



Case Study Fleet Project Management

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General Information

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Customer profile

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Case Study – Fleet Project Management

Department profile

Constellation Energy's Fleet Project Management organization provides governance, oversight and support to Project Management and Project Controls personnel assigned to generation facilities in the Nuclear Group for large capital projects (> \$500,000). Areas of governance, oversight and support include:

- Project Management Lifecycle and Processes
- Project Controls
- Project Estimating
- Project Assessments
- Construction Management
- Projects Lessons Learned
- Training

Business situation

Internal and external assessments conducted in 2007 indicated a lack of use and consistency in application of project management processes across the organization. This was determined to be a contributing factor to several capital projects not meeting cost and schedule expectations. A Mission Critical Initiative (MCI) was started in 2008 which included the following objectives:

- Redevelopment of standard project lifecycle
- Redevelopment of project management processes and establishing a 'Project Management Toolbox' (PMT)
- Redevelopment of project controls processes and establishing a 'Project Controls Toolbox' (PCT)
- Assessment and selection of a technology platform to facilitate the use of the redeveloped PMT and PCT
- Revision of affected training program materials
- Introduction of 'Earned Value Management' (EVM) and incorporation into site and fleet reporting associated with projects and project portfolios.
- Development of appropriate change management activities to support the initiative

A business process improvement project team was assembled in early 2008 that included internal and external members. A project charter, schedule and task plans were developed which guided the MCI activities.

Technical situation

The existing process for project management was largely based on the Project Management Institutes Project Management Body of Knowledge (PMI-PMBOK). The PMI-PMBOK is an excellent foundational collection of project management knowledge but does not specifically account for supporting processes and tools within an organization. Processes were frequently supplemented by Project Managers with tools and documentation templates from organizations where they had previously worked. The project team found that this led to inconsistency in project documentation and reporting for large capital projects.

There was no specific process or designated repository for project documentation. Project files were typically maintained on local computers or network drives assigned to the Project Manager and generally inaccessible to the organization. The project team found that this led to a lack of transparency regarding project documentation and did not facilitate exchange of information between similar projects across the organization.

Project scheduling was performed using the Primavera Project Management application. The organization upgraded to Primavera P6 in 2007 which contains new functionality and features which support earned value management (EVM), web based management and reporting of project schedules and portfolios. The new version of the software was installed and data structures including schedules from the previous version were imported. This limited the initial use of some of the new functionality and features provided by the upgraded application.

The estimating process was not standardized and did not facilitate project progress reporting and management assessment of costs. There were no standardized software tools to support the process and interface with the project schedule or the organizations financial and supply chain systems. Project estimates did not effectively support long term asset management, leading to project business cases that were inadequate or incomplete.

Team reviews of project reporting determined that it was not based on real time project data and there were no key metrics facilitating the determination of overall project health. There was a lack of roll up reporting that provided management with a clear picture of individual project status as well as overall facility and business unit portfolio status and trends.

The Project Management organization had several SharePoint 2003 sites which were infrequently used and inconsistently structured. The features provided by SharePoint were not recognized or leveraged by the organization to promote collaboration, process support and a structured repository for project documentation.

Limited training was provided on organization specific processes or supporting tools. Training for project management was based on the PMI-PMBOK which covers foundational knowledge for project managers. The training program did not address project controls, estimating and construction management personnel.

A systematic approach was not used to design, develop, and implement necessary training. The resulting lack of job and task analysis data led to content that did not support improving the performance of the project management and controls organizations. No clear criteria had been established for qualification.

Solution

The project lifecycle was redesigned to match organization needs and expectations. The focus shifted from the lifecycle being solely based on the PMI-PMBOK to one that included financial, supply chain, engineering and construction processes. The lifecycle provided the road map for the development of the Project Management and Project Controls Toolboxes (PMT, PCT).

The structure of the PMT was redesigned to include three components for each task that supported lifecycle activities and milestones. Each task has a Guide which describes what is to be done to complete a task. The guide includes a task description, required and optional inputs to the task, required and optional task outputs, task resources, management expectations and task performance guidance. If the task requires documentation a Form and Example were also developed. The form provides a standardized way to document the task and the example provides a standard for the documentation.

New processes were developed as part of the PMT that introduced Project Lifecycle Phase Reviews and Environmental Screening. The phase reviews provide a structured review of project status by management at each project lifecycle phase milestone. Environmental screening was added to evaluate potential environmental considerations and engage environmental professionals as necessary early on in the project lifecycle. Several existing processes were consolidated to reduce duplication of tasks or information. Processes and associated task were also deleted where they were determined to not support the revised project lifecycle.

SharePoint 2007 was selected as the platform to contain the revised PMT. A consistent structure was designed and developed within SharePoint that facilitates use of the PMT and management of PMT revisions. Standard SharePoint navigation to the components of the PMT was supplemented by a project lifecycle diagram with hyperlinks that take users directly to the applicable guide, form and example files. The SharePoint structure was also designed to include children sites for each project. These children sites serve as the project repository for all documentation and facilitate project team collaboration and communication. This provides the organization with a consistent digital view of a project and a transparent method to capture and retain the history of a project.

SharePoint Lists were developed to manage change requests and feedback for the PMT and Training. The lists use workflows to automate the routing of requests from and feedback to responsible members of the organization and document the actions taken. SharePoint Surveys have also been established to collect, document and retain feedback on the PMT and training. A Project Management Knowledge Base (PMKB) was also established as part of the Project Management SharePoint site. The PMKB utilizes a wiki format to house and expand project management foundational knowledge and process specific experience of the organization.

Change management actions for the introduction of the PMT and SharePoint sites included communications in the form of emails and group briefings for affected personnel and the development and implementation of training focusing on the revised process and the supporting tools. A series of SharePoint job aids were developed that address the specifics of establishing, managing and using the project specific children sites by the project manager and members of the project team.

The Vision Learning Content Management System was used to document and manage job, task and knowledge analysis and learning content supporting the training programs. Hierarchies were designed to organize the data and content and templates were developed to standardize content development. Online training was developed for selected content using the Articulate online content development suite to generate Flash based content that can be viewed in a browser. Access to the online content is managed through the SharePoint training and qualification libraries on the Project Management SharePoint site.

Work on the Project Controls Toolbox (PCT) has continued into 2009 using the same approach and methods that were used for the PMT. When complete, the PCT will provide standardized processes and supporting tools for project scope development, scheduling, estimating, earned value management, project reporting and key performance indicators. This effort is planned to complete in the coming months including applicable change management and training activities.

The organization selected and implemented WinEstimator as the standard software tool to support the project estimating process. Interfaces were developed that allows WinEstimator data and financial system data to be linked to the Primavera P6 budget log, facilitating earned value management reporting. Primavera P6 resources and templates continue to be revised and enhanced to support new standardized project management and control processes and integration with the Integrated Work Management processes for Online and Outages schedules.

Standardized reporting for individual projects, station and business unit portfolios have been developed. A 'Project Performance Report' (PPR) was developed initially in MS Excel and piloted. An online web based PPR tool was then developed which interfaces to Primavera P6 and financial systems. The PPR includes key data on project costs, performance indicators, earned value, milestone performance, schedule adherence, risks and mitigation actions and key team members. It also includes narratives on project scope, current status, concerns, and actions to address performance issues. Site 'Dashboard' and 'Roll up' reports and a Business Unit 'Roll up' report were also developed. Published project, site and business unit reports are managed using SharePoint. Adobe Acrobat Pro is used to generate PDF Package files which are distributed through the Primavera P6 Web application using portlets specifically designed for site and corporate management reporting needs. A series of job aids were developed to support end users of the online PPR and P6 Web portlets and generation of the reports.

Benefits

The changes completed have provided the organization with the following benefits:

- Improved processes that are standardized for all projects and reflect a common project lifecycle
- Tools that promote project team collaboration, communication and effective documentation of the project that are transparent within the organization
- Standardized reporting at the project and portfolio levels
- Improved project controls that integrate schedules and costs facilitating earned value management and reporting
- Improved long term asset management
- Training that focuses on process and supporting tools in addition to foundational project management knowledge
- Criteria for qualifications of project management, project controls and construction management personnel

Moving forward these changes will allow the organization to:

- Effectively plan, fund and execute large scale capital projects
- Improve their ability to manage assets.
- Reliably develop business cases and project plans that meet cost and schedule expectations.

Services provided and products used by The Westwind Group

Services that The Westwind Group provided that supported the solution development include:

- Programmatic and Process Assessments
- Business Process Gap Analysis
- Program Recovery
- Benchmarking & Best Practices
- Process Development
- Procedure Development
- Business Technology Management
- Job and Task Analysis
- Curricula Design and Development
- Learning Strategies
- Training Delivery
- Project Management

Products that The Westwind Group used to support the solution development include:

- Microsoft Office Suite 2007
- Microsoft Office SharePoint Server 2007
- Adobe Acrobat Professional 8
- Articulate 8
- SnagIt 9
- Vision Learning Content Management System, Focus Learning

Services provided by other groups or companies

Services provided by other groups internal to Constellation and other companies included:

Constellation Fleet Project Management Organization – Provided overall governance, oversight and management of the MCI.

Constellation Information Technology Group – Provided project management support from an information technology perspective, and technology implementation oversight and support.

Work Management Inc. - Provided personnel that developed standardized reports for projects and project portfolios. Additionally, they provided support for development of project controls processes, project management of selected MCI task plans and sub-projects from a business perspective.

MCSI - Provided development and implementation services for the reporting technology platform.

Karen Glooch, LLC – Provided support for communications and change management activities associated with the MCI.