



Info Tech Talk

A Journal on Enabling Information Technologies by the IRMC Organizational Transformation & Technology Dept.

Earned Value Management: Part One - New Applications for an Old Tool

Dennis C. Hall, Visiting Professor
Industry Chair

Inside this issue:

Communities of Practice Come to IRMC	4
Is Open Source Software Viable in the Federal Government?	5
Enterprise Instant Messaging – Bridging the World with Your Fingertips	6
Tech Trends in Teaching and Learning	12

Introduction

Earned Value Management (EVM) is either:

- A great management tool for your IT project
- A terrible management tool for your IT project
- All of the above

Surprisingly, any and all combinations are probably correct. Before I explain that statement, however, let's discuss EVM in general.

EVM has been around for some time. While its actual beginnings are somewhat murky, by the mid-1960's the basic principles of EVM were incorporated in DoD's "Cost/Schedule Control Systems Criteria" (C/SCSC). It has been employed in the development of most large DoD weapons systems since then and, more recently, has become the Office of Management and Budget's (OMB's) Performance Based Management tool of choice (cynics might say "du jour") for all major IT capital investments of the Federal Government.

As a concept, EVM is rather simple. It requires that you define all the work to be accomplished on a project; budget for each element of work; schedule all the work; and then measure results against the resulting plan (the baseline). If implemented correctly, it can use the progress to date on a project to estimate final cost and schedule at completion. It's hard to argue against that

concept. As is often the case, however, the devil is in the details.

Some managers have difficulty in accepting two underlying assumptions of EVM:

- ◇ EVM equates budget with value, that is, it assumes that each element of work that's delivered is worth the budget established for that work.
- ◇ EVM gives full credit for completed work, that is, it assumes a minimum quality standard has been met. What if the degree of quality is important?

The first concern is addressed by recognizing that the baseline performance for any period of time is the "Budgeted Cost of the Work Scheduled" for that period. Unfortunately, current terminology calls this the "Planned Value." Accept that it means the same thing. The budget that was established for that activity is by definition the value of that activity.

The second concern is, in fact, more valid. EVM assumes that an element of work is either completed, in which case full value is received, or not completed, in which case, credit is only given for the percentage of work completed. The measurement of quality is left to other tools.

While some managers have no problem accepting the concept of earned value, they nonetheless reject it as a practical tool for their project because:

(Continued on page 2)

[EVM] has become the Office of Management and Budget's Performance Based Management tool of choice for all major IT capital investments of the Federal Government.

Earned Value Management (cont.)

(Continued from page 1)

- ◇ It's too expensive.
- ◇ It's designed for cost based contracts, not my project (fixed price, level of effort, Time & Materials, etc).
- ◇ My work is too complex for such a simple tool, i.e., "we're special."

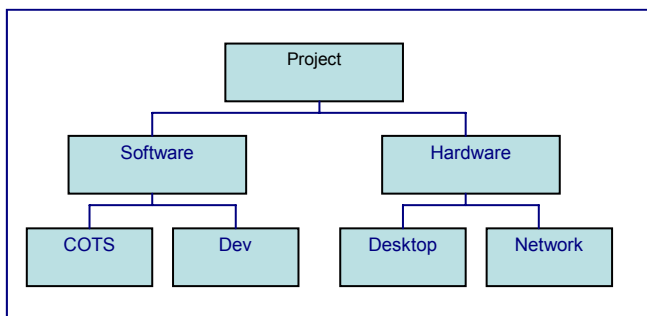
Whatever concerns project managers have, legitimate or otherwise, EVM is a fact of life and will be used to measure performance on major IT acquisitions. OMB has directed an aggressive implementation schedule for all Agencies and indicated intent to withhold investment approval where EVM is not used. DoD has directed its use on development programs exceeding \$20M life cycle cost and requires an audit of its contractors to insure full ANSI Standard 748A compliance whenever costs are expected to exceed \$50M. DoD has also indicated that these thresholds are under review. Other Federal Agencies have established considerably lower thresholds, as low as \$1M, and directed that it be applied to all major projects, including those with fixed price contracts.

Given that EVM is required (i.e., the debate is over), the focus now should be on a tailored application of EVM as one of several tools in the manager's tool-kit, using the fully compliant EVM where it makes sense, and using the basic concepts of EVM where a complete implementation is not warranted.

Implementation

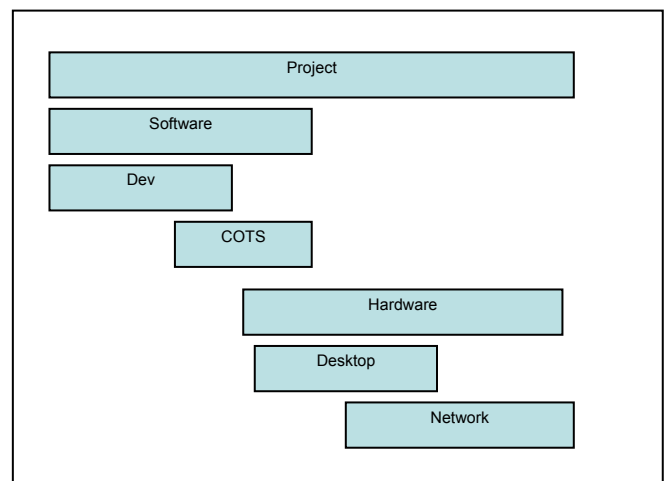
The implementation of EVM requires a series of deliberate steps.

Step 1: Identify all the products and services to be provided, including "indirect" services, such as project management, systems engineering, etc. This should be done using a work breakdown structure (WBS).

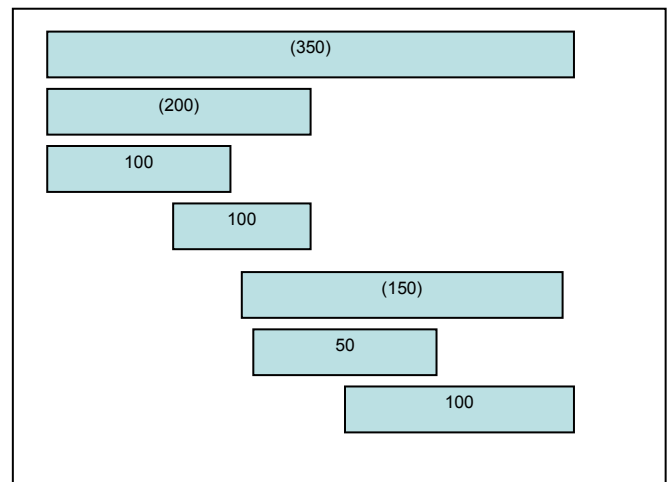


Step 2: Assign responsibility within the organization for all the elements of the work. The manager responsible for a particular element (or elements) of work is the Control Account Manager (CAM) for that work.

Step 3: Establish the duration of each activity and the relationships among the activities (e.g., must finish A before you can start B, cannot start C until you have started B, etc). From this, build the schedule. For projects of any complexity, an automated tool, such as MS Project, Prima Vera, or Artemis will normally be required.



Step 4: Establish detailed budgets for each of the tasks. This is normally accomplished by the CAM responsible for the task.

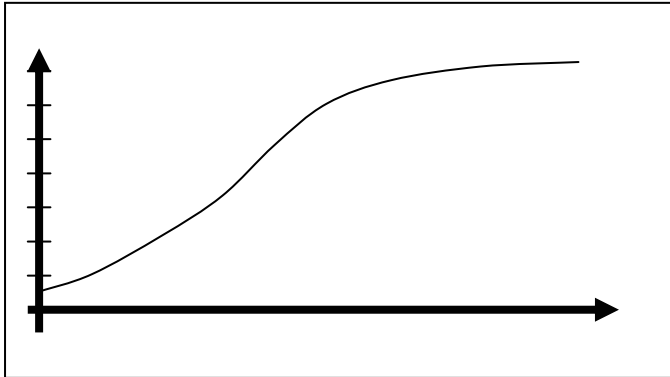


Step 5: Build the project performance measurement baseline (PMB). This represents the expected budget over the life of

(Continued on page 3)

(Continued from page 2)

the project and normally looks like an “S” curve.



This baseline combines the following elements:

- What work do we expect to do?
- When do we expect to do it?
- What do we expect it to cost?

Step 6: Measure results:

- What work did we accomplish?
- When was it accomplished?
- What did it cost?

Step 7: As the project is executed, compare the actual results with the baseline. From this, determine:

- the Cost Performance Index (CPI).
- the Schedule Performance Index (SPI)

The CPI is determined by comparing the budgeted cost of the work that's been completed with the actual cost of the work completed ($CPI = \text{Earned Value} / \text{Actual Cost} = EV/AC$).

The SPI is determined by comparing the budgeted cost of the work performed with the budgeted cost of the work planned ($SPI = \text{Earned Value} / \text{Planned Value} = EV/PV$).

Step 8: Using these indexes, predict future performance:

- What will the final cost be?
- How long will it take to complete all of the work?

The estimated cost at completion (EAC) is calculated using the project budget at completion (BAC) and the CPI. In its simplest form, $EAC = BAC/CPI$.

The estimated schedule at completion (SAC) is calculated using the planned schedule (PS) and the SPI. Again, in the simplest form, $SAC = PS/SPI$.

OMB now requires the submission of both the SAC and EAC with each Exhibit 300, and any negative variance of 10% or more will place a project on the “Watch List.”

Implementing EVM is not cheap. The cost, however, is not in the reports, as is often concluded, but in the accounting systems required to collect and track costs. In many cases, this is cost has already been paid since most large Government contractors have these systems already in place.

Benefits

To be frank, the major benefit of EVM is in the discipline it forces on the project. Among other things, it forces the manager to think through all the elements of a project, the detailed work that is required, the schedule to perform the work and the costs associated with the work. It prevents (or at least makes more difficult) the imposition of unrealistic costs and schedules.

EVM can provide an early indicator of project problems. While it, alone, does not indicate what the problem is, it will identify that a particular task or set of tasks is experiencing problems in meeting schedule and budget targets.

EVM can provide a vehicle for involving key stakeholders in the development and acceptance of a project's cost, schedule, and scope objectives.

EVM can also assist in determining just where and when to release management reserve.

Finally, EVM gives management a tool to determine which projects are likely to over-run their budgets and whether or not the expected benefits of the system are worth the additional cost.

Limitations

The project manager should recognize several limitations to EVM as normally implemented:

- ◇ **Schedule:** EVM does not recognize the critical path. It treats each task as equally important to the schedule. In fact, a delay in a task that is not on the critical path will not delay the overall project. This limitation can be reduced by developing an SPI for the critical path as well as the project overall.
- ◇ **Cost:** EVM assumes that the CPI for all tasks is the same. It does not recognize that cost over-runs (or un-

(Continued on page 11)

Communities of Practice

Come to IRMC

By Stan Boddie and Jay Alden

Communities of practice are a fast growing approach to increase individual and organizational performance effectiveness by sharing practitioner information, insight, and knowledge. Communities of practice emerged as strategic approaches to increase organizational performance effectiveness in the 1990s. After almost a decade of increasing use, recognition, and maturity, these growing communities are helping many organizations increase their performance effectiveness and achieve their business goals.

For example, you might have noticed those rumble strips on the interstate systems. The U.S. Department of Transportation National Highway Traffic Safety Administration (NHTSA) began installing the rumble strips as a result of collaborative discussions regarding highway safety in the NHTSA's community of practice website. The NHTSA reports the rumble strips are saving thousands of lives each year. Many private and public industry organizations recognize the value of communities of practice launched their own physical and/or virtual-based communities.

The Information Resources Management College joined the list of growing number of public sector communities of practice and launched the Information Resources Management (IRM) Community Center in 2005. The IRM Community Center supports the global community of government practitioners involved in IRM activities. IRM practitioners might view the IRM Community Center (Community Center) as a way to engage other IRM practitioners regarding government IRM activities. Community Center members can contribute and gain information, insight, and knowledge by asking questions and contributing responses to other practitioner questions. Members can share information, insight, and knowledge such as recent articles, newly published books, best practice guides, policy explanations, reports, and case studies. We hope members view the Community Center as a valuable resource through which to share IRM information, insight, and knowledge. Our desired outcome is that government IRM practitioners use the Community Center to improve their individual IRM performance effectiveness and, as a result, help improve their organization's IRM and overall performance effectiveness.

We cordially invite you to join the Information Resources Management (IRM) Community Center, which is hosted and managed by the National Defense University IRM College. We also encourage you to invite your business and

academic colleagues and your students to join and participate in the Community Center.

The IRM Community Center is free and open to all IRM practitioners involved with government IRM activities. The single requirement to join this growing community is to be involved with government information resources management. To join this growing community, please follow the procedures below:

1. Create an Account for the IRM Community.

Creating an account will give you read-access to the content in all of our communities and allow you to join as many of them as you wish. Your account will be approved if you are associated with Information Resources Management (IRM) in a government environment.



IRM
Community Center

- a. Go to <http://community.ndu.edu> and select "Sign-in" in the *Participate* menu.
- b. A *Sign In* page opens. Select "Don't have an account? Click here to create one."
- c. A *Create Account* page opens with places to enter your name, email address, password, and any biographical information you'd like to share with other members. Selecting the "Make my Email Address Public" box will allow other visitors to view your email address. If the "Make my Email Address Public" box is not checked, only the Chief Administrator can view your email address. Complete the form and confirm your relationship to IRM activities and/or functions in a government environment and select the "Create" button to submit your membership application.

You will receive acknowledgement of your membership request and status by email within one business day after submitting your membership request. If the Community Center administrators need additional information from you regarding your membership request, they will contact you by email.

2. Select Communities to Join.

When your membership request is approved and a membership account is established for you, you will be able to see all the information contributed in the communities

(Continued on page 9)

Is Open Source Software Viable in the Federal Government?

By Paul Flanagan

Introduction

The history of the Information Technology (IT) industry is short and hyperbole plays a significant role in this saga. IT history can be an odd concoction of technology, marketing, and folk-tale. At one time computers were large and expensive. Now they are commodities. As a result the beginning of 2006 might be an advantageous time for a government IT manager to examine or re-examine open source software (OSS), sometimes called the free software movement, and determine its worth to his/her organization.

Computer programming is the process of converting a step-by-step solution into computer code, thereby solving a business problem by using the computer. This is a challenging endeavor. Anyone who has ever attempted a programming course understands this basic fact. Most people who write computer code find this creative process easier and the resulting programs are better because of collaborating with their colleagues. Collaboration is a key for success.

Software as a Business

When personal computers changed the computer hardware industry, the computer software industry was forced to change at the same time. The current software industry was formed in the 1980's. Software vendors hired teams of talented programmers to write computer code in computer languages that programmers understand. Today, these computer languages are typically C, C++, and Java. This computer code, called "source code" is the vendor's intellectual property. Source code is converted or compiled into binary code or object code, which the computer executes. The resulting object code is the product that is distributed via licensing agreements to the customers or computer users. The creative and collaborative process of programming is internal to the development team.

OSS is Becoming Professional Quality

According to Wikipedia, "Open source software refers to computer software and the availability of its source code as open source under an open source license to study, change, and improve its design." (Wikipedia 2005) Essentially the source code is available for other programmers (not just the design team) to examine and/or change. Although the idea of open source software has roots that date back decades, current practices have changed the concept from an intellectual or academic pursuit into a professional practice. Thomas Friedman states, "The free software movement has become a serious challenge to Microsoft and some other big global software players." (Friedman, T. L. 2004)

Josh McHugh, in the cover story of the February 2005 issue of Wired magazine, reports that OSS is gaining market share in eight areas: browsers; desktop operating systems; databases; mail servers; web encyclopaedias; email client; web servers; and application servers. The most significant market share held by OSS is in the areas of web servers, where Apache software has 68% of the market, and databases, where MySQL has a 49% market share. (McHugh 2005)

Steve Hamm wrote about the open source Linux operating system in the January 31, 2005 cover story of Business Week. In that article Mr. Hamm described the early Linux movement as "a loosey-goosey effort with little structure or organization." The Linux community of today is described in that same article as "much more mature, organized, and efficient." Linux is no longer the product of part-time programmers, but the concerted effort of "thousands of professional programmers." (Hamm, S. 2005) These professional programmers are employees of high-performing Information Technology companies such as IBM and Hewlett-Packard.

It is clear that OSS is becoming more professional and business oriented. This type of software is no longer

(Continued on page 10)

Enterprise Instant Messaging – Bridging the World with Your Fingertips

By Wade Doenges, Maureen Pearson, Joel Rothschild,
Stephanie Spengler and Mickie Wiser

“Changing World of the CIO” Students

What is Enterprise Instant Messaging?

Instant messaging (IM) is the act of instantly communicating between two or more people over a network such as the Internet. The term Enterprise Instant Messaging (EIM) is the next generation of instant messaging where the technology is used within an organizational construct to deliver similar services and capabilities, thereby improving organizational communications. Instant messaging requires the use of a client program that hooks up an instant messaging service and differs from e-mail in that conversations happen in real-time. Most services offer a "presence awareness" feature, indicating whether people on one's list of contacts are currently online and available to chat. Most instant messaging applications also include the ability to set a status message, roughly analogous to the message on a telephone answering machine. EIM is the result of the acceptance, by businesses and government organizations, of technology that is in wide use in the public sector. It has the potential to revolutionize corporate communications.

Popular instant messaging services on the public Internet include Qnext, MSN Messenger, AOL Instant Messenger, Yahoo! Messenger, Google Talk, .NET Messenger Service, Jabber and ICQ. These services owe many ideas to an older (and still popular) online chat medium known as Internet Relay Chat (IRC). (Wikipedia)

Benefits

The primary benefits of implementing EIM revolve around the increased efficiencies of the worker sitting at his desk, using his computer to communicate. He will be able to collaborate on the fly when information is needed, coordinating tasks and getting answers to questions much quicker than with normal email. He won't need to schedule a meeting ahead of time, or schedule a meeting room, or worry about the availability of a phone or video bridge. He will be able to look at his screen and know if the people he needs are available, reducing both phone tag and email tag. He will be able to communicate with one person or a group of people at his site or anywhere on the network, depending on how EIM is implemented. He will be able to have multiple conversations at once; as an example he can hold an IM session at the same time he is on the phone.

With the advent of collaborative software incorporating both IM and document sharing, the benefits for the organization

could include a reduction in unnecessary travel, saving on travel expenses. Workers can “meet” together as often as necessary, whether they are in an office, on a client site, or at home in their pajamas. This can lead to increased quality of work due to increased availability of skilled personnel. One of the authors is actually doing this today using the Groove application to coordinate service delivery and share key stakeholder requirements across a collaborative multi-firm teaming. From locations in Japan, Hawaii, San Diego, Chicago, Bahrain and Naples, people are able to work with a shared voice, and without track/edit changes being necessary on the documentation.

Challenges

These potential benefits will not be realized without first addressing significant issues and challenges. IM is a vulnerable technology that needs significant security management. Security measures need to include protection against viruses, worms, phishing attacks, spyware, malicious code, spam (called “spim” for IM), and other security vulnerabilities. The organization needs to ensure the infrastructure is protected using firewalls and similar safeguards and likely include encryption of the EIM traffic.

As with many new technologies, there is a lack of recognized standards. In addition to addressing security and infrastructure issues, the organization needs to address the IM conversations themselves. Regulations such as HIPAA require businesses to save and store digital information. IM conversations are business records, needing to be saved and archived like email, raising potential electronic records management issues. Storing the IM conversations leads to privacy issues. When the IM session is initiated, do participants need to be notified the conversation will be saved? Can the conversation later be divulged without the participants' consent? Can these issues be addressed in the same manner as electronic mail accounts? Is the only way you can use EIM applications is to consent to their monitoring?

The organization needs to have guidance and policy in place for the use of EIM in the workplace. It has the potential to reduce productivity; workers can spend working hours carrying on personal conversations. EIM sessions are by nature more informal than email, workers need to be careful to not divulge sensitive information in the course of the session. Training and policy are essential to address the control of sensitive information and inappropriate conversations. In

(Continued on page 7)

(Continued from page 6)

addition, EIM can be a psychological challenge for some workers who are not comfortable with technology, and may resist using it; or a nuisance with multiple chat sessions appearing on the business computer at inappropriate times.

EIM Use in Government and Military Environments

In the current era of widely dispersed government agencies and worldwide military deployments, it was only a matter of time for an EIM solution to take hold. Government agencies have a critical need to share timely information and interact with other agencies around the world in near real-time. At Headquarters United States European Command (EUCOM), the commander, EUCOM staff and component planners conduct online planning sessions using InfoWorkSpace which is an enterprise suite of collaborative tools containing an integrated instant messaging client. Face to face meetings are kept to a minimum, which has helped to reduce the travel budget of the Command. In this time of shrinking resources this has been of great benefit.

The most visible use of an EIM solution is on the Army and Air Force portals. The Army portal, also known as Army Knowledge Online (AKO), is reported to be the largest online community in the world. An IM solution was incorporated into AKO to enable soldiers and their families a means of communicating during deployments and separations. The Air Force is using their IM solution to collaborate on issues and is looking to use it as a means of conducting “town hall” meetings in the future. Both the Army and the Air Force use the Bantu EIM Platform as their IM solution. Bantu is also being used by the Navy, Homeland Security and the State Department, with discussions of using Bantu to allow EIM across the services (Kenyon, 2004).

Performance Metrics- - How do you Measure Success?

For EIM solutions to be considered successful it is important to measure their performance in relation to established metrics. These metrics must provide timely and precise statistics showing system usage and areas requiring attention from the IT staff. In an article in the *Internet Journal* titled, *Treating Messaging as Critical*, five performance metrics were proposed as important for measuring messaging systems. They are delivery time, storage utilization, messaging utilization, server activity and top destination domains. Not all of these metrics are applicable to EIM systems. The most relevant to EIM systems are:

- ◇ Delivery Time measures how long a message takes to get from one user to the next. By definition, instant messaging means near real-time collaboration. If the IM system is not meeting the delivery thresholds then service levels are not being met and the problem needs to be identified and solved.
- ◇ Messaging Utilization measures user usage levels and

can help to determine high volume users and identify problems and enable trend analysis on system capacity.

- ◇ Server Activity measures the processing time for messages at the server. This is most relevant for email messaging services, however if the IM system is loaded on its own server, monitoring the server activity and performance will help to identify trouble areas and potential areas for improvement.

Another metric which can help to predict performance is peak usage time, which helps to determine required capacity for the system at various times of the day. If you find that users overload the IM system at a certain time of day then either capacity needs to be increased for that time period or a policy needs to be established which regulates usage during recognized peak hours.

Any metrics that are used need to be customized based upon the needs of the organization and expectations of levels of service. It is important to not only collect performance metrics, but also to regularly review the metrics and take any necessary action to improve performance, solve problems or plan for future expansion if system capacity is exceeded.

EIM -- The Future

If the collaborative effort of the US Army and Air Force, in conjunction with Northrop Grumman and Bantu (Kenyon, 2004), is any indication of the future of EIM, it shows that not only will EIM continue to thrive within business walls; it will be used across boundaries. Deploying secure, “interdomain” messaging capabilities will allow the Department of Defense to set up forums, user groups and chat rooms for specific missions and tasks. It also can restrict users from having inappropriate access to “User Lists” if there is no distinct need to know.

Corporate America is also riding the wave of EIM. Research done by IDC reports that sales of EIM applications have risen 37 percent this year alone (Boulton, 2005). IDC also reports that the EIM market will at least double between 2005 and 2009, with sales of EIM servers and services rising to \$736 million (Boulton, 2005). America Online, Yahoo, and Microsoft are all selling EIM tailored versions of their messaging services, and businesses are buying (Hu, 2002). What began as large companies employing a hybrid of free instant messaging products and their own administrative tools (*Instant Messaging Gains Corporate Success*, 2002) has evolved into an industry that maximizes global knowledge sharing.

Conclusion

Enterprise instant messaging, although initially resisted by businesses and government alike, is a system that has grown and enveloped our “must have this now” society, and is being deployed as a method to continue streamlining the efficiencies of our e-government. Collaboration, formerly done with expensive trips and summits, can now be done with some-

(Continued on page 8)

Enterprise Instant Messaging (Cont.)

(Continued from page 7)

thing as simple as a computer and a phone line.

There are issues that need to be addressed, largely in the realm of security, but corporations like Bantu, Microsoft, Dell, IBM, FaceTime, IMLogic and Akonix are working to address them. The organizations deploying these systems across their enterprises are also working on developing the policies and procedures for use and monitoring. With mitigations in place, it would seem that EIM is here to stay.

Any organization that has a presence and wants to be able to capitalize on instantaneous information sharing and collaboration needs to invest in EIM.

Note: No endorsement of any products mentioned in this article is expressed or implied.

Bibliography


- Bantu instant messaging extends award-winning U.S. Army portal's real-time capabilities: U.S. Army intranet wins DCI's portal excellence award for strategic collaboration and knowledge sharing.* (2003, May 6). Retrieved October 20, 2005, from <http://corp.bantu.com/releases/2003.5.6.akoaward.php>
- Bantu selected by Northrop Grumman to provide enterprise instant messaging for U.S. Department of State's messaging and archive retrieval system.* (2004, February 2). Retrieved October 17, 2005, from <http://www.marketwire.com/mw/iwprf?id=62456>
- Biggs, M. (2003). Managing the message. Retrieved October 20, 2005, from the June 2, 2003 issue of Federal Computer Week.
- Booz Allen chooses AT&T to build global network.* (2004, May 24). Retrieved October 17, 2005, from <http://www.tmcnet.com/usubmit/2004/may/1042966.htm>
- Boulton, C. (2005). IDC: IM use is booming in business. Retrieved October 17, 2005, from <http://www.enterpriseitplanet.com/networking/news/article.php/3554901>
- Crowe, G. (2005). Enterprise IM made easy. Retrieved October 20, 2005, from the October 10, 2005 issue of Government Computer News.
- DeJesus, E. X. (2005). Just like being there. Retrieved October 20, 2005, from the August 22, 2005 issue of Government Computer News.
- Edwards, J. (2002). Sending a message: Instant messaging software goes corporate. Retrieved October 17, 2005, from the November 1, 2002 issue of CIO magazine online.
- Hu, J. (2002). AOL offers corporate messaging. Retrieved October 19, 2005, from http://news.com.com/2102-1023_3-964402.html
- Instant messaging gains corporate respect.* (2002, August 19). Retrieved October 21, 2005, from <http://www.networkworld.com/news/2002/0819apps.html>.
- Jackson, W. (2004). Air Force abuzz over instant messaging app. Retrieved October 20, 2005, from http://www.gcn.com/23_13/tech-report/26102-1.html
- Kenyon, H. S. (2004). Army, Air Force merge instant messaging system. Retrieved October 20, 2005, from <http://www.afcea.org/signal/>
- Seffers, G. I. (2001). Army to get instant messaging. Retrieved October 22, 2005, from <http://www.few.com:8443>.
- Spafford, G. (2004). Treating messaging as critical. Retrieved October 20, 2005, from http://www.intranetjournal.com/articles/200402/ij_02_04_04a.html
- Sternstein, A. (2005). NASCIO: Keep IM on enterprise. Retrieved October 20, 2005, from the May 31, 2005 issue of Federal Computer Week.
- Sweeney, T. (2005). Instant message lockdown. Retrieved October 20, 2005, from the July 25, 2005 issue of Federal Computer Week.



Communities of Practice (Cont'd)

(Continued from page 4)

forming the IRM Community Center. However, you may not participate in discussions or share materials with other community members until you become a member of that community. By becoming a “member” of a community, you may contribute information, insight, and knowledge as well as observe the shared community knowledge. As a Community Center member, you may join the communities in which you have interest.

- a. All of the available communities are listed in the Community Explorer menu at the left side of the “IRM Community Center” web page (e.g., *Enterprise Architecture, Information Assurance, IRM Strategic Planning, Information Technology Project Management, or Organizational Transformation*). Select the name of the community(ies) that you’d like to join.
- b. A “Request Membership” page opens. Enter a brief reason for requesting membership in that particular community and select the “Request” button. You will immediately see a page that informs you that your membership request has been accepted and that your request is being processed.
- c. Select the  link in the *Community Explorer* that takes you to the top level “IRM Community Center” web page. Then, repeat steps “a” and “b” for all other communities you’d like to join.

3. Elect Your Membership Subscription.

If you take no further action in setting up your membership, you will need to access the IRM Community Center website and browse the various communities to see recent postings. However, the Community Center can notify you of activity that occurs in the Community Center. You can elect how to be notified automatically of Community Center activity by:

- **E-mail Notification:** Whenever new information is contributed in a community for which you are a member, a short message is immediately sent to your email address of record. To access the new Community Center information, you will only need to select the hyperlinked portion of the e-mail. After clicking on the hyperlinked information, you will automatically access the Community Center and be able to access the new information. You then also will be able to respond to the new information.
 - **Inbox Notification:** Each account holder has an “Inbox” in the IRM Community Center website that is visible when they view their personal page. This Inbox will have a listing and a link to all new postings that have recently been contributed by other members in all the communities in which you are a member.
 - **E-mail and Inbox Notification:** Whenever new information is contributed in a community for which you are a member, you are sent an email message and a listing and link is placed in your Inbox on the website.
- We encourage you to elect automatic notification subscriptions for each community of which you are a member.
- a. Go to the top level community page for which you are a member (e.g., *Enterprise Architecture*).
 - b. Select the “Subscribe to the Community” in the *Participate* menu or select the word “Subscribe” next to the name of the community near the top of the page.
 - c. A Subscription box opens. Click on the pop-up menu and select one of the three available subscription types available (i.e., *Email, Inbox Notification, and Email & Inbox Notification*). You may change the form of notification at any time in the future.
 - d. Notification will then on be made according to your selection whenever a topic is added, a contribution is added, a discussion is replied to, or a discussion is started. More detailed customization of the type of contributions for which you want notification is possible by clicking on the “details” button.
- If you’d rather not receive any notification of new contributions, just omit this step.
- That’s it! Take these three steps and you’re a part of the IRM community Center. Further instructions on getting around and using the IRM Community are available on the website.
- Please let us know if you have any suggestions for making the Community Center more beneficial or if we can help you make more effective use of the Community Center services.

Open Source Software (Cont.)

(Continued from page 5)

the purview of academicians and “part-time” programmers. OSS can and should be taken seriously. There is an effort called the Business Readiness Rating™ which hopes to help companies effectively evaluate OSS for enterprise use. (Business Readiness Rating™) Serious programmers at many top technology firms are devoting their time and talent to improving the software and the software infrastructure that supports their organizations. These are high performing companies where even small amounts of down-time can be highly expensive and detrimental to their operations. It is these types of organizations that are using and providing credibility to the OSS movement.

Security Concerns Become a Software Quality Criterion

Most people who simply use computers as a tool to complete their jobs have little interest in the methods used to create computer software. However, even casual computer users are becoming increasingly concerned with the protection of their computers, the software that resides on their computers, and, most importantly, their valuable data. Concerns over Information Assurance cause end users to learn about and apply security patches to software, and to frequently update their anti-spy ware, anti-virus, and firewall software. These actions place end-users in the uncomfortable role of systems administrators for their personal computer. Most end users would gladly abdicate this role given the choice. Such security concerns have added to the popularity of the open source browser call “Firefox.”

Whether the concerns about the current state of software quality are rooted in security, or economics, or any other concern, are well founded or not, has almost become a moot point. To most people (including most government workers) the computer is the tool that helps them accomplish their

jobs. These people want to focus 100% of their efforts on their mission and they want the technology (computers) to make their lives and their jobs easier. They want reliable and dependable computers and they have little patience for technology that hinders them. The burden of fulfilling these expectations falls squarely on Chief Information Officers and Information Technology managers. OSS is proving in industry to be viable and it may be a viable tool for meeting user expectations in the government.

Conclusion

Can best-selling authors, technology and business magazines, and high technology firms be wrong? Yes, they can, but possibly open source software is a concept whose time has arrived. In 2006 most industry analysts acknowledge that computer hardware has evolved into is a commodity. Traditional software methods are changing also. Is OSS a way to deliver Information Technology that actually helps people? The answer to this question is still to be determined. However, OSS is a promising technology that has strong advocates in the IT industry and it is beginning to develop a track record. OSS is worth investigating!

Sources:

Business Readiness Rating™, <http://www.openbrr.org/> retrieved on 2006, January 3.

Friedman, T. L., (2004), *The World is Flat*, New York, NY, Farrar, Straus, and Giroux.

Hamm, S., (2005, January 31). *Linux, Inc.*, Business Week, 60.

McHugh, J., (2005, February) *The Firefox Explosion*, Wired, 90 – 96.

Wikipedia, <http://www.wikipedia.com> retrieved on 2005, December 6.

Earned Value Management (cont.)

(Continued from page 3)

der-runs) in labor intensive tasks may or may not be the same as cost over-runs in (or under-runs) in material or subcontractor related tasks. This limitation can be reduced by developing separate CPI's for labor-intensive, material-intensive and subcontracted tasks.

- ◇ **Quality:** As mentioned earlier, EVM does not address the quality of the work performed. This is probably better addressed by the use of incentives that are held in a program reserve, similar to the approach taken on performance based service contracts.
- ◇ **Other:** EVM does not, by itself, differentiate between poor planning and poor execution.

Special Applications of EVM

LOE: Some work, such as project management, is driven by the calendar rather than by a specific deliverable. This is usually referred to as level of effort (LOE). For example, the cost of project management for 24 months is generally twice the cost for 12 months. Therefore, when deliverables slip, even though the cost of the deliverable may not change, project management must extend to cover the period of slippage. Therefore, the EAC for LOE work should be modified to include the additional period of performance that may be required during the slippage. A suggested calculation is:

$$EAC_{LOE} = AC_{to\ date} + CPI_{LOE} * (schedule_{forecast} / schedule_{original}) * (BAC - EV)$$

The EAC for the deliverable-related tasks would be calculated in the normal manner.

Fixed Price: While EVM was developed to support cost based contracts, the concept can be applied in a fixed price environment. From a schedule standpoint, EVM can be applied in the normal manner with an estimated schedule at completion calculated in the same manner as normal, i.e. $SAC = PS/SPI$. The discussion normally ends here in that for a fixed price contract, the customer can consider that $AC = EV$, meaning the $CPI = 1$. However, it must be recognized that there is probably no such thing as a fixed price *project*. There *are* fixed priced *contracts* within a project. Therefore, the CPI for a project should be the (Earned Value) / (Earned Value + Cost of Contract Changes that do not reflect changes to project scope).

Indefinite Delivery/Indefinite Quantity (ID/IQ): When the estimated task order on an ID/IQ contract exceeds the Agency threshold for EVM, then normal EVM procedures can be applied. Even under that threshold, less than full EVM can prove beneficial. For example, an ID/IQ task order involving six months or more can very likely be broken down into separate elements of work, each of which will have specific work to be performed, budgets and schedules. Given normal billing cycles, however, it might be best to use estimated-actuals (accrued costs) on tasks of less than six months duration since actual costs may not be known until several months after work is performed.

Conclusion

So, what is the answer to our original question? Is EVM the best thing since sliced bread, the worst thing since sliced bread, or something in-between un-sliced bread, perhaps?

We don't criticize a hammer because it's not a screw driver. Therefore, we should not criticize EVM because it's only one of several tools that PMs need to improve project performance. When used correctly, it can be invaluable in monitoring and controlling an IT project... and well worth the cost.

[EVM] is only one of several tools that PMs need to improve project performance. When used correctly, it can be invaluable in monitoring and controlling an IT project... and well worth the cost.

Tech Trends in Teaching and Learning

By Les Pang

Open source virtual learning environments – One example is Moodle, a free course management system designed using pedagogical principles to serve educators in creating online learning communities. This package is gaining popularity among universities, perhaps as a backlash to the growth of costly learning management systems. <http://moodle.org/>

Blogs – This novel method of online collaboration and exchange is becoming a part of many educators' teaching practices. Generic ways of using blogs can be found at: <http://escrapbooking.com/blogging/tl.htm>

Podcasting – Instructors and administrators are creating podcasts of student work and school activities. Examples of podcasting within the K-12 learning environment can be heard in Bob Sprankle's online class: <http://bobsprankle.com/blog/>.

Low-cost Laptops - The MIT Media Lab announced the concept of a \$100 laptop last year to address the digital divide issue facing developing nations. This concept has the potential of making a significant impact on education in these countries. <http://laptop.media.mit.edu/>

Gaming – The University of Texas–Austin, the University of Southern California, and MIT are busy developing games for use by schools, businesses, and governments in order to bring the concepts of digital game technologies into the learning landscape. A sample game from University of Texas' Digital Collaboratory can be viewed at: <http://www.nerogame.org/>

Open Source Browser - Firefox, which is less a hacker target than Internet Explorer, offers an alternative to students accessing educational resources. The current version protects against viruses, spyware and pop-ups, and works with blogging software. <http://www.mozilla.com/firefox/>

Instant Messaging – The ability to do real-time messaging through computers or mobile devices can permit students and faculty members to stay connected particularly while multi-

tasking. Current technology now permits users to transmit images, audio and video files, as well as other types of attachments.

Web-based Applications - Someday students may no longer need to acquire a suite of office software and install it on their computer. Check out Writely (<http://www.writely.com/>), a web-based word processor.

Wireless Networks – Self-configuring and self-healing, mesh networks require just a single access point. With its longer range and higher bandwidth, WiMax will also improve mobility on campuses over the current WiFi standards.

Convergence of Learning Management Systems – The Blackboard takeover of Web CT is an indication that these learning systems are consolidating and perhaps standardizing. Blackboard may become the “Microsoft” of learning management systems. <http://www.blackboard.com/us/index.aspx>

References

EDUCAUSE Learning Initiative (2005). 7 Things You Should Know About... Retrieved from: <http://www.educause.edu/7ThingsYouShouldKnowAboutSeries/7495>

Valenza, Joyce Kasman (2006). The Top 10 Technology Trends Affecting Education in 2005. Retrieved from: <http://www.philly.com/mld/inquirer/business/13573401.htm>

Neas, Bonnie (2005). Tomorrowland: When New Technologies Get Newer. Retrieved from: <http://www.educause.edu/apps/er/erm05/erm0560.asp>

INFORMATION RESOURCES MANAGEMENT COLLEGE

The World Leader in Information Resources Management Education

300 5th Avenue Marshall Hall (Building 62)
Fort Lesley J. McNair, DC 20319
(202) 685-2096
<http://www.ndu.edu/irmc/>

Director: Dr. Robert Childs

**Dean of Faculty & Academic
Programs: Dr. Elizabeth McDaniel**

**Chair, Organizational
Transformation & Technology
Department : Dr. Judith Carr**

Newsletter Editor: Dr. Les Pang

“The views expressed in this publication are those of the authors and do not reflect the official policy or position of the National Defense University, the Department of Defense or the U.S. Government.”

Here's Our Web Address!!!

<http://www.ndu.edu/irmc/elearning/infotech.html>

CHECK OUT OUR PREVIOUS ISSUES!