

Project Management

Managing Project Scope and Risk

Each project's product and/or service is unique and requires its own careful balance of practices, processes, tools, and techniques to ensure the required work is completed as agreed upon by project stakeholders. The sum of these along with the product and/or service to be delivered by the project is known as the project's scope. Specifically, the Project Management Institute's (PMI) Guide to the Project Management Body of Knowledge (PMBOK) defines project scope as "the sum of the products, services, and results to be provided as a project" and includes "*the work that must be performed to deliver a product, service, or result with the specified features and functions*".

Efficient scope management begins with the practice of proper scope planning. This practice is key to delivering projects successfully. Four primary planning actions are conducted during the scope planning process and include defining:

1. *Scope Planning* which results in the creation of a project scope management plan that documents how the project scope will be defined, verified, controlled, and how the work breakdown structure will be created and defined.
2. *Scope Definition* delivers a detailed project scope statement as a basis for future project decisions.
3. *Scope Verification* formalizes a plan for the acceptance of completed project deliverables.
4. *Scope Control* establishes a mechanism for controlling changes to the project scope.

Understanding and analyzing project stakeholders is an important early step toward ensuring agreement upon project scope and any work expected to be accomplished. To then properly manage this throughout a project's life cycle requires a defined roadmap that outlines product and project direction in-line with stakeholder expectations and associated contractual obligations. Project Scope Management also includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully.

Defining project scope involves subdividing major project deliverables, as identified in the project scope statement, into smaller, more manageable components. This effort results in the development of the WBS and eventually the identification of resources and milestones that will provide perspective on the project as a whole.

Scope verification activities include measuring, examining, and testing project deliverables to ensure they comply with agreed upon requirements. How this is accomplished must be documented and agreed upon by key stakeholders during the planning process. The ultimate objective of this process is a documented plan for formally accepting completed project deliverables.

Sometimes project scope may need to be adjusted. Changes may result from fluctuations in resources, schedule, cost, client requirements, etc. Scope change itself is not necessarily bad assuming that it is recognized early, addressed quickly, and that project stakeholders are in agreement as to the impact of the change on project activities and objectives. However, uncontrolled scope creep can quickly cause issues leading to project failure.

Establishing a mechanism for controlling and addressing project scope change is critical to project success and involves activities such as:

- Influencing factors that create scope changes
- Identifying when scope change has occurred
- Helping to ensure that changes are beneficial to project objectives
- Managing the actual changes when they do occur

To effectively manage and control scope requires knowledge focused in areas such as:

- Defining scope that addresses business needs
- Maintaining realistic operational expectations
- Defining realistically achievable timelines
- Identifying stakeholders
- Understanding stakeholder needs
- Project management

A project risk is an uncertain event or condition that, if it occurs, has a positive or negative impact on project objectives. Some project areas that may result in risks that might influence project scope include the management of:

- Time
- Cost
- Quality
- Resource
- Communication
- Procurement

However, project risks can be effectively mitigated through a diligent process of:

- *Risk identification* – the process of determining which risks might affect the project and then documenting characteristics of those risks.
- *Risk analysis* – the process of analyzing the project's tolerance for risk based on defined thresholds and tolerance levels and may include both qualitative and quantitative risk analysis.
- *Risk response planning* – the process of developing options and actions to enhance opportunities and to reduce threats to project objectives and may include risk mitigation, contingency planning, transfer, avoidance, and acceptance.
- *Risk monitoring, controlling, and reporting* – the process of identifying, analyzing, and planning for risk, keeping track of identified risks, and reanalyzing existing risks, monitoring risk symptoms and triggers, and reviewing the execution of risk response strategies while evaluating their effectiveness.

Effective requirements gathering, documentation, rational prioritization of work effort, and consistent stakeholder communications help facilitate these processes.

Building a defined timeline that balances delivery of the project's product and also satisfies business drivers is an effective communication tool to keep stakeholders informed of planned and actual project progress. Continuing to maintain stakeholder buy-in requires consistent, transparent, open, and honest communication between the project team and project stakeholders.

Accurate time reporting and schedule maintenance also helps provide transparency into project efforts; helps ensure schedules remain on track and supports employee morale. Communicating dependencies, risks, issues, and project progress through regularly scheduled formal status reports and informal unscheduled communication helps ensure that project objectives are being satisfied.

Portions of this newsletter were paraphrased from a presentation by Sumesh Sundareswaran, PMP delivered during the March 2010 meeting of the CDC Project Management Community of Practice (PMCoP). For more information on the PMCoP, or the CDC Unified Process please visit the CDC UP website at <http://www.cdc.gov/cdcup/>. ■

Project Management Community of Practice

- **July 30, 2010**
Microsoft Project (Desktop & Server)
- **August 27, 2010**
EPLC Tailoring
- **September 24, 2010**
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- **October 29, 2010**
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- **December 10, 2010**
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For more information on the Project Management Community of Practice visit the PMCoP website at <http://www2.cdc.gov/cdcup/library/pmcoP/> ■

CDC Unified Process Presentations

The CDC UP offers a short overview presentation to any CDC employee and/or contractor group, upon your request. Presentations are often performed at your facility, on a day of the week convenient for your group, and typically take place over lunch structured as 1-hour brown bag/lunch-and-learn style meeting.

Contact the CDC Unified Process at cdcup@cdc.gov or visit <http://www.cdc.gov/cdcup> to arrange a short overview presentation for your group. ■

Contact the CDC Unified Process

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