. Is undistributed budget limited to contract effort which cannot yet be planned to WBS elements at or below the level specified for reporting to the Government?

To elaborate in more detail:

[2] See Appendix A for specific details on the questions and the analysis.

I.1.a- Is only one WBS used for the contract?

For well over 40 years, the private sector contractors have been using the two dimensional Construction Specifications Master and Uniformat as the basis for our work breakdown structures (WBS) and cost estimate breakdown structures. (CBS) (Both RS Means and Richardon's databases are both coded using Master Format and Uniformat.) Using this coding structure, we can sort our project deliverables either by COMPONENT (Uniformat[3]) or by TRADE (Masterformat).[4]

About 25 years ago, the government of Norway, unhappy with getting different work and cost breakdown structures from their production sharing partners in the North Sea, commissioned a team to create a STANDARDIZED WBS/CBS. This is known as NORSOK Z-014 [5]and is currently used by many of the major oil and gas companies working in the North Sea. Norsok Z-014 is a three dimensional Work and Cost Breakdown Structure, enabling the sorting of work by Resource, by Component or by Timing.

With the proliferation of Building Information Modeling, (BIM) the North American Construction Specifications Institute, (CSI) in collaboration with the International Organization for Standardization (ISO) and the International Construction Information Society (ICIS) subcommittees and the Electronic Product Information Cooperation recognized the need for a STANDARDIZED Coding Structure. Thus was born Omniclass. OmniClass is, in simple terms, a standard for organizing all construction information and communicating that information to all stakeholders. Omniclass incorporates the well-established and proven CSI Masterformat (Table 22) and Uniformat (Table 23) and adds to them another 13 other sort capabilities, giving us a total of 15 different ways to view our project deliverables and the costs associated with them.

Why are multi-dimensional WBS/CBS a "better" practice than single dimensional WBS/CBS? Because just like the use of 3D CAD drawings enables us to see where conflicts lie within our design, so looking at the work deliverables from more than one perspective enables us to see missing scope and the costs which go with that missing scope. To see examples of the use of 3 Dimensional Work and Cost Breakdown Structures, look to the cutting edge work of Jean Yves Moine[6].

RECOMMENDATION #1- Given the proliferation of BIM and the use of 3D modeling in everything from ships to planes to buildings, NDIA should seriously consider moving to multi-dimensional WBS/CBS structures.

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[3] CSI's Uniformat (2010) http://fire.nist.gov/bfrlpubs/build99/PDF/b99080.pdf
[4] CSI's Masterformat (2012) http://www.csinet.org/Home-Page-Category/Formats/MasterFormat/About-MF/MasterFormat-2012-Numbers-Titles.pdf
[5] Norsok Z-014 Standardized Cost Breakdown Structure For Offshore Oil and Gas (2012) http://www.standard.no/PageFiles/22773/Z-014%20Edition%202%20May%202012.pdf
[6] Moine, J-Y, (2012) http://3d-wbs.blogspot.com/

14.a- Is all budget available as management reserve, identified and excluded from the performance measurement baseline?

For the contractor, working on a firm fixed price contract, his/her "management reserve" is the profit margin. As the contractor working on a firm fixed price contract is not obligated to disclose his/her profit margin to the owner, ANSI 748 and the NDIA Intent Guide need to recognize that for applications of Earned Value for Fixed Price Contracts, that the contractor is providing his SELLING price and not his COSTS. The contractors selling price includes his project direct costs (labor, materials and equipment) along with project indirect costs (General Condition requirements) plus home office indirect costs. (Often referred to as General, Sales and Administrative or GSA)

RECOMMENDATION #2- The NDIA/ANSI 748 needs to be broken into two separate standards- one which applies to Cost Plus Contracting and another which applies to Fixed Price Contracting. In fixed price contracting applications there should be NO undistributed money and NO "Level of Effort" activities.

14.c. Is undistributed budget limited to contract effort which cannot yet be planned to WBS elements at or below the level specified for reporting to the Government?

Under firm fixed price contracting there is NO "undistributed budget". The contractor bids ONLY on the work defined in the contract documents ("bid package") and nothing more. Having undistributed budget is a bad practice as it serves as nothing more than a slush fund to cover for people either too lazy or too incompetent to do a proper job of scope definition up front. Given that projects in the government sector have historically been shown to run late and/or over budget, this is a practice which needs to be stopped.

RECOMMENDATION #3- ANSI 748 should NOT allow for ANY undistributed budget, whether for cost plus or firm fixed price type contracts. Every WBS element needs to be identified and priced out BEFORE work is authorized. IF work is discovered which was unknown previously, then it should be dealt with as a change order, with complete cost and schedule assessment. In the private sector, scope which is known but not accurately enough to price out contains an ALLOWANCE in the contract value. If the owner exceeds that allowance, then he/she is required to pay the difference. If the owner is under the allowance, the contractor owes the owner a credit. But in no case are there WBS elements with no money attached to them.

WHERE SMALL/MEDIUM CONTRACTORS PARTIALLY AGREE and/or FULFILL THE NDIA REQUIREMENTS DIFFERENTLY- (3 questions or 1.17%)

There are 4 questions on the NDIA compliance list where private sector contractors comply partially or comply in a substantially different way than what NDIA/ANSI 748 call for. They are:

1.c.(1)- Are the following items included in the WBS: Contract line items and end items (if in consonance with MIL–STD–881 latest edition)?

15.b. Do the sum of the CA budgets for higher level WBS elements, undistributed budget, and management reserves reconcile with the contract target cost plus the estimated cost for authorized unpriced work?

19.f. Are the bases and rates for allocating costs from each indirect pool to commercial work consistent with those used to allocate such costs to Government contracts?

To explain in more detail-

1.c.(1)- Are the following items included in the WBS: Contract line items and end items (if in consonance with MIL–STD–881 latest edition)?

Partially- While the private sector is not bound by MIL-STD-881, we are bound by the bid package and contract documents, including General Conditions, special conditions and the other bid and contract documents. This applies whether using AIA, CSI, FIDIC or EJCDC standard bid documents.

As contractors tend to use activity based costing, our line items are the activities. In the world of firm fixed price contracting it is the responsibility of the owner to define the scope and it is the contractor who is responsible to demonstrate to the owner through the bidding process HOW the contractor will deliver what the owner wants and how much what the owner define will cost the owner. (The contractors selling price, not the contractors costs)

Thus the highest level contractor WBS's are defined by the "shall" clauses in the contract documents. Each "shall" clause is high level WBS in the cost estimate and the bid and to create the bid, the contractor produces a bottom up estimate based on the activities required to produce what the owner specified.

15.b. Do the sum of the CA budgets for higher level WBS elements, undistributed budget, and management reserves reconcile with the contract target cost plus the estimated cost for authorized unpriced work?

Partially- Using Activity Based Costing, the contractors Control Account is the activity and these activities "roll up" to each WBS element and eventually into the "shall" clauses in the contract. For the contractor, there is generally no "authorised unpriced work" unless for a cost plus change order, which is rarely used by owners who opted for firm fixed price contracting. Most owners expect all change orders to be priced out including an analysis of the impacts to the schedule before they will approve the change order.

19.f. Are the bases and rates for allocating costs from each indirect pool to commercial work consistent with those used to allocate such costs to Government contracts?

Partially Applicable- In the world of firm fixed price contracting, the owner has no right to see the breakdown between direct and indirect costs. However, from a pragmatic perspective, both the base and billing rates for labor are largely determined by market forces, EXCEPT in the case where the project requires "Prevailing Wages" (union wages) be paid. In those circumstances the government (state or federal) has dictated what the labor rates will be, including some (but not all) overhead items.

RECOMMENDATION #4- The whole matter of "undistributed budgets" is a recipe for misappropriation and misallocation of taxpayer money. Expanding on Parkinson's Law, which states that work will expand to fill the time allotted, also applies to money- work will expand to consume all the money available. This MUST cease. There must be budgets allocated to each and every WBS structure AND those responsible MUST be held accountable first for creating "accurate, precise and reliable" cost estimates, then for performing within those budgets. And this applies both to time and money.

WHERE ARE THE NDIA REQUIREMENTS NOT APPLICABLE TO PRIVATE SECTOR CONTRACTORS- (16 questions or 10%)

Having explored the 3 NDIA requirements which are specifically NOT met by the private sector under firm fixed price contracting and the 3 NDIA requirements which are PARTIALLY met by the private sector under firm fixed price contracting, let's turn our attention to those 8 requirements which the private sector considers not applicable.

8.a.(2) and 8.a.(3) Does the performance measurement baseline consist of the following:
8.a.(2) Higher level WBS element budgets (where budgets are not yet broken down into CA budgets)?
8.a.(3) Undistributed budgets, if any?
8.a.(4).c. In the event that future contract effort cannot be defined in sufficient detail to allow the establishment of CAs, is the remaining budget assigned to the lowest practicable WBS level elements for subsequent distribution to CAs?
8.a.(4).d. Does the supplier require sufficient detailed planning of CAs to constrain the application of budget initially allocated for future effort to current effort? (Explain constraints.)

9.a.(1). Does the budgeting system contain the total budget for the contract (including estimates for authorized but unpriced work)?

12.a Are time–phased budgets established for planning and control of level of effort activity by category of resource; for example, type of manpower and/or material? (Explain method of control and analysis.)
12.b Is work properly classified as measured effort, LOE, or apportioned effort and appropriately separated?
12.c Is LOE held to the lowest practical level and budgeted on a time–phased basis?

13.d. d. Are overhead budgets and costs being handled according to the disclosure statement when applicable, or otherwise properly classified (for example, engineering overhead, IR&D)?

25.c. Are data elements reconcilable between internal summary reports and reports forwarded to the Government?

27.h. Are estimates of costs at completion utilized in determining contract funding requirements and reporting them to the Government?
27.i. Are the supplier's estimates of costs at completion reconcilable with cost data reported to the Government?

28.c. . Are internal budgets for authorized, but not priced changes based on the supplier's resource plan for accomplishing the work?
28.d. If current budgets for authorized changes do not sum to the negotiated cost for the changes, does the supplier compensate for the differences by revising the undistributed budgets, management reserves, budgets established for work not yet started, or by a combination of these?

30.b. Are direct or indirect cost adjustments being accomplished according to accounting procedures acceptable to DCAA?

So let's explore these in a little bit more detail.

8.a.(2) and 8.a.(3) Does the performance measurement baseline consist of the following:
8.a.(2) Higher level WBS element budgets (where budgets are not yet broken down into CA budgets)?

Not Applicable to the private sector, hard money contractor. Why. Because in order to bid the project, the contractor had to break the WBS elements provided by the owner in the contract documents into "how" the contractor planned on doing the work. In order to perform a bottom up estimate, the contractor MUST break down the budgets. There are no budgets not broken down into the control account level.

8.a.(3) Undistributed budgets, if any?

Not Applicable to the private sector, firm fixed price contractor. The only undistributed budget for the firm fixed price contractor is his/her profit margin. All other budgets, including direct, indirect and contingency are included at the activity or string of activities basis. And when the Schedule of Values is created, the unit prices INCLUDE the contractors profit margin

8.a.(4).c. In the event that future contract effort cannot be defined in sufficient detail to allow the establishment of CAs, is the remaining budget assigned to the lowest practicable WBS level elements for subsequent distribution to CAs?

Not Applicable- Under firm fixed price contracts, using standard AIA, FIDIC or EJCDC contract templates, there should be no change orders which are not priced out, a schedule impact performed and signed by both the contractor and the owner. By definition, there can be no future work (change orders) which do not have a control account assigned down to the activity level.

8.a.(4).d. Does the supplier require sufficient detailed planning of CAs to constrain the application of budget initially allocated for future effort to current effort?

Not Applicable- For the hard money contractor, the control account is the activity and the responsibility for planning at the activity level is the contractors and the contractors alone. As the price of the contract was agreed to before the start, if there is any additional work which was missed by the owner, then it gives rise to a change order from the contractor. If the contractor missed a scope of work which was defined, then that cost over-run comes out of the contractor's profit margin. This does apply to the owner however.

9.a.(1). Does the budgeting system contain the total budget for the contract (including estimates for authorized but unpriced work)?

Not Applicable- Under most firm fixed price contracts, there is no "authorized but unpriced work" even for change orders, unless of an emergency nature.

12.a Are time–phased budgets established for planning and control of level of effort activity by category of resource; for example, type of manpower and/or material? (Explain method of control and analysis.)

Not Applicable- For a firm fixed price contract, there are no "level of effort" activities. Every single activity has a budget and that budget is managed aggressively by the contractor in order to protect the slim margins. Even project and home office overhead have a budget and the BCWP is calculated based on the overall physical per cent complete of the project itself.

12.b Is work properly classified as measured effort, LOE, or apportioned effort and appropriately separated?

Not Applicable- In a firm fixed price contract, at least from the contractor's perspective, there are no level of effort activities. LoE activities may be used by owners, but with single digit EBIT margins it would be suicide for a contractor to allow such open ended budgets. (money and time expand to fill the amount allotted)

12.c Is LOE held to the lowest practical level and budgeted on a time–phased basis?

Not Applicable- See comment above.

13.d. d. Are overhead budgets and costs being handled according to the disclosure statement when applicable, or otherwise properly classified (for example, engineering overhead, IR&D)?

Not Applicable- In a private sector, firm fixed price contract, both the project overheads (General Conditions Requirements) and the contractors Home Offices Overhead (GS&) are embedded into the price of each and every activity. However, internally, the contractor has these broken out and does in fact monitor and control them very closely.

25.c. Are data elements reconcilable between internal summary reports and reports forwarded to the Government?

Not Applicable- Under firm fixed price contracts, contractors are not obligated to reconcile their internal reports with those provided to the client.

27.h. Are estimates of costs at completion utilized in determining contract funding requirements and reporting them to the Government?

Not Applicable- For private sector contractors working under a firm fixed price contract are continuously making these projections, using them for cash flow management purposes, this information is not shared with the owner. However, the prudent owner is also doing the same, understanding that the owners' costs and the contractor's costs will never be the same. The owners' costs, due to their own overhead, contingency and owner supplied equipment will always be higher than the contractors numbers. While the contractors costs are the difference between what he bills (the BCWP) and that the contractors ACWP is, which the owner is not privileged to see.

27.i. Are the supplier's estimates of costs at completion reconcilable with cost data reported to the Government?

Not Applicable- see previous comment. The contractor is not obligated to provide the owner with his/her Estimate At Completion.

28.c. . Are internal budgets for authorized, but not priced changes based on the supplier's resource plan for accomplishing the work?

Not Applicable- Again, the contractor's internal budgets are confidential and proprietary information, and in a firm fixed price contract, normally, there are no authorized but unpriced changes, unless the work was authorized on a time and material basis, which is rarely done except in emergency situations.

28.d. If current budgets for authorized changes do not sum to the negotiated cost for the changes, does the supplier compensate for the differences by revising the undistributed budgets, management reserves, budgets established for work not yet started, or by a combination of these?

Not Applicable- Under firm fixed price contracting in the private sector, AIA, FIDIC and EJCDC standard documents all discourage work on change orders being started before a formal written change order is in place, including pricing and time impacts.

30.b. Are direct or indirect cost adjustments being accomplished according to accounting procedures acceptable to DCAA?

Not Applicable- First, in the world of hard money contracting in the private sector, unless ordered by a court or arbitration hearings, the direct and indirect costs incurred by the contractor are proprietary and confidential information which the contractor does not have to disclose to the owner. However, nearly all contractors has some form of Activity Based Accounting System in place to enable them to use the actual costs and productivity information from today's project as the basis to develop a cost estimate and schedule for tomorrow's bid.

RECOMMENDATION #5- In project management, "God (or the Devil) lies in the details". It is impossible to manage projects at level 3 or higher of the WBS. If projects are to be successful, then the focus must be at the ACTIVITY level, and everyone involved, from the program sponsor to the program manager, to the project sponsor to the project manager to the fore people on the project MUST be held accountable for the work they are responsible for AND they must be provided with sufficient authority commensurate with that responsibility if there is to be any accountability.

And when we talk of accountability, it means a person can be terminated for failing to deliver on time and within budget and on the other side, compensation is linked substantially to performance against the approved plan.

HOW PRIVATE SECTOR, HARD MONEY CONTRACTORS VIEW EARNED VALUE-

Earned Value from the contractors' perspective serves two primary purposes:

1) It serves as the primary means to manage our cash flows, and
2) It serves as the basis to perfect/prove claims against the owner and/or defend ourselves against claims from the owner or our subcontractors.

Earned Value is not rocket science. It is nothing more than applied common sense. There is not a single person who does the family grocery shopping who does not apply the fundamentals of Earned Value.

As we can see from illustration 1, to be effective, the "consumer" ("owner" or "buyer") must have an understanding of what the fair market value is for a given good or service. Then through the "hard money" (firm fixed price) bidding process the owner or buyer selects the "best value". Through the Schedule of Values (a required submittal from the contractor to the owner) in order to get the Notice To Proceed (NTP) the contractor is required to provide the owner with the unit in place costs of all the major deliverables. As the work is completed, the contractor (seller or "green grocer" in this example) is obligated to prove to the buyer/owner that the quality of the product the contractor is selling meets the acceptable quality standards. (In construction, the contractor also has to prove that the work has been done in substantial conformance to the contract requirements- how the contractor/seller has fulfilled the shall clauses in the contract).

The important part which seems to be missing in the ANSI 748 and NDIA is the clear link between performance and payment. Yes, supposedly it is there, but the linkage is not clear enough. Given that contractors live and die by our cash flows, the key to implementing or "selling" earned value to contractors is to make a clear and unequivocal link between performance and prompt payment.

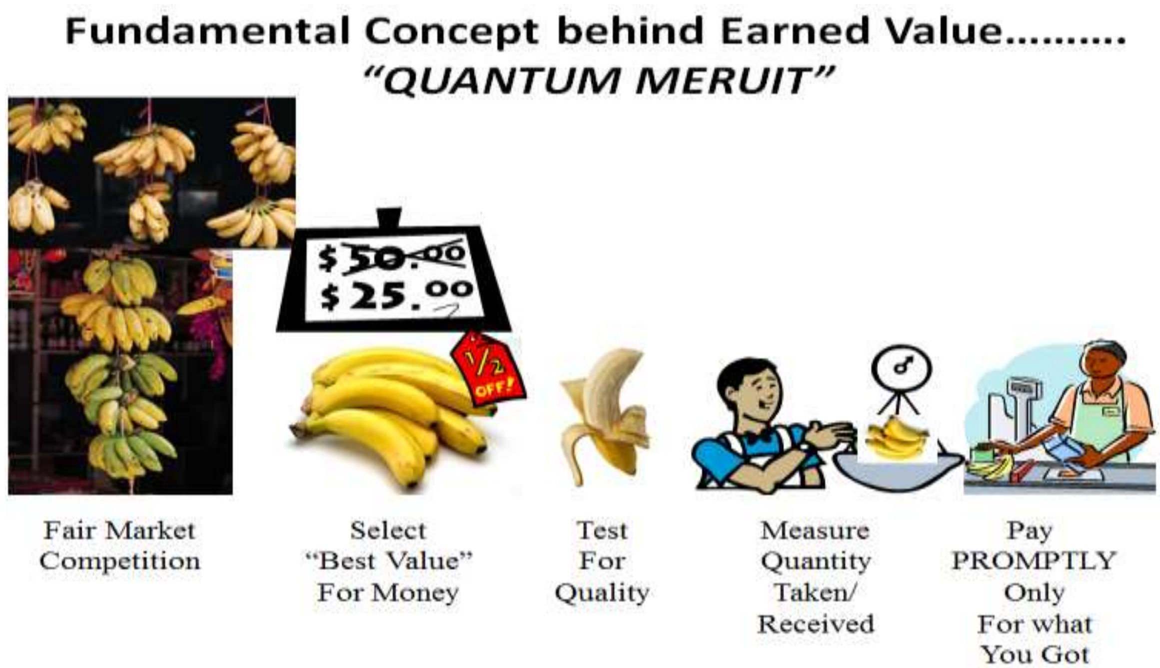


Illustration 1- Earned Value from the Private Sector Contractor's Perspective[7]

From the claims perspective, given that the unit prices have to be provided by the contractor to the owner ("Schedule of Values") in order to get the "Notice To Proceed" (NTP), it provides the contractor with a handy means of comparing the "as bid" costs to the "as built" costs and, providing the contractor can show a causal relationship between the owner's actions (or lack of), it provides a handy means of calculating damages. Also, the use of the Earned Value Performance Measurement Baseline (PMB) is helpful in showing the impact of schedule delays.

[7] Giammalvo, P.D. (2013) Slide from Advanced Earned Value Management Course Handouts

TO SUMMARIZE-

This paper was not designed to be an attack on any agency or organization. The US and state governments are facing serious difficulty and every citizen has the obligation to step up and offer constructive criticisms and suggestions as to how to fix the problems. There is and must be a "sense of urgency" to implement these fixes, and this author stands ready to contribute to the dialog. The following are a "call to action" on the part of others who are passionate about earned value as a core project management tool.

The primary objectives of this paper were:

1) Compare how the private sector uses EVM vs the 32 NDIA criteria;
2) Analyse what the differences are and;
3) Propose possible improvements to ANSI 748 based on how entrepreneurial contractors use EVM.
4) To serve as the basis for a more balanced dialogue.
5) Another option is to use this research as the basis to create a SCALABLE model of Earned Value rather than a "one size fits all" solution.

Out of a total of 179 questions or "tests" posed by NDIA, 157 or 88%, the private sector, firm fixed price contractors substantially complied with the intent of the NDIA Guidelines. Only 3 instances (1.7%) did the private sector NOT follow the guidelines and in only 3 instances (1.7%) did the private sector contractors comply in part, but not completely. And of the 179 questions, 16 of them were unique only to government contracting- processes which are not relevant to the world of private contracting.

Backing those 16 out of the total, gives us a total of 163 remaining which are relevant. And of those, 157 the private sector does comply with. This means 157/163 = 96% compliance score. What this says is for the most part, private sector contractors, bidding on firm fixed price contracts under the traditional "Design>Bid>Build" model do follow ANSI 748 very closely. The primary difference being HOW they do it- using a less bureaucratic, formal system and; the primary purposes are cash flow management and claims management.

If people can accept that the private sector does use earned value in much the same way that ANSI 748, in substantial conformance to the NDIA Intent Guide, then it should open the door to a broader and more productive dialog about how whether it is possible to develop a less bureaucratic version of EVM which will work for EVERYONE or whether there has to be more than one "version" or adaptation of Earned Value, one which is scalable, based on contract type and project complexity.

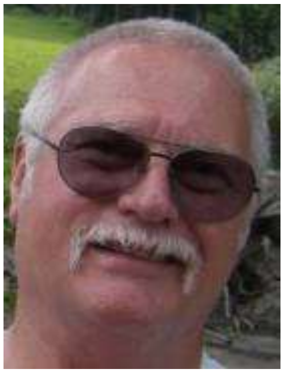
NEXT STEPS-

This paper was published with the objective to create some healthy debate about what the Government can do to simplify Earned Value Management and how other private sector contractors might be able to adapt what is contained in this analysis as the basis to create a more "user friendly" version of Earned Value- not "Earned Value Lite" but perhaps more appropriately referred to as "Scalable Earned Value"- that is, a model which does not contain the 16 bureaucratic attributes, unique only to government projects, but contains the essential components necessary to remain competitive yet still make sufficient profit to be able to survive.

APPENDIX A – NDIA INTENT GUIDELINES AND QUESTIONS

To read, go to: http://www.build-project-management-competency.com/download-page/
Bottom most bullet point.

About the Author



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For 20+ years, he has been providing Project Management training and consulting throughout South and Eastern Asia, the Middle East and Europe. He is also active in the Global Project Management Community, serving as an Advocate for and on behalf of the global practitioner. He does so by playing an active professional role in the Association for the Advancement of Cost Engineering International, (AACE); Construction Specifications Institute (CSI) and the Construction Management Association of America, (CMAA). 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 in the International Guild of Project Controls. http://www.planningplanet.com/guild

He has spent 18 of the last 35 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. Most recently, he worked as a Senior Project Cost and Scheduling Consultant for Caltex Minas Field in Sumatra and Project Manager for the Taman Rasuna Apartment Complex for Bakrie Brothers in Jakarta. His current client list includes AT&T, Ericsson, Nokia, Lucent, General Motors, Siemens, Chevron, Conoco-Philips, BP, Dames and Moore, SNC Lavalin, Freeport McMoran, Petronas, Pertamina, UN Projects Office, World Bank Institute and many other multi-national companies and NGO organizations.

Dr. Giammalvo holds an undergraduate degree in Construction Management, his Master of Science in Project Management through the George Washington University and was awarded his PhD in Project and Program Management through the Institute Superieur De Gestion Industrielle (ISGI) and Ecole Superieure De Commerce De Lille (ESC-Lille- now SKEMA School of Management) under the supervision of Dr. Christophe Bredillet, CCE, IPMA A Level. Paul can be contacted at pauldgphd@gmail.com.