

# State of Colorado



## Statewide Project Management Users Group (PMUG)

## Project Management Common Methodology

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The Methods and Processes working group charged to update the original methodology and create “version 2.0” was comprised of the following PMUG Members: Glenn Miller, Jim Shuford, Sam Kelly, Cindy Kibble, Corinne Jones.

# Common Methodology Framework

## Introduction



What is Project Management? Project Management is defined as “the application of knowledge, skills, tools, and techniques to project activities to meet project requirements.” (PMBOK® Guide)<sup>1</sup>

What is a Project? “A Project is defined as a temporary endeavor undertaken to create a unique product, service, or result.” (PMBOK)

The foundations in this methodology are presented with the intent of helping ensure your success throughout the planning, execution, and completion of projects within the parameters implemented within your agency.

Some major reasons why projects can fail are as follows:

- Lack of customer focus and user involvement
- Lack of strong project sponsorship and executive support
- Poorly defined requirements
- No defined process
- Ineffective planning
- Inaccurate estimations
- Inadequate resources
- Unclear roles and responsibilities
- Staff turnover
- Lack of authority given to the project manager
- Poorly trained project managers

Through the use of a project management methodology and proven processes, organizations have an invaluable tool to implement their strategic objectives and the projects that support these objectives are more likely to succeed.

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<sup>1</sup> Project Management Body of Knowledge (PMBOK) is a trademark of the Project Management Institute, Inc.

### **Balancing Project Constraints:**

The six (6) basic constraints that frame a project are as follows:

- Scope
- Quality
- Schedule
- Cost/Budget
- Resources
- Risk

Project Scope is “the work that must be performed to deliver a product, service, or result with the specified features and functions” (PMBOK Guide). The term Quality refers to the “degree to which a set of inherent characteristics fulfill requirements.” Time refers to the schedule, or the duration of how long it takes to reach project milestones or full project completion. Cost/Budget and Resources refers to the money, people, equipment or other resources needed to complete the project. Risk is the determination of events that could impact the project either in a positive or negative manner.

These factors are related by the fact that if one of these six constraints changes there will be an impact on one or more of the others. It is critical that a project manager analyze each of these constraints each time one of them changes. The goal is to achieve an acceptable balance among all of these constraints.

# Common Methodology Framework Overview



## **Purpose**

The purpose of the Framework is to provide a holistic overview of the life of the project and each of the project management processes needed to successfully complete the project. Every project (and each phase within the project) consists of five process groups: Initiating, Planning, Executing, Monitoring & Controlling and Closing.

## **Objective**

The Common Methodology Framework version 2.0 is intended to cover the basic elements of a solid project management methodology. It's designed primarily for agencies that do not have a standard project management methodology in place or for the project manager working on small to medium sized projects that need a set of templates to help manage the project. In version 2.2, the templates have been removed from the methodology document, but are now available on the website [www.colorado.gov/oit/eppmo](http://www.colorado.gov/oit/eppmo). This will allow for updates of the templates, without making other changes to the methodology and should make these templates more accessible.

The process groups and their elements outlined here are based on industry best practices. The Process Groups can apply to an overall project, or to multiple phases of a large project. This is a living methodology and updates, additions, and enhancements will be forthcoming.

## **Process Groups**

### Initiating

Initiating is the beginning of the project. This is where the purpose of the project is documented, project authorization is formalized, and initial requirements' gathering begins. Project feasibility often precedes initiation and stakeholder identification is usually included in project initiation.

### Planning

Planning is where the project management plan and all of its related sub-plans are created, documented, and approved by the project sponsor and project stakeholders. The project management plan will be used to guide the work of the project and to measure project progress. The initial requirements are refined and a complete project scope statement and its components are created and documented.

### Executing

During Executing, the work defined in the project management plan is performed. Deliverables are completed, tested, and accepted. In addition to completing deliverables, this process focuses on managing project resources, following the project plan and distributing information.

### Monitoring & Controlling

Monitoring & Controlling is where deliverables are compared and verified against the project management plan and the requirements. It is an activity that is performed throughout the project; however, the majority of work in this process group is done concurrently with the Executing process group. Once deviations from the project management plan are detected, corrective and preventative actions are recommended to bring the project back into alignment with the project plan.

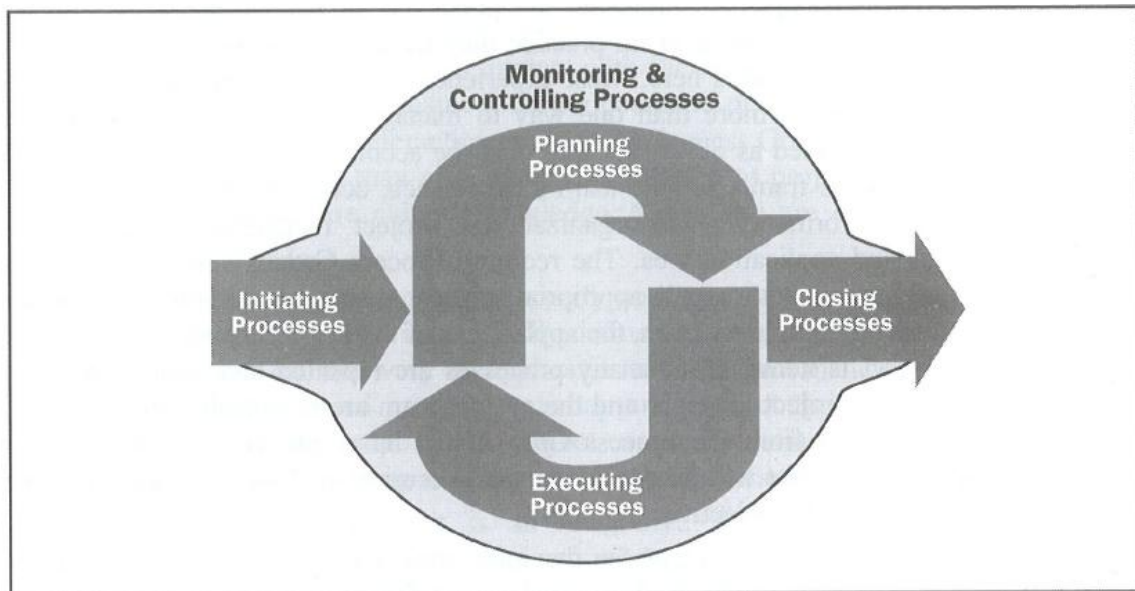
### Closing

During Closing, lessons learned are documented, project documents are archived, contracts are closed out and team members are released to work on other assignments.

More detailed information can be found on these process groups within the subsequent sections of this document.

It may seem that the process groups are discrete and sequential elements in the life of a project, however they overlap and interact continuously. There are many ways to manage a project. Each project is different in size and complexity so it is essential for a project manager to view this methodology as a guide and to determine to what level of detail these processes are followed.

Below is an illustration from the PMBOK Guide that demonstrates how the five process groups overlap and interact with one another.



In addition to the five process groups, other elements are needed to make the project a success. For example, requirements gathering, documentation, and validation are generally the responsibility of business analysts or business subject matter experts. The project manager assures these steps are completed but isn't necessarily responsible for performing these tasks. When appropriate to the size and complexity of the project, the project manager may wish to request a business analyst to work with them on the project.

Other related activities that may be required for a project include: contract and RFP writing, SDLC (software development life cycle) or industry specific methodologies for non-IT related projects.

### **Role of the PMBOK® Guide**

The primary role of the PMBOK guide to this methodology document is to identify that subset of the project management body of knowledge that is generally recognized as good practice. This methodology document was created for the State of Colorado to be used in conjunction with the PMBOK guide.

### **Attributes of a Project Manager**

A project manager has a significant impact on the success of a project. Project management is as much an art as it is a science. Only through experience and learning from past mistakes does a project manager grow in professional maturity.

Hard skills are often task and detail oriented, tending to utilize or follow established processes, templates or best practices. They are often associated with mental acuity and knowledge acquired through study. Following are typical hard skills for project managers:

- Managing technical issues
- Planning

- Contracting
- Budgeting
- Measuring performance
- Monitoring project quality
- Analyzing risks
- Schedule and cost estimating

Soft skills require personal and professional judgment and are often focused on issues affecting people and organizations. The need for these is common to most projects and can be critical to project success. Following are soft skills useful to project managers throughout the course of a project's life cycle:

- Communication
- Negotiation and influencing
- Leadership and motivation
- Problem-solving and decision making
- Conflict resolution
- Managing change
- Thinking globally
- Team building and motivation
- Political and cultural awareness

A Project manager typically assumes certain roles and responsibilities in order to provide good management throughout the project. Typical responsibilities for the PM are listed below:

- Define project scope
- Select, build and lead the project team
- Identify and assess stakeholders
- Manage stakeholder expectations
- Negotiate with project sponsors
- Develop the project plan, including budget and schedule
- Manage and control project risks
- Manage all project changes
- Balance project constraints
- Monitor and report accurately project progress and status
- Manage expectations and deliverables.

In fulfilling these responsibilities, the project manager must be able to relate to the team, the organization and the customer. The project manager must provide information to sponsors, supervisors, team members, and any other stakeholders. In managing the team, the project manager must provide direction and lead them, providing resources when necessary and protecting them from outside influences in order to keep the project on track. The project sponsor may assist in the acquisition of resources and the control of outside influences. The project manager must also be able to report the status and



progress at any time during the project to all associated parties of the project. In brief, the project manager has an ethical and professional obligation to responsibly perform these duties at all times while governing the project.

The project manager is responsible for overseeing all aspects of the project and ensuring milestones are met, stakeholders are satisfied, and project status and issues are communicated appropriately. The project manager should have direct oversight and hands on involvement with each of the elements within the process groups of this Common Methodology Framework. Additionally, the project manager should make certain any related methodologies needed for management and execution of the project are followed and completed.

A key responsibility of a project manager is to proactively manage projects and to anticipate potential risks and issues so that their impact can be avoided, mitigated or eliminated. It is critical to not wait until problems arise and then respond in a reactive mode. It is often too late to bring a project back into alignment with its scope, budget, schedule, quality, and customer expectations after significant problems have occurred. A project manager can have the most impact on a project when he/she anticipates potential negative outcomes and acts proactively to prevent them from happening.

A key role of the project manager is communication. A project manager will spend approximately 90% of his/her time communicating. Project status, risk status, issues, action items, and so on should be communicated in a timely manner to the appropriate parties. In almost every project's lessons learned session, communication is identified as an area for improvement. It seems impossible to communicate enough so when in doubt: communicate, communicate, communicate!

# Common Methodology Framework

## Initiation



<b>Purpose</b>	The primary purpose of initiation is to obtain approval to start the project. Key elements of initiation include the project description, project manager identification, initial commitment of financial resources and the identification of key stakeholders. Phases may be identified during project initiation for large or complex projects.
<b>Key Inputs</b>	<ul style="list-style-type: none"> <li>• Identification of the Project Sponsor</li> <li>• Business case</li> <li>• Pre-initiation Checklist</li> </ul>
<b>Key Outputs</b>	<ul style="list-style-type: none"> <li>• Approved project charter</li> <li>• Stakeholder list</li> <li>• Initial requirements</li> <li>• Project scaling worksheet</li> <li>• Initiation checklist</li> </ul>
<b>Completed By</b>	Project sponsor, project manager
<b>Necessary Participants</b>	Project sponsor, project manager, key stakeholders

### Introduction

The purpose of initiation is to define the project and obtain approval to continue planning the project. Key elements of initiation include the project description, project manager identification, the initial commitment of financial resources, completion of the project charter and the identification of key stakeholders.

A project can be a new project that will produce a new product or service, a project that will enhance or modify an existing product or service or a new phase of an existing project. Typically an organization will determine parameters that will qualify the endeavor as a project. These parameters might include the cost and the duration of the project, as well as the scope and magnitude of the work that will take place in order for

the project to be completed or the product to be produced.

The feasibility of the project is typically justified by senior management within the organization prior to the start of initiating a project. The project manager should understand the organizational influences on the project including external influences, sponsor and stakeholder responsibilities, as well as the qualitative and quantitative criteria that senior management may use to initiate projects.

To be effective the project manager should be able to work with the sponsor or business units to perform the following:

- Develop qualifying project objectives through needs assessment
- Understand the differences of technical and functional requirements
- Develop the project charter with the appropriate sponsors
- Develop preliminary project scope and requirements for the project
- Identify project stakeholders and their roles, interests, and influence

According to the PMBOK guide stakeholders are “persons and organizations such as customers, sponsors, performing organization and the public, that are actively involved in the project, or whose interests may be positively or negatively affected by execution or completion of the project.”

The PMBOK guide further suggests that the following list be a part of the project stakeholders:

- User or consumer of the product
- Project management team
- Performing organization
- Sponsor
- Individuals of influence
- Project management office

The Project Management Institute (PMI) identifies three classes of personnel within a project: The project manager, the project team and the core project team. It is the role of the project manager to work with the sponsor and the functional managers within an organization to assign the qualified personnel for the project team. For example, on a technology project there are certain subject matter experts (SME's) that will be more qualified to accomplish certain work tasks over others that are not as qualified in that area of expertise. This does not diminish the skills of any one individual as all team members are of equal importance. Level of responsibilities however might be lesser or greater for certain individuals, based on their level of project involvement.

The next steps following project authorization and team member association is the expansion of the project objectives, the initial definition of functional and technical requirements and the determination of the scale of the project. The organization

performing the work will need to determine the customer needs and wants. Once identified, the process of gathering and recording the functional and technical requirements can begin. Once the initial project requirements have been formulated and approved by the sponsoring organization and the scale of the project has been determined, the project can move into the planning process of the project life cycle.

### Project Scaling

Before the project begins, it is important for the project manager and the project team to review the scale and complexity of the project and estimate the level of impacts on all factors of the organization. The nature and type of a project can have few characteristics that define the complexity of the project and simple projects can have very little impact on the organization. More complex projects as defined by the sponsor or agency can have large impacts on the organization. An example of some of the common factors that impact the project complexity is listed in the table below:

Complexity Factor	Simple Projects	Complex projects
Environment	Minimal	Significant
Stakeholders	Minimal	Significant
Business Processes	Minimal	Significant
Technology	Minimal	Significant
Organization Assets (EEF & OPA*)	Minimal	Significant

\* EEF: Enterprise Environmental Factors

\* OPA: Organizational Process Assets

### Next Steps

Once Initiation is complete, the project manager should have the following documentation:

- Project charter (signed by all designated sponsors)
- Preliminary requirements document
- Project feasibility document
- Project order of magnitude costs documentation
- Stakeholder list
- Preliminary team member roles and responsibilities matrix
- High level project plan
- Project scaling worksheet

- Initiation checklist

It is important for the project manager to ensure that the project team members and all associated sponsors have access to project documentation. Based on the infrastructure of the organization, this access can be granted electronically or physically stored for access and retrieval.

Once the Initiation process has been completed, the project is ready to move into Planning.

# Common Methodology Framework

## Planning



<b>Purpose</b>	The purpose of project planning is to develop a project plan to guide task execution. The plan should identify all the work required to complete the project and define how the work is to be performed.
<b>Key Inputs</b>	<ul style="list-style-type: none"> <li>• Approved project charter</li> <li>• Stakeholder list</li> <li>• Initial requirements</li> <li>• Project scaling worksheet</li> <li>• Initiation checklist</li> </ul>
<b>Key Outputs</b>	<ul style="list-style-type: none"> <li>• Approved Project Management Plan including all subsidiary plans</li> <li>• Completed planning checklist</li> <li>• Final requirements</li> <li>• Work breakdown structure</li> <li>• Procurement documents</li> <li>• Project Baselines</li> </ul>
<b>Completed By</b>	Project manager
<b>Necessary Participants</b>	Project manager, project team, project sponsor and stakeholders

### Introduction

The planning process is used to describe the actions taken to execute the project and identifies the level of effort to be administered during the lifecycle of the project. The key deliverable is the project plan itself which may consist of multiple subsidiary plans.

Prior to completion, the plan should be shared with all prospective stakeholders and team members to inform them how the project is to be executed as well as allowing them to provide feedback on the plan. Final approval of the plan should be formalized with signatures from all sponsoring leadership.

## **The Project Management Plan**

The Project Management Plan, typically referred to as the project plan, is the compilation and integration of all of the planning efforts for the project. It is recommended that the project plan incorporate all of the nine PMBOK knowledge areas defined as follows:

- Integration Management
- Scope Management
- Time Management
- Cost Management
- Quality Management
- Resource Management
- Communications Management
- Risk Management
- Procurement Management

These nine knowledge areas should be integrated into the project plan. Depending on the size and complexity of the project, separate subsidiary plans may be developed and integrated with the overall plan.

### **Integration Management**

Integration Management consists of coordinating and unifying the various plan activities and processes that will be ongoing throughout the project. Planning is iterative, and as subsidiary plans or specific planning areas are elaborated they often affect other plans or areas. These effects should be integrated across all plan components and documented accordingly.

### **Scope Management**

Scope planning is one of the most important tasks to be performed when planning a project. The scope management plan should further articulate the project purpose, stakeholder and customer requirements, project goals and objectives, project deliverables, and criteria for determining the project success. It is recommended the project scope consider all of the preliminary analysis including project costs and resource estimates, assumptions, constraints, risks, requirements, along with all other high-level and summary project information.

In order for a project manager or project team to more accurately plan the project schedule and costs, the scope of the project must be defined and agreed upon by the project sponsorship. It is often helpful to identify project exclusions to avoid confusion and clearly delineate project scope. Final project requirements are also gathered and documented in the plan to further define scope.

The scope management plan should be constructed as a joint effort involving all of the team members including the sponsors, all stakeholders and anyone else associated or affected by the project.

## **Work Breakdown Structure (WBS)**

Before determining schedules, resource requirements, and task durations, it is important to understand work breakdown structures for the project from a project management perspective. The Work Breakdown Structure (WBS) is essentially defined as the scope statement expanded to project and product deliverables representing 100% of the work to be accomplished throughout the entire project lifecycle. In some cases, the level of organizational project management maturity may not support the allocation of adequate time or resources to establish and build a complete WBS. However, it is arguably one of the most important tasks that any project manager and project team should accomplish prior to project execution. The WBS is the first place to look when creating plans for activity duration, resource requirements and cost management.

According to the PMBOK Guide, the WBS has the following attributes:

- It is a deliverable-oriented hierarchical decomposition of the work to be executed by the project management team to accomplish the project objectives and create the required deliverables.
- It partitions the project work into smaller, more manageable pieces of work, with each descending level of the WBS representing an increasingly detailed definition of the project work.
- The lowest level of the WBS consists of work packages, which are granular enough to be estimated and assigned.
- It organizes and defines every aspect of the scope of the project.

The WBS is divided into individual work-packages representing the decomposition of deliverables into something manageable. It is recommended that each work package not exceed 80 hours of work, or be less than 8 hours. Instructions on how to create a WBS and an example can be found in Appendix C.

It is recommended to review the WBS with all active team members for any additional changes. After changes to the WBS have been approved by the Sponsor you should confirm all resources needed and the estimated effort for each before moving on to scheduling.

A WBS Dictionary can be used to document each WBS element and its associated resource and technical requirements, scheduled activities, costs, quality and acceptance criteria, or any other element or characteristic which could help with its management. This element along with the associated WBS and scope statement combine to create the Scope Baseline.

## **Time Management**

As mentioned earlier, the primary purpose of the WBS is to identify all areas of work that must be accomplished during the project. The project manager and project team will need to have an estimation of how long each task will take to perform. Once the project deliverables have been broken down into work packages, it is much easier to fully define and sequence activities, estimate their resource requirements and their durations. After



the WBS has been completed to the lowest level of individual work packages, it is recommended that a network diagram be constructed to visually show the project tasks required to perform the work and their dependencies, including the predecessors and successors relating to each work task. A schedule can then be constructed based on this combined information. When completed, the result is the Schedule Baseline.

It is recommended that the project manager utilize whatever tools that the organization can provide to adequately assist in the project planning effort along with the WBS. There are many other software application suites available to organizations that perform well in scheduling and managing projects electronically. Microsoft Project is one of the many software applications that are currently available to assist organizations with project scheduling efforts.

## **Cost Management**

Once a schedule has been planned and approved, the next major task for the project manager is evaluating the project costs. The project cost management plan should identify all expected expenditures for the project. It is important to utilize the WBS in obtaining estimations of the project costs. It is recommended that cost planning begin at the work package level and include all projected and estimated costs including internal and external expenditures associated with each package and then rolled up for the total project cost. The project cost management plan should identify all expected expenditures for the project.

Cost Planning should closely consider the project scope and schedule as well as Enterprise Environmental Factors such as existing market conditions or purchasing, accounting and approval requirements, and Organizational Process Assets which can tools in assisting with cost estimating or tracking expenditures. Project size, complexity, exposure to risk, and quality requirements should be considered to determine costs associated with performance bonds or other instruments designed to protect against loss.

Having knowledge of the estimated project costs enables decisions to be made that will benefit the organization. The project manager should work with the project sponsor's financial department to establish a project budget. The project budget should consist of cost details and a cost-occurring timeline.

The Cost Management Plan sets the criteria for planning, estimating, budgeting, and controlling project costs and should include:

- Direct labor internal & external (contract)
- Direct materials and equipment
- Other direct costs - travel, incidentals
- Indirect costs (overhead) incurred during the project
- Administrative costs (leases, depreciation)
- Cost of quality
- Risk abatement, including contingency funds
- Marketing

- Research and development

The cost estimate and budget information and the project schedule are used to create the cost baseline. The Cost Management Plan should address how project costs will be tracked and managed. This may be in the form of periodic analyses and reports and should depend on the requirements of the project stakeholders.

## **Quality Management**

A quality management plan documents the standards and tolerances the project sponsor requires of product and project deliverables and how compliance will be measured. The quality plan should also identify strategies to achieve acceptable quality standards and what is to be done whenever quality measures or standards are out of tolerance or compliance, respectively.

Quality is one of the primary project constraints. Managing the scope, cost and time of a project should coincide with managing the quality of the project. Quality often takes a back seat in importance as a result of project budget cuts and schedules. It is recommended to emphasize quality during project planning and building quality control and quality assurance processes into the project costs and schedule. Quality assurance procedures might include things like design reviews, technical inspections or specific testing. Once standards for quality are approved and established, a Quality Management Plan should be incorporated into the overall project plan.

In determining project quality, establishing a testing process is crucial to project success. On large projects, testing may be done by a separate group of people. The testers work on developing test plans and the test environment. The customer should also require some sort of testing to ensure that the deliverable is what the customer requested and is within the defined scope. Testing durations should be included in the project schedule to ensure completion according to defined timeframes.

## **Resource Management**

Parallel to planning the project schedule, budget and quality, the project manager should create a Resource Management Plan. This plan should consist of all human and physical resources that will be required to complete the project. These resources can include facilities, equipment, and personnel. The staffing of a project is dependent upon the requested skills that were identified during Initiation. In resource planning, those skills are matched to the appropriate people. Depending on the staff currently available, the resources may come from a specific area within the organization. For some projects the cost and expertise might need to come in the form of contracting. This is a decision that should be made by the project sponsor. A Staff management plan will assist the project manager in defining resource types and levels needed and how long those resources will be involved on the project.

The resource planning process describes which roles and responsibilities are required to perform project activities and produce deliverables. Clearly defined roles will allow all project team members to understand what they are responsible for and to determine any

deficits in required skills or knowledge. If the staff assigned to the project does not have the level of skill needed, then training should be considered. If training is not possible then the cost and duration estimates for the tasks assigned to those roles should be adjusted accordingly. Construction of a Responsibility Assignment Matrix (RAM) is recommended to determine which resource should be allocated for appropriate project tasks.

Resource planning should also consider any activities that could improve the performance of the project team or maintain it at an acceptable level. Management and reporting of project staff is an important consideration whenever team members are normally supervised by other managers who may have to restrict project participation.

## **Communication Management**

Many Stakeholders, including the project team, require different kinds of information about the project. The Communication Management Plan should incorporate all stakeholders identified during project initiation. Understanding the flow of communication pertaining to what information is needed, when it is needed and in what format is the challenge in communications planning.

The Communication Management Plan should address questions such as:

- Will you have team meetings? What frequency such as daily, weekly, or monthly?
- Will a web portal, an email group, or a project web site be created?
- Which stakeholders need to receive communication, in what format, and how frequently?
- Will periodic status updates be disseminated? How frequently? What will be included in the status reports?
- How will the status of project risks be communicated?
- Is there a need for any PR or marketing?
- Who needs to know about what when the project's products are rolled out?

The Communication Management Plan should be a reference for all communications throughout the life cycle of the project. Review the communications plan with the key stakeholders and include it as a subsidiary plan within the project plan.

All planning documents, measuring documents and reports, and descriptive information generated during the project's lifecycle can be considered forms of communication. It is important to keep these and other project records for purposes of tracking actual events and lessons learned. The project manager should determine where to keep the Organizational Process Assets (OPAs) which includes all project data in both written and electronic format.

## **Risk Management**

The larger the scope of a project, the higher the project risk, and risks are often important considerations when electing to proceed with a project. A project manager must decide how to approach and plan the risk management activities for the project. Risks in all areas

should be reviewed and documented. Plans to avoid, mitigate or otherwise respond to significant risks should be developed.

A risk is defined according to the PMBOK® Guide is “An uncertain event or condition that, if it occurs, has a positive or negative effect on a project’s objectives.” A risk is an event which can occur based on probability and can have varying degrees of impact. A negative event is considered a threat, while a positive event is can be an opportunity. Risk identification and analysis should be administered throughout the life of the project. The frequency of an event occurring whether positive or negative within a project should be considered when planning for risk management.

During project planning, risks are identified and analyzed to see which risks need to be assigned a high priority based on the likelihood of their happening (probability of occurrence) and what would happen to the business if the risk happened (severity of impact). See Risk Analysis Instructions in Appendix C. Once the risks are prioritized based on their probability and impact, the more significant risks need to have response plans developed for each of them. It is recommended to continually review the identified risks, their level of priority, and your response strategies for each risk during the course of the project, as they can change over the project duration.

## **Procurement Management**

Project managers are required to engage procurement processes for goods and services for their projects from external vendors and contractors. Due to the nature and complexity of procurement, it is recommended to work closely with a procurement specialist within the sponsoring organization to ensure that procurement is performed correctly. The Procurement Plan should describe how procurements will be made and administered. Before the project manager becomes involved with the procurement process, a make-or-buy decision must be made by the business sponsor. This decision must be made to determine whether to use an outside contracting source, or to use the internal resources. Several factors should be considered when determining the make or buy decision:

- Does the sponsoring organization have the expertise necessary for success?
- Who can perform the work most efficiently?
- Does the sponsoring organization assume all agency and constituent risks?

Whenever contracts are required for a project, the procurement plan should describe how each contract will be awarded and managed. Finally, it is recommended that the project manager be involved in the procurement process as early as possible, ideally beginning at the initiation stage of the project.

## **Other Project Planning Considerations**

When planning a project, one thing to consider is how the project will impact the organization. Will people need to change the way they do their job? If so, then part of the project plan should describe how to help people understand and make the changes with a little difficulty as practical. Tasks like training, communications to end users and sponsor presentations need to be part of the project activities. These impacts are

commonly referred to as cultural changes of a project. It is important for a project manager to monitor and record any cultural changes as their impacts can affect perception of ongoing and future projects within an organization.

A critical component of project planning is Organizational Change Management. A project manager needs to be aware of how changes within the project might impact the organization.

### **Change Control Planning**

Changes in a project plan can come from anyone ranging from the team, the customer, the stakeholder, the sponsor, senior management, regulatory agencies, legislation and others. Regardless of the source, a project manager must be prepared for any change, as changes will inevitably occur within a project lifecycle. It is of paramount importance for a project manager to be able to control change as much as possible and manage the changes as they occur. It is recommended that a project manager establish a change control process for the project to address any and all changes. The change control process must be reviewed with the project stakeholders for their understanding of how changes will be addressed. The change control process is included in the change management plan, which is another subsidiary plan of the overall project plan. The change management plan should identify the level of authority for any change decisions that will be made during the project.

A Change Control Board (CCB) could be established to reject or approve any changes that will occur during the project. The CCB, according to the PMBOK® Guide is “a formally constituted group of stakeholders responsible for reviewing, evaluating, approving, delaying, or rejecting changes to the project.”

### **From Planning to Implementation (Execution)**

With the completion of the project management plan, the project can move on to Execution. This plan provides the road map for moving to implementation or execution. During Execution, the actual work defined in the project plan is performed. Once the project plan has been completed and approved by all sponsors, the project manager should schedule a kick-off meeting to get the project rolling.

# Common Methodology Framework

## Executing



<b>Purpose</b>	The primary purpose of Executing is to complete the work defined in the Project Management Plan to achieve the project's objectives.
<b>Key Inputs</b>	<ul style="list-style-type: none"> <li>• Approved Project Management Plan including all subsidiary plans</li> <li>• Completed planning checklist</li> <li>• Work Breakdown Structure</li> <li>• Project baselines</li> <li>• Procurement documents</li> <li>• Approved functional and technical requirements</li> </ul>
<b>Key Outputs</b>	<ul style="list-style-type: none"> <li>• Deliverables</li> <li>• Vendor proposals</li> <li>• Communications</li> <li>• Completed execution checklist</li> </ul>
<b>Completed by</b>	Project manager, project team
<b>Necessary Participants</b>	Project team, key stakeholders

### Introduction

The primary purpose of the Executing process group is to perform and complete the work defined within the Project Management Plan. In addition to completing deliverables, these activities focus on managing project resources, following processes and communication of project information.

The role of the project manager during execution is to manage the work while coordinating team members, managing stakeholder expectations and providing project information to all project sponsors and team members. The project manager should also manage any project changes and risk events as well as shepherd any procurement process set forth in the scope of the project.

The project manager is responsible for determining which processes are necessary given the complexity and size of the project and what level of detail should be included in each of the following processes:

- Direct and manage project execution
- Perform quality assurance
- Acquire and develop the project team
- Manage the project team
- Information distribution
- Manage Stakeholder Expectations
- Conduct Procurements

### **Directing and Managing Project Execution**

“This is the process necessary for directing the various technical and organizational interfaces that exist in the project to execute the work defined in the project management plan.” (PMBOK)

The primary focus of this process is to complete the deliverables as documented in the project management plan. In addition to these deliverables, approved changes, corrective actions and preventative actions are implemented.

A corrective action is a response to an actual deviation from the project’s performance baselines. Corrective actions should bring expected future project performance into conformance with the project management plan. A preventative action is an action that should reduce the probability of negative consequences associated with project risks. A preventative action is a response to an anticipated or possible deviation from performance baselines. Recommended changes, corrective and preventative actions are reviewed through the Integrated Change Control process. The changes are either approved or denied. If approved, these changes are implemented during the execution of the project. Integrated Change Control is further described in Monitoring and Controlling which is in the next section of this document.

### **Perform Quality Assurance**

Quality Assurance activities within the project should seek to satisfy all of the relevant standards and requirements of the deliverables being produced by the project. Quality assurance should be performed throughout the project. It is typically performed by the quality assurance department within an organization. Project managers can influence quality of their projects by implementing quality assurance activities that are quantifiable and conveyable.

Some of the tools that can be utilized within a project to support quality assurance include the following:

- Cost of Quality - Addresses the conformance costs versus the nonconformance costs associated with the project.

- Cost-Benefit Analysis - The process of estimating the ratios of tangible costs and benefits within a project. These can include the return on investment (ROI), the payback period, and the law of diminishing returns among other financial measurement tools.
- Benchmarking – Used for comparison of project characteristics against other similar project characteristics.
- Design of Experiments – Retains a constant variable in order to observe changes in another variable.
- Flowcharting – A type of algorithm depicting the relationships between various elements within a system.
- Quality Audits – Reviews of a project’s compliance with an organization’s quality policies and activities.

### **Acquire and Develop the Project Team**

A well managed project team will have the skills necessary to complete their project tasks and share feelings of trust and cohesiveness among team members that increases productivity through greater teamwork. The project manager has the responsibility to understand what motivates each team member and apply this understanding to promote the project team’s effectiveness. The project manager should always enlist the help of senior management in determining the project team member roster.

Keys to developing a project team are to assess each team member’s level of expertise and acquire training for team members as needed, establish ground rules for team member behavior, conduct team building activities to build a cohesive and productive team and give recognition and rewards to deserving team members.

In order for the project manager to be successful during the execution of a project, they must refrain from performing any of the work tasks that should be performed by the project team. Many times a project manager can become so involved in the project, that some of the work the project team should be performing ends up being performed by the project manager.

Examples of tasks that a project manager should NOT perform are:

- Develop code
- Build a server
- Construct a webpage
- Implement organizational security policies
- Perform unit or system tests
- Repair a PBX

There can be some exceptions made based upon the project managerial responsibilities within an organization; however generically stated, a project manager should manage the work being accomplished and not perform the work responsibilities of the team.



## **Manage the Project Team**

Managing the project team “involves tracking team member performance, providing feedback, resolving issues, and coordinating changes to enhance project performance.” (PMBOK)

Conflict resolution is the responsibility of the project manager. Effective conflict management results in increased productivity and positive working relationships. Issue management is a critical function of managing a project team. During the execution of the project, issues will arise that need to be resolved. These issues may be as simple as answering a question about a workflow or as complex as dealing with a policy question that affects the organization. Regardless, all issues need to be tracked to resolution with some type of tracking log. If an issue cannot be resolved in a reasonable timeframe or by the project team, then it should be escalated to the appropriate level of management to assist with the resolution. Conflict resolution is also the responsibility of the project manager. Effective conflict management results in increased productivity and positive working relationships.

It is essential for the project manager to communicate frequently with the team members. This is necessary in order to maintain an awareness of any problems that the team members might be facing. It also facilitates that project requirements and design specifications are being met. Many forms of communication throughout the project lifecycle can be utilized, including formal weekly meetings with all team members, as well as informal day to day discussions via email and face to face discussions.

## **Information Distribution - Communications**

In Planning, the communications to stakeholders’ and the flow of information is identified and documented within the communication management plan. During Execution, those communications are performed. In almost every lesson learned exercise, communication is identified as an area for improvement. It seems impossible to communicate enough during the project lifecycle.

Information should be timely and delivered with a level of detail that should be reflective of the audience receiving the communication. For example technical team members may need very detailed accounts of project status meetings and action items where the customer and project sponsor need a high level summary of the status of the project and its deliverables.

There are many ways to distribute information. These include project team meetings, formal written status reports, email, meeting notes or verbal presentations to executive management. The project manager must review the communication requirements of the stakeholders and determine how best to meet their needs.

## **Manage Stakeholder Expectations**

Managing stakeholders is critical to a project’s success. Stakeholder communication requirements are documented in the communications management plan during project planning. In addition to fulfilling these communication requirements, a project manager

must have an understanding of what is important to stakeholders as well as be able to continually communicate related project information. By doing this type of communication proactively you maintain an open and continuous dialogue with stakeholders and build a relationship of trust and credibility.

As the project progresses, the stakeholder expectations have a natural tendency to change. The scope of the project might specify something different in the beginning of the project, than what the customer's expectations are currently. The project manager must understand the variance between the initial scope and the current expectation and be able to translate it into a change request, or explain with appropriate mediation to the customer how the project scope has drifted from the original specifications. The project manager can minimize the tendency of "expectations drift" through regular communication with the customer. Scope Creep is the common term that this expectation drift refers to. Managing scope creep is an extremely important and necessary task for the project manager.

## **Conduct Procurements**

"Conduct Procurements is the process of obtaining seller responses, selecting a seller, and awarding a contract. In this process, the team will receive bids or proposals and will apply previously defined selection criteria to select one or more sellers who are qualified to perform the work and acceptable as a seller." (PMBOK)

The Conduct Procurements process is composed of the following sub-processes:

- Request seller responses
- Select sellers
- Contract administration
- Contract closure

The project manager plays a key role in the procurement processes. It is important to understand the procurement process, contract terms and conditions and make sure the contract addresses all the project management requirements (e.g. meeting attendance, reports, communication and governance). The project manager should help tailor the contract to the unique needs of the project, incorporate the procurement processes and procurement forms into the schedule and work closely with the contract manager to manage changes to the contract throughout the project.

During Execution the project manager works closely with procurement and contracting staff to manage the process of requesting seller responses and selecting sellers. Requesting seller responses consists of publishing procurement documents to which sellers can respond and answer seller questions.

Selecting sellers is the process of reviewing proposals and selecting a seller. It is often advantageous to have the top few sellers validate their proposals by demonstrating their product or services to verify the accuracy of their claims. Once a seller is chosen, a contract is written to ensure the delivery of products or services. A contract can be a

complex document or a simple purchase order. During Monitoring and Controlling the contract and changes to the contract are administered and managed.

### **Project Baselines**

The baseline of a project is considered to be fixed and only adjustable based upon the approved changes that happen within a project. The overall project plan typically includes but is not limited to three separate baselines for budget, schedule, and scope. Baselines should be used to determine if the project is on track and is where it should be relative to the cost, schedule and scope.

### **Execution and Monitoring & Controlling**

Although the Executing and the Monitoring & Controlling process groups are defined as separate process groups within the PMBOK guide, the majority of tasks within these two groups are performed concurrently. The next section goes into a detailed explanation of the Monitoring & Controlling process group.

# Common Methodology Framework

## Monitoring and Controlling



<b>Purpose</b>	The purpose of the Monitoring and Controlling process group is to “observe project execution so that potential problems can be identified in a timely manner and corrective action can be taken, when necessary, to control the execution of the project.” (PMBOK Guide)
<b>Key Inputs</b>	<ul style="list-style-type: none"> <li>• Approved Project Management Plan including all subsidiary plans</li> <li>• Schedule Baseline</li> <li>• Budget Baseline</li> <li>• Scope Baseline</li> <li>• Work performance information and reports</li> <li>• Risks response strategies</li> <li>• Contracts</li> </ul>
<b>Key Outputs</b>	<ul style="list-style-type: none"> <li>• Project plan updates</li> <li>• Approved changes</li> <li>• Accepted deliverables</li> <li>• Performance measures</li> <li>• Risk register updates</li> <li>• Contract changes</li> <li>• Resolved issues</li> <li>• Corrective actions</li> <li>• Completed Monitoring and Controlling checklist</li> </ul>
<b>Completed by</b>	Project manager
<b>Necessary Participants</b>	Project team, key stakeholders

### Introduction

Monitoring and Controlling is the final set of processes and activities of project implementation that takes place prior to project closing. The majority of activities in this

process group are performed concurrently with the Execution process group. It is the responsibility of the project manager to observe and measure the project's progress and completion of deliverables against the requirements documented in the project management plan that was completed during Planning.

## **Monitoring and Controlling**

The project manager is responsible for determining which processes are necessary given the complexity and size of their project and to what level of detail should be included in each process. The Monitoring and Controlling Process group includes the following processes:

- Monitor and control project work
- Perform integrated change control
- Verify and control scope
- Control Schedule
- Control Costs
- Perform Quality Control
- Report Performance
- Monitor and Control Risks
- Administer Procurements

### **Monitor and Control Project Work**

The purpose of monitoring and controlling project work is to measure the project's progress and deliverables against the project's requirements and performance baselines. Baselines are determined during the project's planning activities. They include but are not limited to scope, schedule and budget baselines.

It is critical to determine deviations from baselines as soon as possible so that actions can be taken to bring the project back into alignment with its objectives. This process focuses on preventing problems and should not be a constant "fire fighting" activity.

Communicating schedule/budget variances as they are identified enables others (e.g., project sponsors or department management) to help with an appropriate response and/or prepare for the probable outcome (a delay in the project schedule). Do not escalate all variances before they have been analyzed for the root cause and potential corrective actions considered. Conversely, do not try to hide significant variances with hopes that they will take care of themselves. It is most advantageous to the project health when problems are identified earlier than later. It is the responsibility of the project manager to report problems and their impacts as early as possible.

### **Perform Integrated Change Control**

Changes are a normal and necessary part of project management. Integrated Change Control is a process where all requested changes are documented, analyzed for impacts and either approved or denied. Often times many details are not known when planning project. As more unknowns become clear, changes to the project naturally follow. The

key to successfully managing change is not to avoid it or try to prevent it, but to actively monitor and document change.

Changes in the project plan can come from many sources. They can come from the sponsor, the customer, the project team, the industry or regulatory agencies to name a few. Project managers must be prepared for changes, as many of the changes are inevitable and valid within the course of the project lifecycle. As changes will happen in any project, the project manager must have a process written into the project plan that applies to changes within a project. All change requests regardless of origination should be submitted through a formal written format. The change process should be clear and specific on who has the authority to direct changes as well as the level of change authority. The change process should clearly identify the empowerment of decision making relative to changes within the project.

Providing a simple change process encourages team members, customers and stakeholders to follow the process instead of circumventing it. Use a simple change management form and approval process to record and track all changes. Once changes are approved the project management plan is updated and the change is implemented as part of the execution of the project. Whenever a change is not approved documentation should adequately describe the reasons for the denial.

For some small projects it may be sufficient for the project manager and sponsor to review all change requests and determine if they should or should not be implemented. On larger projects it is recommended to have a Change Control Board that reviews and makes decisions regarding the approval or denial of change requests. The board may consist of the project manager, customer, subject matter experts, sponsor or other stakeholders. According to the PMBOK Guide a change control board is “a formally constituted group of stakeholders responsible for reviewing, evaluating, approving, delaying, or rejecting changes to the project.”

A change control board when presented with a change has the following options:

- Reject the change. If rejected, provide an explanation of reasoning for rejection.
- Accept the change as presented. The change control board in this scenario would not need to give any further explanation for approval.
- Accept the change with revisions. The change control board should provide an explanation for this action.

Whether through the project manager, sponsor, or CCB, a summary of all change activities should be included in the status report.

## **Verify and Control Scope**

Scope verification should be performed by the project manager and project team along with the customer to ensure that all deliverables are completed within the guideline set forth in the scope document. Scope verification should also provide a formal acceptance process for the customer and/or sponsor to formally accept the project deliverables. Changes in scope should follow the processes defined in the Scope Management Plan.

## **Control Schedule**

“Control Schedule is the process of monitoring the status of the project to update project progress and manage changes to the schedule baseline”. (PMBOK) When managing the project schedule it is important to determine the current status of the project schedule, influence factors that could impact the schedule, manage each change and act to bring schedule variances back in line with the schedule baseline.

## **Control Costs**

“Control Costs is the process of monitoring the status of the project to update the project budget and manage changes to the cost baseline”. (PMBOK) Activities related to cost control includes influencing the variables that create change to the cost baseline, verifying that cost expenditures are within the limits of the authorized funding, prevent unapproved changes from being implemented and act to bring cost overruns within acceptable limits.

## **Perform Quality Control**

Quality control is performed throughout the project. “Perform Quality Control is the process of monitoring and recording results of executing the quality activities to assess performance and recommend necessary changes.” (PMBOK) In some cases organizations will have a quality control department that will assist with these activities. The goal of quality control is to identify causes of poor process or product quality and act to eliminate the root cause.

Useful tools and techniques for quality control are as follows:

- Cause and effect diagrams
- Control charts
- Flowcharting
- Histogram
- Pareto chart
- Run chart
- Scatter diagram
- Statistical sampling
- Inspection
- Approved change requests review

Additional information about each of these techniques can be found in the PMBOK guide.

## **Report Performance**

Performance reporting is a communication process that informs the team, sponsor, customer and other key stakeholders about the current state of the project as measured against the project’s schedule, cost and scope baselines.

Performance reporting can include a trend report that examines the project results over time to see if performance is improving or a forecasting report that predicts future project status and performance. Performance reporting helps the team know where they need to focus their attention and where to apply corrective or preventative actions.

Monitoring project performance can be summarized in the following;

- Compare actual results against the baselines for budget, time, scope, schedule, quality and risk to determine variance.
- Identify the variance between the six baselines – budget, time, scope, schedule, quality and risk.
- Respond appropriately. If there are no significant variances, then maintain progress according to the project plan.

One common method to measure project performance against project baselines is the Earned Value Technique. This tool integrates cost, time and work completed where the forecasting results can be used to predict project completion dates and costs. Details about how to utilize this technique and calculate earned value are beyond the scope of this document. Please refer the PMBOK guide for more information about the Earned Value Techniques and how the project can greatly benefit by performing earned value analysis.

## **Monitor and Control Risks**

During the initial project planning process, project risks are identified, analyzed and prioritized. Risks that are identified as having a high probability and/or a high impact on the project have risk response plans and mitigation plans developed. This process does not end during planning. Risk Monitoring and Control is the process of identifying, analyzing, and planning for newly arising risks, while monitoring those risks identified in Planning. The project manager should continually be looking for risks that have the potential to become reality. If the project manager does not have a risk response for a risk that has occurred, the project manager cannot appropriately and efficiently react to that risk. This inefficiency can create a problem within the project.

The project manager should periodically conduct a risk review with the project team and review all of the documented project risks. There is always a possibility of risks occurring that were not documented originally in the project plan. These potential project risks should be discussed with the project team as well. The frequency of these risk reviews depends on the size and complexity of the project and should be determined by the project manager. It is recommended that risk reviews occur at least one a month. During the review, determine if all of the identified risks are still present or if new ones have occurred. If new risks are identified, update the risk management plan and perform an analysis of the risk to determine its probability and impact. If warranted, create a risk response plan and assign a risk response owner.

If an identified risk does occur, implement the response plan that was identified in the risk planning process. Communicate to the stakeholders that the risk has arisen and the planned measures that are being taken to address it. This communication can be in the next status report or sooner if the impact is high. As the response is applied, keep the



stakeholders informed of the impact to the project and any changes that may arise due to the risk.

### **Administer Procurements**

Administering procurements is “the process of managing procurement relationships, monitoring contract performance, and making changes and corrections as needed.” (PMBOK)

Buyers and Sellers administer contracts for similar purposes. “Each must ensure that the both parties meet their contractual obligations and that their own legal rights are protected. The Administer Contracts process ensures that the seller’s performance meets procurement requirements and that the buyer performs according to the terms of the legal contract.” (PMBOK)

### **Moving from Monitoring & Controlling to Closing**

After the completion of activities in both the Executing and Monitoring & Controlling process groups, the project moves to the Closing process group. A checklist from each of these sections will assist the project manager in identifying all documentation and tasks to be completed prior to moving into Closing.

# Common Methodology Framework

## Closing



<b>Purpose</b>	The purpose the Closing process group is to finalize all project activities and formally bring the project to an end. Valuable lessons learned are also gathered on what worked well and what did not work well within the project.
<b>Key Inputs</b>	<ul style="list-style-type: none"> <li>• Final deliverable acceptance</li> <li>• Completed execution checklist</li> <li>• Completed Monitoring and Controlling checklist</li> </ul>
<b>Key Outputs</b>	<ul style="list-style-type: none"> <li>• Administrative closure documentation</li> <li>• Contract closure</li> <li>• Updated organizational project assets (OPA)</li> <li>• Formal sponsor acceptance</li> <li>• Lessons learned</li> <li>• Actual versus planned results</li> </ul>
<b>Completed by</b>	Project manager
<b>Necessary Participants</b>	Project team, key stakeholders

### Introduction

Closing the project involves a handful of steps that complete the transition to the customer and provide guidance for future projects.

The Closing process involves performing the project closure portion of the project management plan and includes the processes used to formally terminate all activities of a project or project phase, hand-off of the completed project to others, or close a cancelled project. Project closing also provides guidance for future projects based upon current project experiences and identifies positives and negatives in the project documenting the experience for future use.

Many project managers have the misconception the project has ended when the product or service is delivered to the customer. Project closure goes a level beyond the product or service delivery. Many projects have a production system that is implemented when the

project is completed. Project deliverables can include a mainframe process, a web page or a database, as well as a number of other production-oriented systems. A project manager should complete a myriad of closeout activities, including verification of contractual compliance, scope verification, customer and stakeholder satisfaction, and lessons learned sessions. The project plan should identify all tasks associated with project closeout, including allocated resource costs, schedules and resource assignments.

By completing a lesson learned process, the project team identifies ways to improve the next project. By archiving all project documentation, these assets will be available for the next person to use as a starting point in their project.

With the pressure of having to reassign team members from one project to the next, it is recommended the project manager have a closeout plan to identify the various resources on the project and when their roles are complete.

To begin the process of closing out a project, the project manager and project sponsor will review all project deliverables and verify that the project was completed correctly and satisfactorily. A deliverables log can be used and maintained as a primary record of project deliverables provided through the project. The goal is to obtain the customer/sponsor agreement that the project is complete based on the satisfactory completion of the statement of work.

The following two procedures are developed to establish the interactions necessary to perform the closure activities across the entire project or for a project phase.

- Close project
- Close procurements

## **Close Project**

This process is necessary to finalize all activities across all of the process groups to formally close the project or a project phase and includes the following:

- Lessons Learned
- Customer Satisfaction Surveys
- Collect Project Records
- Archive Project Documentation

### Lessons Learned

It is very rare that a project will run absolutely perfect. To this end, it is important to review each project after completion or termination to determine what could have been done more effectively. This requires that all parties involved with the project have input to the process of reviewing the project for the purpose of improvement. A project's lessons learned session is not convened to assign blame, but rather to learn from prior mistakes to ensure that the same mistakes are not repeated. Most organizations will in fact repeat some errors, but in organizations committed to improving project

performance, the failure rate continues to drop. This is predominantly utilized in the identification of previously encountered failures.

If the organization managing projects is serious about improving its project performance, there should be a tendency to NOT repeat mistakes from project to project. While all projects will have their unique characteristics, most projects will also have many common activities and issues. Even if a given problem occurs in a given project, learning from the mistake does not necessarily ensure that it will not re-occur. Rather, the key to performing the Lessons Learned is to ensure that the same mistakes are not repeated over and over.

Lessons Learned is also the place where defined project metrics are captured and then compared to project service levels. Also, this is the point at which planned versus actual metrics are captured and evaluated to understand the effectiveness of the original project planning.

It is another recommendation for the project manager to establish a review of the best practices approach for projects that have had similar products or services. After each project, even a completely successful project, review what DID NOT work and what DID work. If necessary, make changes to processes, accountability, artifacts, and responsibilities in an effort to curb the tendency to make the same mistakes. Keep a formal log of those changes across projects where problems have historically occurred and where changes have been made. Establish rules of engagement for the Lessons Learned so that input is not taken personally. Input can be offered focusing on improving the organizations ability to run projects more effectively. No contracts or agreements should be signed which prohibit the capability to perform project Lessons Learned. Holding such Lessons Learned meetings is one of the most important activities in improving organizational project management performance.

Lessons Learned may be done at the end of the project lifecycle for smaller projects. With a large or multi year project that covers a longer span of time, Lessons Learned may be done more frequently or at the end of each phase.

#### Customer Satisfaction Surveys

At the end of the project, send the Customer Satisfaction Survey for Project Implementation to the project sponsor and one or two other key stakeholders and customers. Gauging customer satisfaction is a good way to measure the results of the project efforts. If the ratings on the projects are very high or are improving, it is a good indication that your projects are being done well. In contrast, if the ratings are low or dropping then it may indicate a need to review the processes followed in the project and look for areas to improve.

#### Collect Project Records

During the life of the project documentation will be collected such as project files including Statements of Work, Project Charters, scope, cost, schedule, baselines, project

calendars, risks and issues. Meeting minutes, presentations, and other communications artifacts are also collected.

Historical information should also be collected such as, Lessons Learned, Customer Satisfaction Surveys and Project closure information.

Financial information such as estimated and actual hours, costs, budgets, and any project cost overruns should be collected.

#### Archive Project Documentation

Once the project is complete, all the project documentation should be archived for future reference. This “organization knowledge” can be used to improve estimating for future projects. Other project documentation could be a Formal Acceptance Document, Project Files, Project Closure documents and Historical Information.

### **Close Procurement**

This process includes completing each project procurement and each contract (when a contract is present). Closing each contract applicable to the project or a project phase can include verification that all deliverables were acceptable, resolution of open items, reconciling any changes to the contract and other supporting documentation, such as, technical approach, product description, or deliverable acceptance criteria and procedures, and formal acceptance. The contract terms and conditions can also prescribe specifications for contract closure that must be a part of this closeout procedure. Typically, each organization will have their own unique process for administering their contractual policies and contracts. As a project manager, you must understand what is required for the agency that you are associated with.

# Common Methodology Framework

## Conclusion



Thank you for your interest in furthering your study in Project Management. It is the sole intent of the Project Management Users Group to deliver a document that will assist and guide you through the challenges of successfully managing all types of projects.

Throughout this document many references have been used pertaining to the Project Management Body of Knowledge (PMBOK). The Project Management Body of Knowledge (PMBOK) is a collection of processes and knowledge areas generally accepted as best practice within the project management discipline. The Project Management Institute (PMI) fully endorses and supports all areas of project management with the industry standard version of PMBOK. With more than half a million members and credential holders in over 170 countries, PMI is the leading membership association for the project management profession.

For further clarification and reference pertaining to the project management profession, please visit the Project Management Institute's website at <http://www.PMI.org>.

Many bookstores and resellers offer the Project Management Book of Knowledge as a purchasable product. PMI has just recently released the new version 4.0.

# Common Methodology Framework

## Document Change Control



### DOCUMENT CHANGE CONTROL

<i>Date</i>	<i>Version Number</i>	<i>Revised By</i>	<i>Comments</i>
6/22/2009	2.0	PMUG Methods and Process Group	Final Draft
10/1/2009	2.0	PMUG Methods and Process Group	Final Version – sent to EPPMO Director for Review
10/29/2009	2.0	PMUG Methods and Process Group	Final Version – sent to EPPMO Director for Posting
7/2/2010	2.1	Kris Saline	Updated Project Scaling Worksheet & Project Status Reporting Template and Added Project Health Status Indicator Setting Worksheet
5/10/2011	2.2	Nancy Cassell	Removed all templates