

SENSOR EVM GO BLUE

SENSOR launched an initiative 18 months ago which was called **EVM GO BLUE**. The reason for undertaking the **EVM GO BLUE** initiative was dictated by several factors. The most important was the *voice of the customer*. Specifically, the U.S. Air Force client, Electronic Services Command, was demanding a more detailed accountability in project metrics than has traditionally been available in government programs that employ earned value management (EVM). In particular, the government wanted to see EVM metrics that were more timely (i.e., weekly instead of monthly), accurate, and meaningful; plus, project schedules that were more realistic (i.e., resource-loaded project schedules) and executable; and finally, access to the same data that SENSOR project managers use to manage projects. In addition to the specific demands of the client, SENSOR management also saw that significant extra benefit was to be gained by:

- Implementing specific improvements in earned value management would also provide a *competitive advantage* that could be marketed in future proposals. Few companies practice earned value management with the rigor and discipline in SENSOR. Enhancing earned value management is a *marketable practice* which, in turn, creates *velocity in the marketplace* with respect to *winning more business*.
- Putting substance to the goal of making *Project Management a corporate core competency* (another marketable practice). Earned value management is a key tool of the project manager. Previous systems did not empower the project manager to employ earned value to the full extent possible. The SENSOR **EVM GO BLUE** initiative creates a *project manager-centric environment* that elevates the importance of the project manager.
- Realizing the goal of establishing a portfolio-level, Enterprise Project Management (EPM) environment. Practicing EPM has some important benefits. The most important is that the *top-down visibility into projects* facilitates the *most efficient use of corporate resources*. Secondly, the system of reporting and metrics migrates away from “spreadsheet purgatory” in favor of *automated, server-based reports* that provide a *greater degree of integrity and timeliness* than previously available.

Definitions:

EPM and EVM are intertwined and co-dependent concepts. *Earned value management (EVM)* is a management tool that integrates technical, cost, and schedule performance of projects. Understanding the earned value metrics of a project permits management to track project progress, and thereby make timely and informed decisions. The practice of EVM is an explicit part of the SENSOR contract. *Enterprise project management (EPM)* describes the interaction of specific systems, business processes, and personnel resources that comprise the program management environment. Actively practicing enterprise project management is a critical aspect of making the most effective use of total corporate resources.

About ITT Systems:

ITT Systems is a well known, established defense contractor that operates under ITT Corporation. In January 2002, ITT Systems was selected by the U.S. Air Force Electronic Systems Center/Strategic and Nuclear Deterrence Command (ESC/NDK) as the prime contractor for the System Engineering and Sustainment Integrator (SENSOR) program. SENSOR is an 18 year, \$1 billion program. The purpose of the SENSOR program is to sustain and modernize key Department of Defense ground-base missile warning and space control sensors around the world. The 400 (+) person SENSOR program is comprised of a dozen different teammate companies under the ITT Systems lead.

The SENSOR **EVM GO BLUE** initiative had to break new ground for ITT. It was necessary to establish new business practices to define the EPM environment. Once the business practices were defined, it was necessary to provision the organization with new personnel, plus re-role some of the old hands. Finally, specific systems had to be upgraded and some new systems procured.

Remodeling Practices

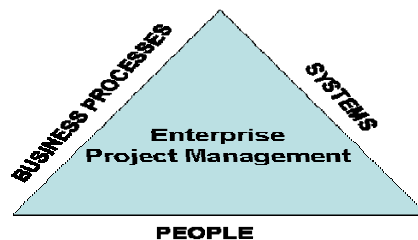
SENSOR underwent re-evaluation and change of the fundamental business processes related to EVM and EPM. One of the key aims was to automate as much of the Excel spreadsheet churn as possible. Other notable practices including redefining Control Account Manager (CAM) Notebooks, reconciling EVM and financial calendars, developing more coherent project change control procedures and project initiation procedures, revising processes for accruals and paper timecards, developing a common project templates library, migrating standard operating procedures (SOPs) into integrated operating procedures (IOPs), and restructuring the Work Breakdown Structure to map to Contract Line Item Number (CLIN) at the level of Element of Expense Investment code (EEIC) and Program Extension Code (PEC). Four separate Value Based Six Sigma Green Belt projects played a direct role in this effort.

Remodeling the Team

The traditional role of the Program Control section evolved into being a de facto program management office. The Program Control team functioned as the change agent for SENSOR and led the charge into the EPM environment. Some old hands had to learn new systems and processes. In particular, the program level budget analysts became EVM System Analysts; and program level master schedulers became EPM Analysts. Several new people were hired based on their industry wide experience to fill the new positions. Reorganization of program level personnel resulted in the alignment of Master Schedulers, EPM Analysts, and Budget Analysts to provide direct support to the SENSOR product lines and staff directors. Furthermore, all project managers had to undergo an intensive training regimen to increase their proficiency in MSProject and project management skills. A train-the-trainer cell was established by the Program Control section. Cultural change was facilitated by senior management involvement and regular information dissemination.

New and Revamped Systems

EPM is a system of systems. The components of the total EPM system include: Microframe Program Manager, v. 3.1, which serves as the database of record and calculator of EVM; MSProject, which is the engine for resource-loaded project schedules and the principal tool for project managers; MSEnterprise, which integrates project schedules in a server environment; MSSharepoint, which establishes the web-based, collaborative environment to host EPM; and wlnsight 6.2, the government preferred reporting tool.



The **SENSOR EVM GO BLUE** program was a major corporate change initiative. Nonetheless, the timeline was aggressive.

- June 2004: Government concerns with SENSOR's Earned Value Management System were formally defined in the Award Fee and CPAR assessments.
- July-August 2004: Problem space was defined and an aggressive, multi-faceted, cutting-edge solution identified, i.e., "EPM" as implemented in "EVM GO BLUE" initiative. A two-pronged plan aimed to:
 - (1) Make near and mid-term incremental process improvements
 - (2) Identify a tool and select a vendor to deploy the EPM environment
- September-December 2004: vendor review and tool selection was completed and the budget was fenced. Executive level buy-in was accomplished.

This set the stage for a 3 phased project to begin.

- Wave 1, January-March 2005: This first step required changes to business practices and project management practices and setting up the Microsoft Project Server. This included making organizational improvements, processes being rationalized and streamlined, hardware and software issues resolved, nine standardized project schedule templates/WBSs were developed, IOP rewrites (to reflect EPM environment) were completed, and a comprehensive training program was established that aggressively trained the 99 key people involved in EPM.
- Wave 2, March-August 2005: By the end of March 2005, the deployment of EPM was in full execution. This included the detailed work of creating interfaces for Actuals and Data Warehouse locations, defining SENSOR metrics tracking processes, and integration of the data warehouse with MSProject and Microframe Project Manager. Also, many near and mid-term incremental process improvements were made to take early advantage of the momentum being generated.
- Wave 3, October-December 2005: The start of the new fiscal year was the formal production implementation of the EPM environment. This included production implementation of automated EVM interfaces and reports, production integration with MPM with MSProject in a SQL server environment, automated web-based EPM metrics/reports in-place, sixty-two FY '06 project schedules were loaded into the EPM environment and weekly updating of project status began on October 1.

In January 2006, the government was formally briefed. The results were exceptional. Most importantly, the government recognized SENSOR in the most tangible manner, with an Award Fee score that explicitly cited the SENSOR Earned Value Management System with the highest rating that it can give as "**BLUE**". In government words, the SENSOR EPM environment meets objectives and "GO BLUE" criteria by providing:

- ✓ Accurate, timely, and meaningful data in an integrated environment which ties the project schedule to the EVM engine and forces detailed project planning.
- ✓ Access to the same data SENSOR managers use to manage in an integrated planning environment; specifically, eliminating the "2nd set of books"; and is available online via SENSORNet/wInsight
- ✓ Resource-loaded project schedules which are visible in the EPM environment; with project status updated weekly; and ongoing performance tracking
- ✓ A system of reports and metrics being actively used to manage the project portfolio



April 2006.

SENSOR Program Control Team receives ITT Systems President's Award Honorable Mention for leading the EVM GO BLUE initiative.

Left to Right: Dan Feigenbaum, Brenda Malmberg, Suzie Hearrell, Gary Giles (L-3), Bill Chadick, Bob Zapf, Keith Williams, and Gail Gibbons.

Some important lessons learned which are applicable to other programs:

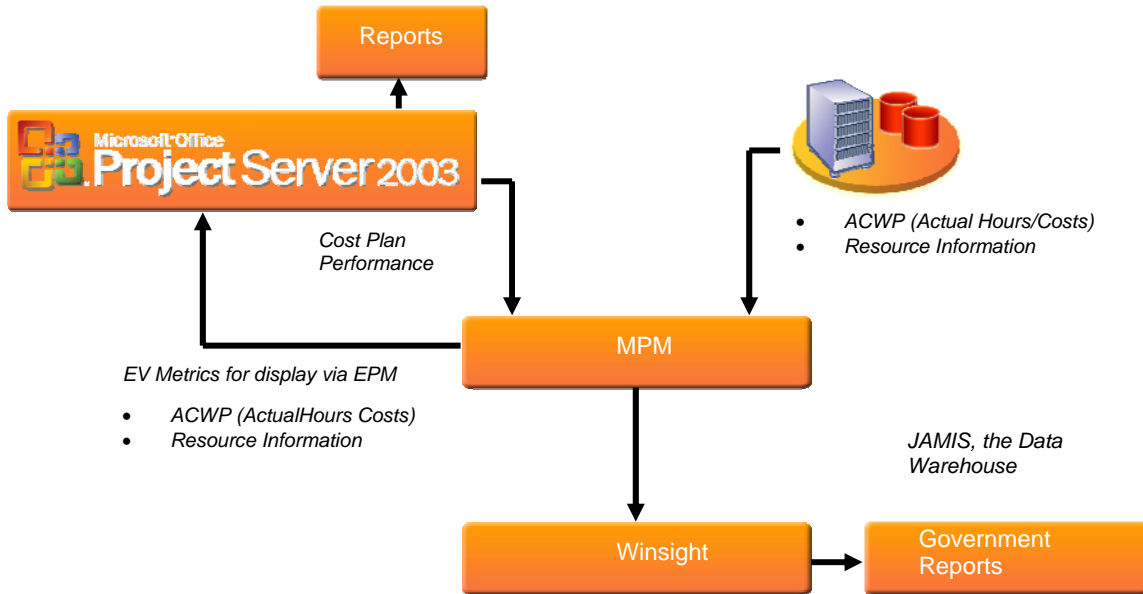
1. First, the *team success* of this major *change initiative* which was achievable only through *strong partnering and open communication* with the government, our implementation vendor, the dedicated ITT team, and strong top-down executive support.
2. Second, the *ongoing operational mission still had to be completed in parallel to the development effort*. This was only possible because of the extraordinary efforts of the full SENSOR team.
3. Third, *training and education* in the new processes and systems is critical. EPM is not business as usual. EPM is a *fundamental shift in practices that empowers the project manager*.

Here we are two years later. Our system of hardware and software is stable. Our core team is robust and knowledgeable. However, the work is never done. SENSOR continues to mature the EPM environment through process improvement and a never-ending, aggressive training program. Also, systems get more capable every day. Two years after launching EPM, SENSOR is already looking at the prospect of technical upgrades to MSOffice and MSProject 2007.

Some critical challenges and the response

Risk	Mitigation
<p>Maturity Learning Curve:</p> <ul style="list-style-type: none"> Project managers need to increase skills proficiency to build quality schedules Project managers must develop and maintain discrete, resource-loaded project schedules 	<ul style="list-style-type: none"> Aggressive, ongoing training sessions to address general project management, using MSPProject, and earned value calculations Re-role and align Master Schedulers, Budget Analysts, and EPM Analysts with product lines and staff directors to provide direct support to project managers Train-the-trainer cell established at Program Control level
<p>Cultural Buy-In/ Change Management</p>	<ul style="list-style-type: none"> Direct senior leadership/support for EPM: <ul style="list-style-type: none"> Several All-Hands meetings from ITTS President and SENSOR Program Manager Pre-IBR validation of projects Top down reporting/metrics developed by the Program Manager Quarterly briefings with the Air Force client to manage customer expectations <ul style="list-style-type: none"> Defined "Go BLUE" Government SPO participation in Wave 3 reports definition
<p>Ops Tempo</p> <ul style="list-style-type: none"> One deep manning 	<ul style="list-style-type: none"> Consolidated Master Schedulers, Budget Analysts, EPM Analysts, Purchase Request Analyst, and Proposal Analyst into a cell at program level Hire a vendor implementation team to create specific system interfaces, install hardware and software.
<p>Spreadsheet purgatory. Automate as much of the Excel spreadsheet churn as possible</p>	<ul style="list-style-type: none"> Streamline processes related to import of Actuals from JAMIS and monthly financial reconciliation Employ in-house MIS team. Reduced 4 days to 2 for monthly CPR; 1 day to 2 hours for weekly update. Create more detail in the CBB Log and CACR log
<p>System Hardware and Software</p> <ul style="list-style-type: none"> Improve data consistency between systems Resolve hardware issues Troubleshoot persistent system errors in MPM and wlnsight 	<ul style="list-style-type: none"> Upgrade to MPM 3.1 to automate interface MPM x MSPProject MPM server upgrade to Pervasive V-8 database New OS improves daily backup procedure CITRIX Termserver and 3 new servers MPM and wlnsight experts on site for 2 weeks Upgrade to wlnsight 6.2

Technical Roadmap: Data Flow



Note: L-3 Engineering and Technical Services provides master scheduling and project management support to the SENSOR GO BLUE initiative.