

Earned Value Management

Purpose and Background

The management of technical projects is becoming a challenge to professional engineers in an increasingly competitive marketplace in which effective project planning and control approaches in compliance with clients' contractual requirements. Successful project managers demand that their projects meet technical objectives and be completed on schedule and within budget. To ensure success, an effective project control system must be designed, developed and implemented to provide management with timely and accurate information on deviations of cost and time parameters from the target objectives established during the planning cycle of the project.

Earned Value Management (EVM) is a project planning and control approach which provides cost and schedule performance measurements. It compares actual accomplishment of scheduled work and associated cost against an integrated schedule and budget plan. Its benefits include visibility into the true progress of the project work against the budget, projections of anticipated project schedule and cost trends and the ability to take timely corrective actions for undesired variances. EVM is considered to be one of the most powerful and productive concepts utilized in managing today's complex projects in private, commercial or government environments.

Seminar Instructor

Nghi M. Nguyen, Ph.D., P.E., PMP, M.ASCE, is President & CEO of NDV Project Management Services Inc, a Project Management Institute's Registered Consultant (RCP) Program Member. He has had more than 25 years of progressive, domestic and international consulting and training experience in the field of project/program and portfolio management on major construction, aerospace, defense, oil & gas and high-technology projects with leading Canadian and U.S. Corporations such as the SNC-Lavalin Group, Lockheed Martin, CAE and the Canadian Space Agency (CSA). A recognized speaker, author and presenter, Dr. Nguyen has written and presented numerous technical papers on project/program management related topics in international conventions and congresses in Canada, the U.S., Europe, Asia and the Caribbean.

As a project management consultant and trainer to engineering and construction firms, Dr. Nguyen has assisted clients with project management approaches to effectively and efficiently complete projects and attain their objectives. He is a specialist in project management training, consulting, definition, development, identification of project objectives, constraints and methodologies, having provided project management consulting and training to engineers and project management professionals worldwide. He has worked as a project management consultant for the Canadian Space Agency (CSA) on projects associated with the International Space Station (ISS) program, the 16-nation effort to build the permanently orbiting laboratory in space and the largest and most sophisticated international engineering project ever undertaken as well as for SNC-Lavalin International on China's Three Gorges Dam project, the largest construction project in the world to date, and was involved in a number of projects in the Information Technology (IT) and Oil and Gas sectors, among them was the construction of the \$ 5 billion Hibernia Oil Production Platform in St John, Newfoundland, Canada.

Educated at McGill and Concordia Universities in Montreal, Quebec, Canada, Dr. Nguyen holds B.S., M.S. and Ph.D. degrees in Civil Engineering and Construction & Project Management and is a Certified Project Management Professional (PMP) since 1995 and also a part-time professor at the Faculty of Engineering and Computer Science at Concordia University.

- For group training, contact John Wyrick (JWyrick@asce.org) or Stephanie Tomlinson (STomlinson@asce.org)

Summary Outline

DAY ONE

Introduction to Earned Value Management (EVM)

- Management Criteria versus Engineering Criteria
- Evolution of the Earned Value Management (EVM) Concept
- The Cost/Schedule Control System Criteria (C/SCSC)
- The EVM System Criteria
- Performance Measurement- An Effective EVM Technique
- EVM in Project Management

Scope the Project

- Understanding the Project Work Scope
- Work Breakdown Structure (WBS)
- Make-or-Buy Choice
- WBS and Earned Value

Plan and Schedule the Project

- Understanding the Project Objective
- Planning the Project
- Scheduling the Project
- Scheduling and Earned Value

Estimate and Budget Project Resources to Form Control

Account Plans (CAPs)

- Integrating the Project Work Scope with Cost and Schedule
- Earned Value CAPs
- Cost Estimates and Budgets
- Management Reserves

Establish the Earned Value Project Baseline

- Methods Used to Plan and Measure Earned Value
- Control Account Plans (CAPs)
- The Performance Measurement Baseline (PMB)
- Maintaining the Baseline : Managing Changes in Scope

DAY TWO

Monitoring Performance Against the Baseline

- CAPs Performance Measurement
- Presentations to Project Management
- Earned Value Cost and Schedule Variances
- Materials and Subcontracts in EVM

Final Cost and Schedule Forecasting

- Determining Factors
- Cost and Schedule Results Methodology
- Management Reserve or Contingency Reserve
- Estimate At Completion (EAC)
- The Over Target Baseline (OTB) Process
- Predicting the Project's Time Duration

EVM Reporting

- Subcontractors' Reporting
- Preparing and Interpreting the Integrated Cost/Schedule Report
- The EVM Reporting Formats

EVM Exercises and Case Studies

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Seminar Benefits

- Obtain basic knowledge in understanding and using an effective performance management system in managing technical projects effectively
- Manage projects using a proven, effective performance measurement technique
- Work with clients to define project objectives and develop a project plan and put it into action
- Make project decisions concerning scope, cost and schedule parameters faster, more effectively and more confidently
- Stay on top of schedules, budgets, workloads and human resources issues and delegate practically and fairly
- Learn to avoid the pitfalls of project management by quickly identifying potential project risks and mitigate them as early as possible

Who Should Attend?

This seminar is designed for those who want to learn the basic principles of EVM used for project performance measurement, a proven method to evaluate project work progress in order to identify early potential schedule slip-page and areas of budget overruns . It provides practical coverage of an accurate and realistic reflection of the integrated scope, cost and schedule parameters of a project to assist both contractors and client management in the decision-making process.

- Project managers
- Program managers
- Engineers
- Cost/schedule practitioners
- Contract administrators
- Professionals involved in a management/ control related function

ASCE seminars are available for On-Site Training. For details regarding On-Site Training and/or needs-based training opportunities, please contact:

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