Computing Services Network
Project Methodology

Prepared By:
Todd Brindley, CSN Project Manager

Version # 1.0 Updated on 09/15/2008
# Project Methodology:

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<td>Document Created</td>
</tr>
<tr>
<td></td>
<td>8/28/08</td>
<td>Kimberly Harper</td>
<td>Document Reviewed</td>
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<tr>
<td></td>
<td>09/15/08</td>
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<td>Document Updated</td>
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<td></td>
<td>10/15/08</td>
<td>Todd Brindley</td>
<td>Started adding Links to On-Line Templates</td>
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<td></td>
<td>12/18/08</td>
<td>Todd Brindley</td>
<td>Director Review changes incorporated, template links complete.</td>
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INTRODUCTION

This document describes the methodology used for project development by University of Nebraska’s Computing Services Network (CSN). Since this methodology can be used for any CSN project, the terms 'product' and 'process' are used to describe the primary deliverable for the project whether it be process redesign, installation of a new system, or development of a training class.

CSN Project Methodology is designed to:

✓ Produce products right the first time
✓ Focus on the right thing
✓ Maintain stable and reliable core systems
✓ Support the university’s goals and initiatives
✓ Deliver timely products to the customers
✓ Deliver and support cost-effective products
✓ Reduce product redundancy

In turn, these benefits are passed on through improved customer service:

✓ Assurance we are doing the "right thing"
✓ Early involvement of key players
✓ Delivery time reduced by building efficiencies in the process
✓ Consistency in delivering quality products through repeatable processes
✓ Continuous improvement in delivery of product / services by using lessons learned
✓ Improved internal and external communications
✓ Assurance that the product delivered supports the customer's need

What is a project methodology?

A project methodology is a process with which all members of a project team are familiar. It gives rigor and structure to team efforts that encourages and helps members of a team move toward an agreed upon goal. A methodology is used to solve problems. It is a systematic way of approaching a wide variety of projects.

The goal of any project is to provide a solution that best serves the requestor's need in the most time and cost-effective manner. Accomplishing this goal requires use of a certain "thought process" that considers:

✓ How the changes fit within the university environment and goals
✓ The need the customer has identified
✓ The best way to meet the customer's need
✓ How the solution will be implemented
✓ How the solution affects the customer and CSN

The primary benefits of a methodology are to:

✓ Foster communication and understanding through the use of common terminology
✓ Provide a means of turning complex projects into manageable increments of work, each of which produces tangible products
✓ Promote quality because it is repeatable and can be continually honed and improved
✓ Establish roles and responsibilities
✓ Establish the use of standards
CSN Project
Methodology

✓ Establish accountability
✓ Support the definition of short-term goals which can, in turn, meet long-term goals
✓ Provide visibility and predictability over the progress and outcome of a project. Although the final outcome is the customer's primary concern, the methodology provides a controlled way to track the steps to that outcome.

What are the methodology phases?

The standard project planning approach is to establish a defined sequence of activities to produce the correct project deliverables. The CSN Project Methodology accomplishes this by organizing the methodology process into the following five phases:
✓ Initiating
✓ Planning
✓ Executing
✓ Monitoring & Controlling
✓ Closing

Since management of a project is a finite effort, the Initiating Process starts the cycle and the Closing Process ends the cycle. The integrative nature of project management requires that the Monitoring and Controlling Process interact with every aspect of the other processes.
Reviews and Approvals

Reviews and approvals of project deliverables are required at specific points in the project to ensure the customer needs are being met as defined in the project goal(s) and to comply with quality control requirements. This methodology defines reviews and approvals as:

- **Review** - internal control performed by members of the project team
- **Approval** - formal documented approval required for audit purposes

Project Methodology Tools

**Project Templates**

A template is a form with placeholders for certain pieces of information critical to defining the deliverable for the project. Templates create a consistent look for CSN project documents and serve as a guide in gathering and reporting information in a standard manner. Templates and their instructions can be accessed in the Templates folder located in the CSN nTouch site CSN-Teams-Portfolio Management-Document Library- Project Management.

**Knowledge Areas**

The Project Knowledge Areas located in the CSN nTouch site CSN-Teams-Portfolio Management-Document Library- Project Management folder, include tools and information for managing and working on projects. Whereas the project methodology identifies "what" is to be done, the knowledge areas provide "how" it should be done.

**Glossary**

For a definition of terms used in this document, access the glossary in the CSN Project Methodology located on the CSN nTouch site.

**Continuous Process Improvement**

The CSN Project Methodology is a tool that may change over time. If improvements are identified, they will be addressed by the PMO who maintains the standards.

For Continuous Process Improvement (CPI) suggestions please e-mail pmo@nebraska.edu.

The electronic version of the CSN Project Methodology can be accessed from the CSN nTouch site.

**Project Portfolio Management Planning**

Project Portfolio Management Planning is a series of activities that must occur which will identify, evaluate, approve and prioritize projects to be managed through the Project Methodology supporting CSN projects. CSN Leadership will play a major role in these activities. A new process by which projects are identified, evaluated, approved and prioritized will be created along with the implementation of the Project Methodology.
PORTFOLIO MANAGEMENT PLANNING

Portfolio Management planning activities occur prior to and outside of the project methodology. Portfolio Management activities are performed by CSN Leadership. These activities may include:

✓ Project identification
✓ Project approval
✓ Project prioritization
✓ Resource forecasting
✓ Establishing a method for tracking project time and costs

The process begins with Project Request template. The Project Request is divided into four sections, Project Description, Project Justification, Resource Requirements and Risk Identification. All four sections are required for completion for the project to be considered.

Project Description identifies the project background, customers and stakeholders as well as the current CSN Service area.

Project Justification provides details on how the project aligns with the metrics identified by CSN. Value, Alignment, Timeline, Urgency and RGT (Running, Growing, Transforming) all factor into the priority given to requested projects.

Resource Requirements attempts to identify technical and labor resources required for project execution.

Risk Identification identifies project risk that are known at the time of the project request.

Portfolio Management Planning activities:
✓ Create Project Request Template
✓ Review Project Request Template
✓ Project Categorization
✓ Project Prioritization
Activity: Create Project Request Template

<table>
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<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
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<tr>
<td>Create Project Request Template</td>
<td>Idea for project</td>
<td>Project Request</td>
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<td>Requestor</td>
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</table>

**Create Project Request Template**

The requestor completes the four sections of the template; Project Description, Project Justification, Resource Requirements and Risk Identification.

Activity: Review Project Request Template

<table>
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<td>Make recommendation to proceed</td>
<td>Project Request Template</td>
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<tr>
<td>Communicate Checkpoint Decision</td>
<td>Checkpoint Decision</td>
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</table>

**Review Project Request Template**

The Project Request template is evaluated by CSN Leadership. CSN Leadership determines if more information is needed, approves or does not approve the project request. Decision for project request is delivered to requestor so next steps may be executed.

If approval is given for the Project Request, the project moves forward to Project Categorization and Prioritization.

**Communicate Checkpoint Decision**

The requestor is notified when the request is approved, denied or if additional information is required. If it is denied, the requestor is given the reason.

Follow this link to view the *Project Request Template*
Activity: Project Categorization

<table>
<thead>
<tr>
<th>Description</th>
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<td>Initial Project Size</td>
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Project Categorization

CSN Leadership will review the details of the Project Request to determine the Project size and complexity. Leadership will review the following criteria to determine if the Project is identified as small, medium or large.

- ✔ Visibility
- ✔ Risk
- ✔ Effort
- ✔ Return
- ✔ Cost
- ✔ Duration
- ✔ Work Groups

Follow this link to view the Project Categorization template

Activity: Project Prioritization

<table>
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<tr>
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<td>Project is Prioritized</td>
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</table>

Project Prioritization

CSN Leadership will review the details of the Project Request, University and CSN Strategic Initiatives and current Demand workload to determine the Project’s priority. Leadership will review the following criteria to assist in determining the priority of the Project.

- ✔ Production Issue
- ✔ Service Continuity
- ✔ Mandated Timeline
- ✔ Executive Factor
- ✔ Service Justification
- ✔ Monetary Loss or Liability

Follow this link to view the Project Prioritization template
The Initiating Phase consists of the processes that facilitate the formal authorization to start a new project or a project phase.

The initial scope description and the resources that the organization is willing to invest are further refined during the Initiating phase. If not already assigned, the project manager will be selected. Initial assumptions and constraints will also be documented. This information is captured in the Project Charter and, when it is approved, the project becomes officially authorized. Although the project management team may help write the Project Charter, approval and funding are handled external to the project boundaries.

Projects that are categorized as medium to large efforts based on the categorization factors or that are rated a high priority will be required to develop a Project Charter. Projects that are categorized as small efforts or an overall lower priority will be required to develop a Project Scope Statement. Both will not be required for any given single project.

Activity: Develop Project Charter

<table>
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<td>Project Sponsor</td>
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</table>

Develop Project Charter

A Project Charter is the written authorization for the project, project manager and team members. The charter defines the project objectives, the customer’s core business need, high level requirements, assumptions and constraints. Project organization, budget and preliminary scope are also addressed. The Project Charter answers the following questions:

✓ What is the business need of this project?
✓ What are the business objectives?
✓ What is the scope of the project?
✓ Are there assumptions, exclusions, or constraints related to the project scope, resources or schedule?
✓ Is there additional documentation that needs to be included with the Project Charter?
Although the amount of information known at this point in the project is limited, the Project Charter establishes the framework on which the rest of the project is built. Emphasis is placed on gathering sufficient information to provide a clear understanding of the request and the business need on which it is based.

Follow this link to view the Project Charter template

Executive Summary
Provide a brief description of the project background. What situation exists that warrants the need for this project. Include a high level project description or product requirements. Also, include the intended audience for which the charter will be reviewed and approved.

Preliminary Project Scope Statement
The scope definition sets the boundaries for the project, i.e., identifies conditions under which the project is planned, budgeted and managed. What the project includes and what it does not include. It is broken down into eleven possible components. Not all components may be necessary for all projects. The larger more complex or risky projects will require all components be completed.

Project Objectives: Project objectives include the measurable success criteria of the project. Objectives may include:
- Business
- Cost
- Schedule
- Technical
- Quality

Objectives may include targets for each of the above areas. Each objective should have a measurable metric with an absolute or relative value.

Project Requirements: Describes the conditions or capabilities that must be met or possessed by the deliverables of the project to satisfy a contract, standard, specification or customer expectations.

Project Assumptions: Assumptions are factors considered to be true, real or certain in order to plan for and develop the product. They are used to support the scope of the project. Consider expectations that will impact the project such as:
- Timing of certain events
- Project resources

Constraints: Constraints are factors that restrict the project by scope, resource, or schedule including parameters that force the project or work effort to fit a particular timeframe or technical constraint. Consider such things as:
- Peak season restrictions and resource limitations
- Regulatory requirements
- Implementation date restrictions
- Timing, such as process lapse time, turnaround time, hours of operation

Initial Defined Risks: Identifies the known risks.
Project Deliverables: Deliverables include both the outputs that comprise the product or service of the project, as well as ancillary results, such as project management reports and documentation.

Project Organization
Include the relevant organizational breakdown structure (OBS) for the project.

Identify Roles & Responsibilities to the extent known at this time. Resource names may not be identified, but roles should be included and expanded from the Project Request.

Project Schedule and Budget
Include identified Project Milestones and budget costs known at this time. Budget information should include the following:

- Internal Resource Cost
- External Resource Cost
- Capital Expenditures
- Risk Contingency

Review Project Charter
A detailed review of the Project Charter is conducted to ensure that it clearly states the needs of the project. See the Project Approval Standards in the CSN Project Methodology knowledge areas for more information.

Approve Project Charter
A formal approval of the Project Charter is required because of its importance. See the Project Approval Standards in the CSN Project Methodology knowledge areas for more information.
Activity: Develop Project Scope Statement

<table>
<thead>
<tr>
<th>Description</th>
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<tr>
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<td>Project Statement</td>
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Develop Project Scope Statement

A Project Scope Statement is the written authorization for the project, project manager and team members. The scope statement defines the project objectives, the customer’s core business need, high level requirements, assumptions and constraints. Project organization, budget and product scope are also addressed. The Project Scope Statement answers the following questions:

- ✔ What are the business objectives?
- ✔ What is the scope of the product?
- ✔ Are there assumptions, exclusions, or constraints related to the project scope, resources or schedule?

Although the amount of information known at this point in the project is limited, the Project Scope Statement establishes the framework on which the rest of the project is built. Emphasis is placed on gathering sufficient information to provide a clear understanding of the request and the business need on which it is based.

Follow this link to view the [Project Scope Statement template](#)

The Project Scope Statement sets the boundaries for the project i.e., identifies conditions under which the project is planned, budgeted and managed. What the project includes and what it does not include. It is broken down into fifteen (15) possible components. Not all components may be necessary for all projects. The Project Sponsor along with the Project Manager will determine which components will be included for any given project.
Review Project Scope Statement
A detailed review of the Project Charter is conducted to ensure that it clearly states the needs of the project. See the Project Approval Standards in the CSN Project Methodology knowledge areas for more information.

Approve Project Scope Statement
A formal approval of the Project Charter is required because of its importance. See the Project Approval Standards in the CSN Project Methodology knowledge areas for more information.

Activity: Assign Project Manager

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Assign Project Manager</td>
<td>Project Charter, Management Planning Output</td>
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</tbody>
</table>

The resource chosen to manage the project may not necessarily have a job title of “project manager,” but the individual assigned must have the skills needed to manage the project. The selected project manager will have strengths that match the challenges the project presents.
### Activity: Project Foundation

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setup Project Files</td>
<td>Project Charter, Preliminary Scope Statement</td>
<td>Project Files</td>
<td>Analyst</td>
<td></td>
</tr>
</tbody>
</table>

It is important to determine a location for organizing and storing project files and set up the files in that location. This provides a standard for projects and for project team members to follow that allows for a single point of reference for all project related materials and deliverables. Things to consider are:

- How electronic and paper files will be organized
- How files will be stored.

Follow the links below for more information in the Project Knowledge Area:

- Follow this link to view the [Starting a New Project](#)
- Follow this link to view the [Organizing Project Information](#)
- Follow this link to view the [Introduction to Versioning and Naming Conventions](#)
- Follow this link to view the [Project Folder Naming Conventions](#)
The Planning Phase is the foundation for the success of the project. Proper planning will establish the blueprint to follow during the Execution and Monitoring & Controlling phases of the project. The planning phase develops the project management plan. The planning phase will further define the project scope statement, identify project cost, and schedule the project activities that occur within the project. As new project information is discovered, additional dependencies, requirements, risks, opportunities, assumptions and constraints will be identified and/or resolved. The integrated nature of project management allows for continual feedback loops for additional analysis. As more project information or characteristics are gathered and understood, additional activities may be required. Significant changes identified during the project life cycle will require the project manager to revisit one or more of the planning processes and possibly some of the initiating processes.

While planning the project, the project team should utilize the project stakeholders since the stakeholders have skills and knowledge that can be leveraged in developing the project management plan and any supporting plans. Stakeholder involvement is key to the project’s success and therefore an environment for their participation must be created.

The Planning Phase includes project planning across multiple knowledge areas. The following activities should be addressed by the project team to decide if they need to be done and if so, by whom.

### Activity: Project Management Plan

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create Project Management Plan</td>
<td>Preliminary Project Scope Statement, Project Management processes, Enterprise Environmental factors</td>
<td>Project Management Plan</td>
<td>Approved Project Management Plan</td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

### Planning Phase activities:
- Project Management Plan
- Scope Management
- Time Management
- Cost Management
- Quality Management
- Human Resource Management
- Communication Management
- Risk Management
- Procurement Management
The Project Management Plan is developed as a blueprint for the management of a project. The plan outlines the approach and coordinates the supporting plans into a single source project management plan. The content and level of detail of the project management plan will vary depending upon the type and complexity of the project. The project management plan is updated and revised throughout the lifecycle of the project. The project management plan defines how the project is executed, monitored & controlled, and closed. The project management plan considers the following:

✓ The project management knowledge areas identified for inclusion
✓ Level of implementation of each knowledge area
✓ What tools and techniques will be utilized to accomplish the stated supporting plans
✓ How the knowledge areas will be used to manage the specific project
✓ How work will be executed to accomplish the project objectives
✓ How changes will be monitored and controlled
✓ The need and techniques for communication among stakeholders
✓ The selected project life cycle for multi-phase projects and the associated project phases
✓ Key management reviews for content, extent and timing to help address open issues and pending decisions

There are two approaches to consider when developing the project management plan. The plan may include summary information with links to the detailed supporting plans, or the detail of the supporting plans may be included within the project management plan. Either approach is acceptable as long as the detail on how the project will be managed is easily accessible. The detail required for the supporting plans and components is determined by the type and complexity of the project. Supporting plans and components may include, but are not limited to:

✓ Scope Management Plan
✓ Time Management Plan
✓ Cost Management Plan
✓ Quality Management Plan
✓ Process Improvement Plan
✓ Human Resource Management Plan
✓ Communication Management Plan
✓ Risk Management Plan
✓ Procurement Management Plan
✓ Milestone List
✓ High Level Timeline
✓ Risk Register

Follow this link to view the Project Management Plan template
Activity: Scope Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collect</td>
<td>Project Charter, Stakeholder Register</td>
<td>Requirements, Traceability Matrix, Requirements Management Plan</td>
<td></td>
<td>Analyst/Project Manager</td>
</tr>
<tr>
<td>Define Scope</td>
<td>Project Charter, Requirements Documentation</td>
<td>Project Scope Statement, Project Document Updates</td>
<td></td>
<td>Analyst/Project Manager</td>
</tr>
<tr>
<td>Create WBS</td>
<td>Project Scope Statement, Requirements Documentation</td>
<td>WBS, Scope Baseline, Project Document Updates</td>
<td></td>
<td>Analyst/Project Manager</td>
</tr>
</tbody>
</table>

**Collect Requirements**

Collect Requirements is the process of defining and documenting stakeholder’s needs to meet the project objectives. Requirements include the quantified and documented needs and expectations of the sponsor, customer and other stakeholders. Requirements need to be measurable, so they can be tracked once project execution begins. Requirements also define and manage the customer’s expectations.

Requirements may be categorized into project requirements and product requirements. Project requirements can include business requirements, project management requirements, delivery and hand-off requirements and training requirements. Product requirements can include information on technical, security, and performance and development requirements.

Accurately defining and documenting the product or process requirements is a critical element in creating and managing expectations. It aids in assuring that there are no surprises when the product is delivered.

Customer needs are defined in the Initiating Phase as part of the Project Charter. The Project Charter includes only the amount of information needed to accurately define the business needs. Further investigation is needed to adequately define the detailed requirements.

In order to deliver a quality product, the product must meet the Project Charter’s goal. To accomplish this, the project team must do a thorough job of gathering the detailed requirements to create well-defined functions. Requirements need to be singular and traceable as they drive many other deliverables in the project.
Activity: As-Is Processes

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquire or create As-Is</td>
<td>Project Charter, As-Is</td>
<td>As-Is Process Map</td>
<td></td>
<td>Project Sponsor</td>
</tr>
<tr>
<td>process maps</td>
<td>Process Map</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review As-Is Process Maps</td>
<td>As-Is Process Map</td>
<td>Project Sponsor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Process maps are graphical representations of the ways work flows through a department. They identify work activities, the departments or groups responsible for the tasks, and the points of intra- and/or inter-departmental interaction within the process.

*Acquire or Create As-Is Process Maps*

As-Is process maps document current processes. If As-Is process maps do not exist they are created. This is a team effort drawing from both business knowledge and analytical skills.

For more information on process and process mapping standards, visit these sites on the CSN ntouch site:

[CSN Project Methodology Knowledge Areas](#)

*Review As-Is Process Maps*

As-Is process maps and supporting documentation are analyzed to verify that they represent the current processes and disconnects are identified.

Activity: Detailed Requirements

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define Detailed Requirements</td>
<td>Project Charter</td>
<td>Requirements</td>
<td></td>
<td>Analyst/Project Manager</td>
</tr>
<tr>
<td>Review Detailed Requirements</td>
<td>Project Charter, Requirements</td>
<td>Requirements</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Approve Detailed Requirements</td>
<td>Requirements</td>
<td>Requirements</td>
<td>Requirements Approved</td>
<td>Project Sponsor</td>
</tr>
<tr>
<td>Create Requirements Traceability Matrix</td>
<td>Approved Requirements</td>
<td>Requirements Traceability Matrix</td>
<td></td>
<td>Analyst, Project Manager</td>
</tr>
</tbody>
</table>
**Define Detailed Requirements**

Requirements define “what” the new product must do in order to satisfy the goal of the project, but they do not represent the solution itself. They include both business and technical requirements. The list which follows includes the types of requirements to be considered and a description of each.

<table>
<thead>
<tr>
<th>Requirement Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business / Functional</td>
<td>The business / functional requirements describe what the system or process must do in order to satisfy the goals of the project from a business standpoint. These include functions that the system must perform as well as report, form, letter, mailing and distribution needs.</td>
</tr>
<tr>
<td>Process</td>
<td>Requirements related to processes affected by the project are included here. They address requirements for timelines, quality, management and measurement of the process. In addition, they address process-related procedures to be written or revised.</td>
</tr>
<tr>
<td>Audit</td>
<td>Audit requirements ensure compliance with regulations and policies. It is important to identify audit requirements early in the process so they can be reviewed by the appropriate groups/individuals and can be included within the Design Solutions.</td>
</tr>
<tr>
<td>Documentation</td>
<td>Documentation requirements define documentation needed. The type of documentation (user-internal, user-client or technical); the target audience; the preferred media (on-line, hardcopy, web-based); distribution timing; and the frequency of revisions are all addressed in these requirements. Also include what provisions are needed to protect customer privacy in sample forms, screens and reports.</td>
</tr>
<tr>
<td>Performance</td>
<td>Performance requirements address timeliness, quality, management and how performance is measured.</td>
</tr>
<tr>
<td>Interfacing</td>
<td>Interfacing requirements are interactions between the new product or process and internal or external entities. These may be person-to-person interactions such as phone-calls, e-mails or site visits or technical interfaces such as electronic file transmissions.</td>
</tr>
<tr>
<td>Testing</td>
<td>The testing requirements define the type of testing, timing considerations and environmental considerations.</td>
</tr>
<tr>
<td>Training</td>
<td>Define the extent of training needed for the new product or process.</td>
</tr>
<tr>
<td>Security</td>
<td>Security requirements define any security-related aspects of the project. This may be physical security such as safekeeping of documents, system security such as login IDs for accessing a system, permissions such as authority to update an electronic file, or privacy laws which must be met.</td>
</tr>
<tr>
<td>Data</td>
<td>Define data requirements including retention, encryption, purging and archiving.</td>
</tr>
<tr>
<td>Technical</td>
<td>Technical Requirements describe what the new or changed product must do from a technical standpoint. They include system performance constraints such as turnaround time or response time.</td>
</tr>
<tr>
<td>Implementation</td>
<td>Define the requirements for implementing the product or process such as timing, support needed and scheduling.</td>
</tr>
<tr>
<td>Post Implementation</td>
<td>Define the requirements for Post Implementation such as the timing, support needed and scheduling.</td>
</tr>
</tbody>
</table>
Review Detailed Requirements

The requirements are reviewed to ensure that they were accurately defined and are consistent with the project goal and scope outlined in the Project Charter. It is strongly recommended that one or more subject matter experts be included in the review. These subject matter experts not only bring a fresh perspective to the review, but the added benefit of their expertise contributes to the development of quality requirements.

Approve Detailed Requirements

A formal approval of the Requirements is required.

Create Requirements Traceability Matrix

Once requirements have been approved, a traceability matrix is created. The purpose the Requirements Traceability Matrix is to ensure that all identified requirements have been included in any development, procedural or reporting solution. Requirements are tracked through development and testing.

Make Requirements Checkpoint Decision

A project checkpoint provides an opportunity to review the project and determine whether it can proceed as planned. The decision is made based on the information gathered to date, the updated timeline/cost estimates and the answer to the following questions:

Have the requirements been approved? Does the project still fit within the approved scope, planned phase completion dates, and cost estimates? Are we ready to proceed?

| Proceed - | If the answer to all of the questions above is yes, a decision can be made to continue the project and move forward to the Design activities. |
| Reevaluate - | If the answer to any of the questions above is no, the project is reevaluated to make sure it is still the right thing to do. |
| | If it’s decided that the project is still the right thing to do but adjustments are needed to the project scope, schedule or cost, use the Project Change Management processes to request approval of the change. See the Project Change Management knowledge area in the CSN Project Methodology for more information. |
| | If the decision is made to discontinue the project, go to the Project Closure activity in the Post Implementation phase for additional information. |

Follow this link to view the Requirements Work Plan template
Follow this link to view the Requirements Business template
Follow this link to view the Requirements Traceability template
Follow this link to view the Requirements Prioritization template
Define Scope
The project scope statement provides a common understanding of the project scope among all project stakeholders, guides the project team’s work during execution, and provides the baseline for evaluating whether requests for changes or additional work are contained within or outside the project’s boundaries.

Components of the project scope statement should include, but are not limited to, the following:

- Project Objectives
- Project Boundaries
- Project Constraints
- Change Control
- Product Scope Description
- Project Deliverables
- Project Assumptions
- Approval Requirements
- Project Requirements
- Product Acceptance Criteria
- Initial Defined Risks
- Project Approach

Follow this link to view the Project Scope Statement template

Review Scope Statement
The scope statement is reviewed to ensure that the required stakeholders and leadership agree on the details for the project. What the project will deliver and what it will not deliver. Review assumptions, constraints and risks to verify each has been adequately explored at this stage.

Approve Scope Statement
A formal approval of the Scope Statement is required.

Create Work Breakdown Structure (WBS)
The WBS is a high level hierarchical view that defines the total scope of the project to be executed by the project team in order to accomplish the project objectives and create the required deliverables. The WBS breaks down the project work into increasingly detailed, more manageable pieces of work, with each descending level. The lowest-level WBS components, which are called work packages, can be scheduled, cost estimated, monitored and controlled.

The WBS represents the work specified in the current approved project scope statement. Components comprising the WBS assist the stakeholders in viewing the deliverables of the project.

Follow this link to view the WBS template
Follow this link to view the WBS Checklist template
## Activity: Time Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define Activities</td>
<td>Project Scope Statement, WBS, Enterprise Environmental Factors</td>
<td>Activity List, Activity Attributes, Milestone List, Requested Changes</td>
<td></td>
<td>Analyst/Project Manager</td>
</tr>
<tr>
<td>Sequence Activities</td>
<td>Project Scope Statement, Activity List, Activity Attributes, Milestone List, Approved Change Requests</td>
<td>Project Schedule Network Diagrams, Project Document updates</td>
<td></td>
<td>Analyst/Project Manager</td>
</tr>
<tr>
<td>Estimate Activity Resources</td>
<td>Activity List, Activity Attributes, Resource Calendars, Enterprise Environment Factors</td>
<td>Activity Resource Requirements, Resource Breakdown Structure, Project Document updates</td>
<td></td>
<td>Analyst/Project Manager</td>
</tr>
<tr>
<td>Estimate Activity Durations</td>
<td>Activity List, Activity Attributes, Activity Resource Requirements, Resource Calendar, Project Scope Statement</td>
<td>Activity Duration Estimates, Project Document updates</td>
<td></td>
<td>Analyst/Project Manager</td>
</tr>
<tr>
<td>Develop Schedule</td>
<td>Activity List, Activity Attributes, Activity Resource Requirements, Resource Calendars, Activity Duration Estimates, Project Scope Statement, Project Schedule Network Diagrams</td>
<td>Project Schedule, Schedule Baseline, Schedule data, Project Document updates</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Project Schedule Review</td>
<td>Project Schedule</td>
<td></td>
<td></td>
<td>Project Sponsor</td>
</tr>
</tbody>
</table>
Define Activities

The Define Activities process identifies the known schedule activities to be performed to produce the project deliverables. Activities provide a basis for estimating, scheduling, executing, and monitoring and controlling the project work. The Activity List and Milestone Plan are the work items for this activity.  *Links provided below.*

Sequence Activities

Sequence Activities builds on the details gathered during Define Activities. Sequence Activities is the process of identifying and documenting relationships among the project activities. Activities can be logically sequenced with proper precedence relationships, as well as leads and lags to support later development of an achievable project schedule. The Activity List work item will be utilized for this activity.

Estimate Activity Resources

Estimating activity resources involves determining what resources (persons, equipment or material) and what quantities of each resource will be used and when each resource will be available to perform project activities. The Estimate Activity Resources process is closely coordinated with the Estimate Cost process. The Activity List template is the primary deliverable here.

Estimate Activity Durations

The Estimate Activity Durations is the process of approximating the number of work periods needed to complete individual activities with estimated resources. The Estimate Activity Durations process utilizes the input from the person or group on the project team who is most familiar with the nature of the work content in the specific activity. Work effort durations will be estimated utilizing the Three-Point estimate approach. Resources and work periods will also be reviewed and estimated. The Activity List template is the primary deliverable here.

All data and assumptions that support duration estimating are documented for each activity duration estimate.

Follow this link to view the [Activity List template](#)  
Follow this link to view the [Milestone Plan template](#)

Develop Schedule

Develop Schedule is the process of analyzing activity sequences, durations, resource requirements and schedule constraints to create the project schedule. Developing an acceptable project schedule is often an iterative process. It determines a baseline for planned start and finish dates for project activities which allow project progress to be tracked. Schedule development continues throughout the project as work progresses, the project management plan changes, anticipated risk events occur or disappear, and as new risks are identified.

Follow this link to view the [Project Schedule template](#)
Activity: Cost Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate Costs</td>
<td>Scope Baseline, Project Schedule, Human Resource Plan, Enterprise Environmental Factors</td>
<td>Activity Cost Estimates, Basis of estimates, Project documentation updates</td>
<td></td>
<td>Analyst/Project Manager</td>
</tr>
<tr>
<td>Determine Budget</td>
<td>Activity Cost Estimates, Basis of estimates, Scope Baseline, Project Schedule, Resource Calendars, Contracts</td>
<td>Cost Performance baseline, Project funding requirements, Project documentation updates</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

**Estimate Costs**

Estimate Costs is the process of developing an approximation of the costs of the resources needed to complete project activities. When approximating costs, it is important to consider the possible causes of variation in the cost estimates, including risks.

Cost estimates are generally expressed in units of currency to facilitate comparisons both within and across projects. In some cases, the estimator may also use units of measure (e.g., staff hours, staff days) to estimate cost to facilitate appropriate management control.

Cost estimates should be refined during the course of the project to reflect additional detail as it becomes available. The accuracy of a project estimate will increase as the project progresses through the project life cycle.

The costs for activities are estimated for all resources that will be charged to the project. This includes, but is not limited to, labor, materials, equipment, services and facilities, as well as special categories such as an inflation allowance or a contingency cost.

Follow this link to view the *Activity Cost Estimate template*

**Determine Budget**

Determine Budget is the result of combining the estimated costs of individual activities to establish an authorized cost baseline. The project scope statement provides the summary budget. However, more detailed activity or work package cost estimates are prepared prior to the detailed budget requests and work authorization.

Also see *Managing Project Costs* in the Knowledge Area
### Activity: Quality Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan Quality</td>
<td>Scope Baseline, Stakeholder Register, Cost Performance Baseline, Schedule Baseline, Risk Register</td>
<td>Quality Management Plan, Quality Metrics, Quality Checklists, Process Improvement Plan, Project Management Plan (updates)</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

Plan Quality is the process of identifying quality requirements and/or standards for the project and product, and documenting how the project will demonstrate compliance. Quality planning should be performed in parallel with the other project planning processes. For example, proposed changes in the product to meet identified quality standards may require cost or schedule adjustments and a detailed risk analysis of the impact to plans.

Also see [Managing Project Quality](#) in the Knowledge Area

### Activity: Human Resource Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
</table>

Develop Human Resource Plan is the process of identifying and documenting project roles, responsibilities, and required skills, reporting relationships and creating a staffing management plan. Human resource planning is used to determine and identify human resources with the necessary skills required for project success. The human resource plan documents project roles and responsibilities, project organization charts and the staffing management plan including the timetable for staff acquisition and release. It may also include identification of training needs, team building strategies, plans for recognition and rewards programs, compliance considerations and the impact of the staffing management plan on the organization.

Also see [Managing Human Resources](#) in the Knowledge Area
Activity: Communications Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan Communications</td>
<td>Project Scope Statement, Project Management Plan, (constraints, assumptions), Enterprise Environmental Factors</td>
<td>Communications Management Plan</td>
<td></td>
<td>Analyst/Project Manager</td>
</tr>
<tr>
<td>Review Communication Plan</td>
<td>Communications Management Plan</td>
<td>Communications Management Plan</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

Communications Planning determines the information and communications needs of the stakeholders; for example, who needs what information, when they will need it, how it will be given to them, and by whom. While all projects share the need to communicate project information, the informational needs and methods of distribution vary widely. Identifying the information needs of the stakeholders and determining a suitable means of meeting those needs are important factors for project success. The results of this planning process are reviewed regularly throughout the project and revised as needed to ensure continued applicability.

Also see Managing Project Communication in the Knowledge Area
Activity: Risk Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify Risk</td>
<td>Project Scope Statement, Project Management Plan, Enterprise Environmental Factors</td>
<td>Risk Register</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Perform Qualitative Risk Analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform Quantitative Risk Analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan Risk Responses</td>
<td>Project Scope Statement, Risk Management Plan, Risk Register, Project Management Plan</td>
<td>Risk Register (updates), Project Management Plan (updates)</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

**Plan Risk Management**

Risk Management Planning addresses how to approach and conduct the risk management activities for a project. Risk management planning:

- Ensures that the degree, type and visibility of risk management is commensurate with both the risk and importance of the project to the organization.
- Provides sufficient resources and time for risk management activities.
- Establishes an agreed-upon basis for evaluating risks.

The Plan Management process should begin as a project is conceived and should be completed early during project planning.

**Identify Risk**

Identify Risk is the process of identifying risks which may impact the project and documenting their characteristics. Participants involved in risk identification activities may include the following, where appropriate; project manager, project team members, subject matter experts from outside the project team, customers, end users, and stakeholders.

Identify Risks occurs throughout the project life cycle. The frequency of iteration and who participates in each cycle will vary by situation. The format of the risk statements should be consistent to ensure the ability to compare the relative effect of one risk even against others on the project. The project team should be involved in the process so that they can develop and maintain a sense of ownership of, and responsibility for, the risks and associated risk response actions.

Follow this link to view the [Risk Register template](#).
Perform Qualitative Risk Analysis
Perform Qualitative Risk Analysis is the process of prioritizing risks for further analysis or action by assessing and combining their probability of occurrence and impact. Perform Qualitative Risk Analysis assesses the priority of identified risks using their relative probability or likelihood of occurrence, the corresponding impact on project objectives if the risks occur, as well as other factors such as the time frame for response and the organization’s risk tolerance associated with the project constraints of cost, schedule, scope and quality.

Perform Qualitative Risk Analysis is usually a rapid and cost-effective means of establishing priorities for Plan Risk Responses and lays the foundation for Perform Quantitative Risk Analysis, if required. The Perform Qualitative Risk Analysis process should be revisited during the project’s life cycle to stay current with changes in the project risks.

Perform Quantitative Risk Analysis
Perform Quantitative Risk Analysis is the process of numerically analyzing the effect of identified risks on overall project objectives. Perform Quantitative Risk Analysis is performed on risks that have been prioritized by the Perform Qualitative Risk Analysis process as potentially and substantially impacting the project’s competing demands. It may be used to assign a numerical rating to those risks individually or to evaluate the aggregate effect of all risks affecting the project. It also presents a quantitative approach to making decisions in the presence of uncertainty.

Perform Quantitative Risk Analysis should be repeated after Plan Risk Responses, as well as part of Monitor and Control Risks, to determine if the overall project risk has been satisfactorily decreased. Trends can indicate the need for more or less risk management action.

Plan Risk Responses
Plan Risk Responses is the process of developing options and actions to enhance opportunities and to reduce threats to project objectives. It includes the identification and assignment of one or more persons to take responsibility for each agreed-to risk response. Plan Risk Responses addresses the risks by their priority, inserting resources and activities into the budget, schedule and project management plan as needed.

Planned risk responses must be appropriate to the significance of the risk, cost effective in meeting the challenge, realistic within the project context, agreed upon by all parties involved, and owned by a responsible person. They must also be timely. Selecting the best risk response from several options is often required.
Activity: Procurement Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan Procurements</td>
<td>Scope Baseline, Requirements Documentation, Risk Register, Project Schedule, Cost Performance Baseline, Enterprise Environmental Factors</td>
<td>Procurement Management Plan, Procurement Statement of Work, Make or Buy Decisions, Procurement Documents, Source Selection Criteria, Requested Changes</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

Plan Procurements is the process of documenting project purchasing decisions, specifying the approach, and identifying potential vendors. It identifies those project needs which can best be, or must be, met by acquiring products, services or results outside of the project organization.

This process involves determining whether to acquire outside support and if so what to acquire, how to acquire it, how much is needed and when to acquire it. When the project obtains product, services and results required for project performance from outside the performing organization, the processes from Plan Procurements through Close Procurements are performed for each item to be acquired.

The Plan Procurements process also includes consideration of potential vendors, particularly if the buyer wishes to exercise some degree of influence or control over contracting decisions. Consideration should also be given to who is responsible for obtaining or holding any relevant permits and professional licenses that may be required by legislation, regulation or organizational policy in executing the project.

The project schedule can significantly influence the Plan Procurements process. Decisions made in developing the procurement management plan can also influence the project schedule and are integrated with Develop Schedule, Estimate Activity Resources and make-or-buy decisions.

The Plan Procurements process includes reviewing the risks involved in each make-or-buy decision; it also includes reviewing the type of contract planned to be used with respect to mitigating risks and transferring risks to the vendor.
The Executing Phase consists of the processes and activities used to complete the work defined in the project management plan to accomplish the project’s requirements. The project team will monitor the project scope statement and implement approved changes during this phase.

During project execution, results may require planning updates and re-baselining. This can include changes to expected activity durations, changes in resource productivity and availability, and unanticipated risks. Such variances may affect the project management plan or project documents and may require detailed analysis and development of appropriate project management responses. The results of the analysis can trigger a change request that, if approved, would modify the project management plan and possibly require establishing a new baseline.

Activity: Direct and Manage Project

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
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</thead>
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<tr>
<td>Direct and Manage Project</td>
<td>Project Management Plan, Approved Change Requests</td>
<td>Deliverables, Change Requests, Work Performance Information, Project Management Plan updates, Project Document updates</td>
<td>Project Manager</td>
<td></td>
</tr>
</tbody>
</table>

The Direct and Manage Project Execution process requires the project manager and the project team to perform multiple actions to execute the project management plan and accomplish the work defined in the project scope statement. Some of those actions include, but are not limited to:

- Perform activities to accomplish project requirements
- Staff, train and manage the project team members assigned to the project
- Obtain quotations, bids, offers or proposals as appropriate
- Obtain, manage and use resources including materials, tools, equipment and facilities
- Implement the planned methods and standards
- Create, control, verify and validate project deliverables
- Manage risks and implement risk response activities
- Manage vendors
- Adapt approved changes into the project’s scope, plans and environment
- Establish and manage project communication channels, both external and internal to the project team
- Generate project data such as cost, schedule, technical and quality progress, and status to facilitate forecasting
- Collect and document lessons learned and implement approved process improvement activities
The project manager, along with the project management team, directs the performance of the planned project activities and manages the various technical and organizational interfaces that exist within the project. The Direct and Manage Project Execution process is most directly affected by the project application area. Project work is produced in the form of deliverables that accomplish the work planned and scheduled in the Project Management Plan. Work performance information about the completion status of the deliverables, and what has been accomplished, is collected as part of project execution and is fed into the performance reporting process. Direct and Manage Project Execution also requires implementation of:

- Approved corrective actions that will bring anticipated project performance into compliance with the project management plan
- Approved preventive actions to reduce the probability of potential negative consequences
- Approved defect repair requests to correct product defects found by the quality process

**Design**

Translating the project goal into a solution representing how the new product or process will satisfy the customer’s need is the primary focus of the Design activities.

Multiple solutions are considered and a solution is recommended. New processes that integrate the recommended solution are created and functional and technical aspects of the product are designed.

The Project Support Plan defines how the new product or process will be introduced and implemented in general terms.

At the end of the Design activities, the project timeline is finalized and the composition and structure of the project and the project team is set.

**Activity: Design Solutions**

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
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<td>Recommend Solution</td>
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<td>Design Solutions</td>
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<tr>
<td></td>
<td>Benefit Analysis</td>
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<td></td>
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<tr>
<td>Review Recommended Solution</td>
<td>Design Solutions</td>
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</tr>
<tr>
<td>Approve Solution</td>
<td>Design Solutions</td>
<td>Approved Design</td>
<td>Solution Defined and</td>
<td>Project Sponsor</td>
</tr>
<tr>
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<td>Project Schedule</td>
<td>Updated Schedule</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

**Define Alternate Solutions**

The business needs are reviewed and the team brainstorms solutions. Each alternative is evaluated based on its ability to fulfill the detailed requirements and its impact to the current process. For each viable solution, a description including enough detail for thorough evaluation is written.
Things to consider when brainstorming solutions:

- Degree to which Solutions Meet Requirements
- Cost and Risks in Development
- Cost of Use
- Business Areas / Systems Impacted
- Ease of Use
- Training Needs
- Documentation Needs
- Alignment to University Goals
- Manual and Automated Solutions
- Payback Period
- Conversion Needs
- Maintainability
- Flexibility
- Growth Potential
- Positioning for the Future
- Opportunity Costs
- Benefits
- Associated Risk Factors

Each viable solution is evaluated (using the Cost Benefit Analysis) to determine if each helps meet the goal of the project.

**Recommend Solution**

Once the Cost Benefit Analysis is completed, the solutions are analyzed and a recommended solution identified. Components of the recommendation are:

- Details of each viable solution
- Advantages and disadvantages for each solution
- The risk factors for each solution
- Cost Benefit Analysis results
- Final recommendation with justification

**Review Recommended Solution**

The recommended solution should be reviewed by subject matter experts before presenting it for approval. These subject matter experts not only bring a fresh perspective to the review, but the added benefit of their expertise contributes to development of a sound recommendation.

For review requirements, see the Project Approval Standards in the CSN Project Methodology knowledge areas.

**Approve Solution**

Once the recommended solution has been defined, it may be accepted as presented or further refined until it is approved. See the Project Approval Standards in the CSN Project Methodology knowledge areas for more information.
# EXECUTING

## Activity: To-Be Processes

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
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<tr>
<td>Create To-Be Process Map</td>
<td>Project Charter, Requirements, As-Is Process Map, Design Solutions</td>
<td>To-Be Process Map</td>
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<td>Analyst</td>
</tr>
<tr>
<td>Submit Process Changes for Approval</td>
<td>As-Is Process Map, To-Be Process Map</td>
<td>Approved To-Be Process Maps</td>
<td></td>
<td>Project Sponsor</td>
</tr>
<tr>
<td>Update To-Be Process Map</td>
<td>All Project Documents</td>
<td></td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

*Create To-Be Process Maps*

To-Be process maps document the workflow for the recommended solution. Once the recommended solution is identified, To-Be process maps which integrate the recommended solution are created.

*Submit Process Changes for Approval*

Approval of the To-Be process maps may be required. See the suggested impact questions on the [Process Change Management](#) page of the CSN ntouch site for more information.

*To-Be Process Maps Approval*

To-Be process maps submitted for approval will be reviewed and approved, changed or rejected by the Project Sponsor or CSN Leadership.

*Update To-Be Process Maps*

Following the review and approval by the Project Sponsor or CSN Leadership the changes are made to the To-Be process maps.

## Activity: Functional Design

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create Functional Design</td>
<td>Requirements, Approved Design Solutions</td>
<td>Functional Design</td>
<td></td>
<td>Analyst</td>
</tr>
<tr>
<td>Review Functional Design</td>
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<td>Analyst</td>
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<tr>
<td>Approve Functional Design</td>
<td>Functional Design</td>
<td>Approved Functional Design</td>
<td></td>
<td>Project Sponsor</td>
</tr>
</tbody>
</table>

*Create Functional Design*

The Functional Design describes how the new product and/or process will function. Its primary purpose is to document the look and feel of the end product.

Follow this link to view the [Functional Design template](#).
Review Functional Design

The Functional Design is reviewed to ensure it supports the customer’s need before presenting it for approval. It is strongly recommended that one or more subject matter experts be included in the review. These subject matter experts not only bring a fresh perspective to the review, but the added benefit of their expertise contributes to development of a quality design.

For review requirements, see the Project Approval Standards in the CSN Project Methodology knowledge areas.

Approve Functional Design

The design is approved to ensure that it meets the business need and to verify that the design is ready for development. See the Project Approval Standards in the CSN Project Methodology knowledge areas for more information.

Activity: Technical Design

<table>
<thead>
<tr>
<th>Description</th>
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<th>Primary Responsibility</th>
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<tbody>
<tr>
<td>Create Technical Design</td>
<td>Design Solutions</td>
<td>Technical Design</td>
<td>Developer</td>
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<tr>
<td>Review Technical Design</td>
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<td>Team Lead</td>
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<tr>
<td>Approve Technical Design</td>
<td>Technical Design</td>
<td>Approved Technical Design</td>
<td>Project Sponsor, Team Lead</td>
<td></td>
</tr>
</tbody>
</table>

Create Technical Design

The Technical Design is written from the perspective of one who would actually build the product or process. It details how the application, process, or business practice will function and how the solution will be constructed. The Technical Design should be specific enough that the product or process could be created using the information it contains.

Follow this link to view the Technical Design template

Review Technical Design

Technical Design is reviewed to ensure it supports the Functional Design, that system and process integrity is maintained, and the technical architecture is sound before presenting for approval.

For review requirements, see the Project Approval Standards in the CSN Project Methodology knowledge areas.

Approve Technical Design

Approval of the Technical Design is required prior to beginning construction. See the Project Approval Standards in the CSN Project Methodology knowledge areas for more information.
Planning begins for those functions necessary for implementing and supporting the product. This forward looking approach starts the process of planning and defining resources needed for implementation. The plans made here include a general approach, not detailed information of how the goal will be accomplished. Although this may seem early in the project to address these needs, in some instances a great deal of upfront planning or preparation is required, i.e., if special facilities or systems are needed for a training class. Addressing these support functions during the Design activities avoids last minute changes as implementation nears.

Follow this link to view the [Project Support Plan template](#) 

### Plan for Testing

The plan for testing identifies the types of test that will be conducted. These may include Functional, Integration, User Acceptance and Regression Testing. It defines the objectives and scope of the testing effort and identifies the methods and the hardware, software and tools that may be used. Things to consider when planning for testing are:

- How the product or process will be tested
- Special testing needs
- Coordination of concurrent testing with other projects

### Plan for Product Support

How the new product will be supported during the Post Implementation activities, and on an ongoing basis, is outlined in the project support plan. Things to consider when planning for support are:

- What kind of support is needed (phone, e-mail, on-site)?
- Are new phone numbers or e-mail boxes required?
- How long will support be needed (short-term, long-term)?
- Which area/team will provide the support?
- Do procedures for supporting the product need to be written or revised? If so, who is responsible for creating/revising, reviewing and distributing the support procedures?
- Does a plan for transitioning the project deliverable to the support function (Project to Support Transition) need to be formally developed?

### Plan for Product Communications

Formally announcing the product to impacted areas is planned early since certain aspects may require extensive preparation. Consider the following when planning for product communication:

- Who is impacted by the new product? Who needs to receive the product announcement (departments, UNCA, CSN, Network Nebraska)?
- What is the best method for communicating change (e-mail, management, headline news)?
- Does the information need to be distributed before or after implementation? How much preparation time is needed for distributing the communication?
- Who will be responsible for creating, reviewing, approving and distributing the communication?
Plan for Process and Procedures
A plan is made to create or revise procedures based on the workflow in the To-Be Process map. These procedures may be operational and/or support procedures. Consider the following when planning:

- How will new or changed processes be integrated into the current environment? When will the changes occur? Who will communicate them?
- Who will use the procedures?
- Who will create, revise and approve the procedures?
- How and when will they be distributed or published? Where will they be stored?

Plan for Product Documentation
Identify product documentation that may need to be written or revised. Consider the following when planning for product documentation:

- Who is the audience: CSN, UNCA, UNL, Campuses
- What documentation needs to be revised or written: technical, support, user?
- How will the documentation be distributed: online, paper, help file or web page? When will the documentation be published? To whom will it be distributed?
- What procedures need to exist for creating/revising, reviewing and distributing the documentation?

Plan for Product Training
The project may or may not require training depending on the impact of the product or process. The extent of the change and the number of people affected may dictate whether training is needed. Consider the following when planning for training:

- What product and process components require training?
- Who is the training audience: CSN, operational staff, support personnel, end-users?
- What are the training objectives? If multiple audiences, are the objectives the same for each?
- What training method best meets the audience objectives: formal classroom, online, one-on-one?
- What training resources are required?
- Is the cost of training included in the project budget?
- What facilities will be used for training?
- How much time is needed to develop the training curriculum?
- How much time will be needed to conduct the training?
- Is a training system for hands-on training needed? Does it require upfront development?

Plan for Implementation
The Implementation Plan addresses how the new product and/or process will be launched. When planning for implementations consider:

- Will implementation be done in a phased approach or will the product or process be implemented all at one time?
- Are there special implementation requirements?
- How will implementation be scheduled? What are the timing considerations?
- What is the contingency plan in the event there are problems during implementation?
- Are there other related project implementations that need to be coordinated?
- Are there special approvals needed?
- Are new forms, equipment, hardware or software needed? If so, who is responsible for their acquisition, installation and support? Are these costs included in the project budget?
- What criteria will be used to make the Go / No-Go decision?
Plan for Post Implementation
The Post Implementation plan is a critical component of a successful project as it addresses support and problem resolution for the post implementation period. Whenever changes occur, dedicated resources are needed to ensure a smooth transition from the old to the new. This plan is established early so that resources can be identified and scheduled for the post implementation period. Consider the following questions when creating the Post Implementation Plan:

- How will the new or changed product be supported once it is implemented?
- How long will the project team monitor performance?
- How will problems be reported? How will they be resolved and who is responsible for resolving them?
- How will problems/resolutions be communicated to those who need to know?

Make Design Checkpoint Decision
A project checkpoint provides an opportunity to review the project and determine whether it can proceed as planned. The decision is made based on the information gathered to date, the updated timeline/cost estimates and the answer to the following questions:

Have the Design Solutions and Functional Design been approved? Does the project still fit within the approved scope, planned phase completion dates, and cost estimates? Are we ready to proceed?

| Proceed - | If the answer to all of the questions above is yes, a decision can be made to continue the project and move forward to the Construction activities. |
| Reevaluate - | If the answer to any of the questions above is no, the project is reevaluated to make sure it is still the right thing to do. |

If it’s decided that the project is still the right thing to do but adjustments are needed to the project scope, schedule or cost, use the Project Change Management processes to request approval of the change. See the Project Change Management knowledge area in the CSN Project Methodology for more information.

If the decision is made to discontinue the project, go to the Project Closure activity in the Post Implementation phase for additional information.
Construction

The product is developed, procedures are created or revised and product documentation is created in Construction activities. A critical step in the construction activities is ensuring the changes to our systems, processes, and business practices are completed within the boundaries outlined in the Project Charter and the product is built as designed.

Activity: Product Development

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop Product</td>
<td>Functional and Technical Designs</td>
<td>Product Development</td>
<td>Developer</td>
<td></td>
</tr>
<tr>
<td>Test Product</td>
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<td>Product Initially Tested</td>
<td>Developer</td>
<td></td>
</tr>
<tr>
<td>Update Design</td>
<td>Technical Design, Functional Design</td>
<td>Updated Technical Design</td>
<td>Analyst, Developer, Developer</td>
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</tr>
<tr>
<td>Approve Product</td>
<td>Product</td>
<td>Product Approved for Testing</td>
<td>Construction Complete</td>
<td>Project Manager, Project Sponsor</td>
</tr>
</tbody>
</table>

Develop Product

The product is developed or modified according to the Functional and Technical Designs.

Test Product

Testing of the product is conducted during development to verify that the product functions as designed. This involves testing the changes and the impacts, inputs and outputs to other systems or processes. The developer has verified that the change(s) work as designed and that there is no negative impact to other processes or products.

Update Design

The Functional and Technical Designs are updated based on any changes made from a technical aspect as a result of construction. If the design has changed significantly, another review is required.

Review Product

A review of the construction effort is done to ensure that the product meets the requirements and standards and is developed according to the design.

For review requirements, see the Project Approval Standards in the CSN Project Methodology knowledge areas.

Significant changes which warrant an update to the design require formal approval through the Change Management process.

See the suggested Impact Questions on the Process Change Management page of the CSN Project Methodology knowledge areas.
**Approve Product**

The construction results are approved and testing begins.

**Activity: Procedures**

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop Procedures</td>
<td>Functional Design, To-Be Process Map</td>
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<tr>
<td>Review Procedures</td>
<td>To-Be Process Map, Procedures</td>
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<tr>
<td>Approve Procedures</td>
<td>Procedures</td>
<td></td>
<td></td>
<td>Project Sponsor</td>
</tr>
</tbody>
</table>

**Develop Procedures**

Procedures are created or revised based on the work flow reflected in the To-Be Process maps. These procedures may be operational procedures and/or procedures used by those who support the product.

Follow this link to view the [Procedures template](#).

The writer reviews and edits the procedures and verifies that they were developed according to the To-Be Process map. If the procedures will be published online, display and navigation are tested. Once these tasks are complete, the procedures are ready for review.

**Review Procedures**

A review of the procedures is done to ensure that they are developed according to the design. The Project Manager determines who participates in the review based on the type of procedures.

**Approve Procedures**

The procedures are approved and ready to be tested in the Testing phase. Approvers and approval formality are determined by the Project Manager based on the type of procedure needing approved.

**Activity: Product Documentation**

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
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</tr>
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<td>Approve Product Documentation</td>
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<td>Product Documentation, Approved for Testing</td>
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<td>Project Manager</td>
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</tbody>
</table>
Develop Product Documentation

Product documentation is created based on the Project Support Plan. Development includes defining the format, determining the sequence of topics, writing the topic content and adding charts or illustrations and other supplemental information such as an index or glossary. If the documentation will be published online, it is setup online and navigational functions and hyperlinks are created.

The writer reviews and edits the documentation and verifies that the product was developed as planned. If the documentation is online, display and navigation are tested. Once these tasks are complete, the documentation is ready for review.

Review Product Documentation

A review of the product documentation is done to ensure that it was developed according to the design. The Project Manager determines who participates in product documentation reviews based on the type of documentation.

Approve Product Documentation

The product documentation is approved and ready for testing in the Testing phase. Approvers and approval formality are determined by the Project Manager based on the type of documentation needing approved

Testing

The success or failure of the project depends heavily upon preparing and effectively managing the testing effort. Preparations for testing include developing a test plan, test cases and a test environment to simulate the conditions in which the product will go live. The product’s functionality and construction results are tested to ensure it is built and performs as designed.

Additional related documentation and procedures are also tested in this phase.

Activity: Test Plan

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
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<tr>
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<td>Test Plan</td>
<td>Reviewed Test Plan</td>
<td>Project Manager</td>
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</tbody>
</table>
Create Test Plan

The test plan created in the Project Support plan is further developed to provide testing details; the plan is then finalized and documented. The Test Plan describes the type and extent of testing to be conducted, components to be used, risks involved and the testing schedule. The test plan is refined until testing is ready to begin. Things to consider when planning for testing are:

✓ How will the product or process be formally tested to verify its functionality?
✓ What specifically is to be tested?
✓ How will specific testing efforts be traced back to specific requirements?
✓ Who will conduct the tests?
✓ What is the schedule for testing?
✓ What specific criteria, risks, conditions, environments and/or processes will be used to ensure proper results?
✓ How will the results be evaluated and documented?
✓ What are the criteria to begin testing and to signal the end of testing?

Review Test Plan

The detailed test plan is reviewed to ensure testing will support the business need. In the review, consider:

✓ Does the plan clearly state how the product or process will be formally tested?
✓ Is there sufficient detail to identify what is to be tested?
✓ Is it clear how testing will be traced back to specific requirements?
✓ Does the plan identify who will conduct the tests?
✓ Are the testing schedule and resource requirements included and reasonable?
✓ Are specific criteria, risks, conditions environments and/or processes defined?
✓ Does the plan outline how the results will be evaluated and documented?
✓ Are the criteria which identify when testing will begin and signals the end of testing made clear?

For review requirements, see the Project Approval Standards in the CSN Project Methodology knowledge areas.
### Activity: Test Preparations

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
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<tr>
<td>Build Test Data</td>
<td>Test Plan, Test Cases</td>
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<tr>
<td>Set Up Defect Tracking</td>
<td>Test Plan</td>
<td>Defect Tracking Process</td>
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<tr>
<td>Establish Test Reporting</td>
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</tr>
<tr>
<td>Review Test Preparations</td>
<td>Test Plan, Defect Tracking, Test Data and Environment</td>
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<td>Project Manager</td>
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</tr>
</tbody>
</table>

**Create Test Cases**

Test cases provide the scenarios for testing the specific conditions and expected results identified in the Test Plan. They are based on the project requirements and functional and technical designs. Test cases provide traceability back to specific project requirements.

Test cases may be broken down into one or more detailed test scripts based on the complexity of the process or function. Consider the following when defining test cases:

- What are the varying conditions that may occur while the product is in use?
- What are the expected results?
- What are the conditions that produce errors and exceptions? When are errors and exceptions not expected?

**Prepare Test Environment**

Testing is usually done in a controlled-access, non-production environment. Preparing a test environment includes test environment preparations, seeking approvals and establishing access and/or security for those who will be testing.

**Build Test Data**

Test data is developed to support the specific testing scenarios identified within the test plan and test cases. Normally a copy of live data is used to create test data so that it emulates the real environment. If live data is not available, the data used for testing should be validated for its usefulness.

**Set Up Defect Tracking**

Defects are occurrences where the product does not function as designed. To manage delivery of a quality product, a method is needed to track defects found in testing. The method or tool selected should include a means of indicating not only the error or problem found, but when it was retested and resolved.

Follow this link to view the [Defect Tracking template](#)
Establish Test Reporting
Identify the test reporting to be used, the frequency of the reports and who will use them.

Review Test Preparations
The detailed test plan, test cases, test environment, test data and defect tracking are reviewed prior to starting testing to ensure testing will support the business need. In the review, consider:

✓ Are there outstanding construction issues that will impact testing?
✓ Has the testing environment been established, verified, and controlled?
✓ Has test data been verified?
✓ Is the product ready to be tested?
✓ Is a method of defect tracking and reporting in place?

For review requirements, see the Project Approval Standards in the CSN Project Methodology knowledge areas.

Activity: Testing

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Product</td>
<td>Functional Design, Technical Design, Test Plan, Test Cases</td>
<td>Testing Results</td>
<td></td>
<td>Tester</td>
</tr>
<tr>
<td>Test Procedures</td>
<td>Test Plan, Test Cases, Procedures</td>
<td>Tested Procedures</td>
<td></td>
<td>Tester</td>
</tr>
<tr>
<td>Test Product Documentation</td>
<td>Test Plan, Test Cases, Product Documentation</td>
<td>Tested Product Documentation</td>
<td></td>
<td>Tester</td>
</tr>
<tr>
<td>Update Defect Tracking</td>
<td>Test Plan, Test Cases, Defect Tracking Tool</td>
<td></td>
<td></td>
<td>Tester</td>
</tr>
<tr>
<td>Fix Product</td>
<td>Defect Tracking, Identified Defects</td>
<td>Updated Product</td>
<td></td>
<td>Developer</td>
</tr>
<tr>
<td>Track Test Results</td>
<td>Test Plan, Test Cases, Test Results, Defect Tracking</td>
<td>Tested Results</td>
<td></td>
<td>Tester</td>
</tr>
</tbody>
</table>

Test Product
This function requires thorough testing of the new or modified product and processes before launching the project into the “real world.” Consider the following when testing:

✓ Verify that the product or process meets the agreed upon requirements
✓ Verify that all conditions outlined in the test plan were tested
✓ Test the changes and areas impacted by the change
✓ Verify the expected results
✓ Verify related functions
✓ Review affected reports
✓ Frequent communication of testing results
✓ Communicating the final results of testing
Test Procedures
Procedures related to the new or changed process (operational and support) are tested to make sure they are correct and accurately reflect the process. The procedures are revised as needed based on the testing results.

Test Product Documentation
The product documentation is tested to make sure it accurately describes the product and its functions. The documentation is revised as needed based on the testing results.

Update Defect Tracking
Defects are components of the solution that do not function as designed. The defect tracking tool should be updated with any unexpected results found in testing. Activity is tracked from defect identification through resolution and acceptance.

Fix Product
Product defects are prioritized and corrected. Once defects are repaired, subsequent testing is done to verify the product is functioning as defined.

Track Test Results
Test results will be tracked for quality and completeness. Have all tests been executed and were the expected results obtained.

Activity: Test Summary

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summarize Test Results</td>
<td>Test Plan, Test Cases, Test Results, Defect Tracking</td>
<td>Test Results</td>
<td></td>
<td>Tester</td>
</tr>
<tr>
<td>Review Test Results</td>
<td>Test Plan, Test Cases, Test Results, Defect Tracking, Project to Support Transition</td>
<td>Testing Complete</td>
<td>Project Manager</td>
<td></td>
</tr>
</tbody>
</table>

Summarize Test Results
The test results are summarized in preparation for review and approval.

Review Test Results
A review of the test results is done to assure that testing was completed as planned, the results were as expected and the product is ready for implementation.
**Implementation**

The goal of implementation is to roll out the product or process in a logical manner with minimal disruptions.

Implementation is generally thought of as the time the product is delivered to the customer. However, before this transition can occur, vital pre-implementation steps such as finalizing the implementation and post implementation support plans and conducting training are required. Many of these tasks take place while tasks in the Testing activities are still in progress.

**Activity: Implementation Plan**

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create Implementation Plan</td>
<td>Project Support Plan, Project Schedule</td>
<td>Implementation Plan</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Finalize Post Implementation</td>
<td>Project Support Plan, Project Schedule</td>
<td>Post Implementation Plan Support Plan</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

**Create Implementation Plan**

The detailed tasks needed to prepare the project for implementation are defined. This may include scheduling and holding a meeting to coordinate implementation with other projects. Required notifications, paperwork, timelines, and roles and responsibilities for ensuring that the tasks are completed are identified.

An Implementation Plan and schedule are created so that everyone involved in the implementation is fully aware of all of the activities that will occur. The schedule includes timelines, activities, responsible parties, and a contingency plan in the event problems occur during implementation.

Consider the following when finalizing the Implementation Plan:

- **✓ What are the implementation logistics (scheduling, notification, problem resolution, etc.)?**
- **✓ Are meetings with affected areas needed to communicate the logistics?**
- **✓ Are there special implementation considerations and requirements?**
- **✓ What tasks will be performed and who is responsible for performing, verifying and monitoring the results?**
- **✓ Has a contingency plan been identified should a significant problem occur?**
- **✓ Is there existing information that needs to be modified or converted to accommodate the new product or process? If so, how and when will it be done?**
- **✓ Is coordination with any other projects or entities needed?**
- **✓ What communications are needed? Who is the audience? How and when will information be communicated? Who is responsible for communicating information?**
- **✓ Who will answer questions? Is a designated phone number such as a hotline needed? If so, who is responsible for setting it up and monitoring calls?**

Follow this link to view the [Implementation Plan template](#)
Finalize Post Implementation Support

Details of the Post Implementation support plan are worked out and the plan is finalized. Key questions to consider when finalizing the plan are:

- Is everything in place for support?
- Who are the support resources? Are they confirmed?
- How long will the project team monitor performance?
- Is a process in place for problem reporting, resolution, and communication?
- What level of involvement will the Vendor provide?

Activity: Procedures

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review Procedures</td>
<td>Tested Procedures</td>
<td>Approved Procedures</td>
<td></td>
<td>Project Sponsor</td>
</tr>
<tr>
<td>Implement Process and Publish Procedures</td>
<td>Approved Procedures</td>
<td>Published Procedures</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

Review Procedures

Once the procedures have been tested, they are ready for final review. Procedures relating to core processes are approved at a management level. If a Project to Support Transition was developed, it is reviewed by the Project Manager.

Implement Process and Publish Procedures

The process is implemented. Procedures are published prior to implementation so that impacted areas may acquaint themselves with the changes.

Activity: Product Documentation

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review Product Documentation</td>
<td>Tested Product Documentation</td>
<td>Approved Product Documentation</td>
<td></td>
<td>Project Sponsor</td>
</tr>
<tr>
<td>Publish Product Documentation</td>
<td>Product Documentation</td>
<td>Published Product Documentation</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

Review Product Documentation

Once the documentation has been tested, it is submitted for review.

Publish Product Documentation

The documentation is published prior to implementation so the impacted areas may acquaint themselves with the information.
### Activity: Training

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review Training</td>
<td>Training Materials</td>
<td></td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Conduct Training</td>
<td>Procedures, Product Documentation</td>
<td>Training Complete</td>
<td></td>
<td>Trainer</td>
</tr>
</tbody>
</table>

**Develop Training Program**

The preliminary plan for training, which was started in the Project Support Plan, is further developed into the training program. Development of the training program includes the following:

- Defining the specific topics to be covered, the time needed for training each topic, the sequence of topics and the materials to be developed for each topic
- The activities and exercises that will be used to facilitate learning and where they will be scheduled in the agenda
- Determining and acquiring the equipment and training facilities to be used to deliver the training
- Getting access to the training system to be used for hands-on training
- Determining how training samples of reports, screens and forms will be created without compromising customer privacy
- Scheduling training dates
- Determining how success will be measured

**Create Training Materials**

The materials needed to support the training program are created. These may include creation of:

- Handouts
- Presentations
- Reference Materials
- Instructor’s Guide
Review Training

Once the training materials have been created, they are reviewed. This may be done by conducting a pilot to test the effectiveness of the training program. Those familiar or unfamiliar with the product can give valuable feedback on the effectiveness of the training. Once the agenda is finalized and corrections have been made to the training materials, they are printed for the product training.

Conduct Training

Training is conducted per the training program in preparation for the customer’s use of the new product once it is implemented.

Activity: Product Communications

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create Product Communications</td>
<td>Project Charter, Requirements, Functional Design, Project Schedule</td>
<td>Product Communications</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Approve Product Communications</td>
<td>Product Communications</td>
<td>Approved Product Communications</td>
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<td>Project Sponsor</td>
</tr>
<tr>
<td>Distribute Product Communications</td>
<td>Approved Product Communications</td>
<td>Distributed Product Communications</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

Create Product Communications

The product communications identified in the Project Support plan are created.

Approve Product Communications

The product communications are submitted for approval to those identified in the plan.

Distribute Product Communications

The product communications are distributed as planned in the product communications plan.

Activity: Implementation Readiness

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perform Implementation Readiness Review</td>
<td>Project Deliverables, Implementation Plans, Project to Support Transition</td>
<td>Implementation Readiness Criteria</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

An implementation readiness review is conducted to ensure that the implementation schedule is realistic, everyone is in agreement that the plan is ready for execution, and there have not been any changes which could impact implementation. Consider the following for this review:

- Review of Implementation Plans including project communications
- Verification of required paperwork preparation
- Notification of all affected personnel
- Distribution of the documentation
- Training has been conducted and approved
- Walkthroughs of key deliverables with stakeholders to ensure they are complete

Follow this link to view the Implementation Readiness Criteria template
Activity: Implementation Go / No-Go Decision

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make Implementation Go / No-Go Decision</td>
<td>Implementation Readiness Review</td>
<td>Implementation Go / No-Go Decision</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Create and Obtain Production Change Management Approval</td>
<td>Implementation Plan, Production Change Management Forms, Implementation Go / No-Go Decision</td>
<td></td>
<td></td>
<td>Developer</td>
</tr>
</tbody>
</table>

Make Implementation Go / No-Go Decision

An implementation phase Go / No-Go decision is made based on the Go / No-Go criteria established and answers to the following questions:

- ✓ Does the product meet the business need?
- ✓ Do the testing results support a “Go” decision?
- ✓ Has training been successfully completed?
- ✓ Is the Implementation Plan ready?
- ✓ Are product communications ready for distribution?
- ✓ Is the Post Implementation Plan ready for execution?
- ✓ Is the Implementation Plan in place?

<table>
<thead>
<tr>
<th>Go -</th>
<th>No-Go -</th>
</tr>
</thead>
<tbody>
<tr>
<td>A decision can be made to implement the product</td>
<td>There are critical issues or conditions that impact implementation. These are resolved and implementation is rescheduled.</td>
</tr>
</tbody>
</table>

Follow this link to view the Go / No-Go Decision template

Create and Obtain Production Change Management Approval

Supporting documentation and approval is required when implementing any changes to existing production systems.

Activity: Implementation

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implement Product</td>
<td>Implementation Plan, Approved Production Change Control CM Documentation</td>
<td>Finalized Project to Support Transition</td>
<td>Product in Production</td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

The new or changed product is formally released for use. If more extensive communication was identified in the Communication Plan, that portion of the plan is executed.
Post Implementation

This final project phase includes providing post implementation support, resolving post implementation issues, conducting a post implementation review, performing project closure activities, and celebrating the project’s success!

At the end of this phase, the project is closed.

Activity: Post Implementation Support

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide Post Implementation Support</td>
<td>Implementation Plan, Post Implementation Plan, Project to Support Transition</td>
<td>Defect Tracking update</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

The project team is responsible for monitoring and supporting the product, and correcting project-related defects, for a limited period of time after implementation. Product defects found in production are corrected and the changes are promoted to production. Time spent resolving post implementation issues is considered part of the project and included in the total project hours.

Activity: Lessons Learned

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solicit Project Feedback</td>
<td>Project Deliverables, Lessons Learned Form</td>
<td>Lessons Learned</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Review Lessons Learned</td>
<td>Lessons Learned</td>
<td>Consolidated Lessons Learned</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Determine Actions to Take</td>
<td>Consolidated Lessons Learned</td>
<td></td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

Solicit Project Feedback

A questionnaire is distributed to project team members and stakeholders affected by the project to solicit their feedback. In some instances a customer satisfaction survey may be used to get feedback from customers.

Follow this link to view the Lessons Learned template
Review Lessons Learned

The objective of the review is to identify successes, stumbling blocks encountered throughout the project, and suggestions for improvement for future projects. At the completion of the review, the results are documented and may be consolidated with lessons learned from other projects and then published. Questions to consider during Lessons Learned review:

✔ Were team members, sponsors, stakeholders and end users communicated to properly?
✔ Were all required deliverables completed on time?
✔ Did all team members have a clear understanding of their roles and expectations?
✔ Were issues and risks properly identified and mitigated?
✔ Was all training completed on time?
✔ Did training fulfill the needs of the trainees?
✔ Was project delivered on time?
✔ Did project deliver the pre-project stated scope, goals and objectives?

Determine Action to Take

Determine the action needed resulting from the Lessons Learned review. Actions taken may include but are not limited to the following:

✔ Changes to the PM Methodology
✔ Changes to templates
✔ Changes to resource assignments
✔ Changes to roles & responsibilities

Activity: Quality Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perform Quality</td>
<td>Quality Management Plan, Work</td>
<td>Change Requests, Change Requests</td>
<td>Project</td>
<td></td>
</tr>
<tr>
<td>Assurance</td>
<td>Performance Information, Quality</td>
<td></td>
<td>Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control Measurements</td>
<td></td>
<td>Document updates</td>
<td></td>
</tr>
</tbody>
</table>

Perform Quality Assurance (QA) is the application of planned, systematic quality activities to ensure that the project will employ all processes needed to meet requirements. Perform Quality Assurance is an execution process that uses data created during Perform Quality Control. QA also provides an umbrella for another important quality activity, continuous process improvement. Continuous process improvement provides an iterative means for improving the quality of all processes.

Continuous process improvement reduces waste and no-value-added activities, which allows processes to operate at increased levels of efficiency and effectiveness. Process improvement is distinguished by its identification and review of organizational business processes.
### Activity: Human Resource Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquire Project Team</td>
<td>Enterprise Environmental Factors, Project Organization Charts, Human Resource Management Plan</td>
<td>Project Staff Assignments, Resource Calendars, Project Management Plan updates</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Develop Project Team</td>
<td>Project Staff Assignments, Human Resource Management Plan, Resource Calendars</td>
<td>Team Performance Assessment</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Manage Project Team</td>
<td>Project Staff Assignments, Project Management Plan, Team Performance Assessments, Performance Reports</td>
<td>Change Requests, Project Management Plan updates</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

**Acquire Project Team**

Acquire Project Team is the process of confirming human resource availability and obtaining the team necessary to complete the project assignments. The project management team may or may not have control over team members selected for the project. Factors to consider when assembling the project team:

- Who is available and when are they available?
- What competencies do people possess?
- Have the people done similar or related work? Have they done it well?
- How much will each team member be paid, if they are contracted resources?

**Develop Project Team**

Develop Project Team is the process of improving the competencies, team interaction and overall team environment to enhance project performance. Objectives include:

- Improve skills of team members in order to increase their ability to complete project activities
- Implement collective work environment that promotes team members participation and supports team input

**Manage Project Team**

Manage Project Team is the process of tracking team member performance, providing feedback, resolving issues and managing changes to optimize project performance. Team management involves a combination of skills with special emphasis on communication, conflict management, negotiation and leadership.
Activity: Communication Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribute Information</td>
<td>Communications, Management Plan, Performance Reports</td>
<td>Organizational Process, Assets updates</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

**Distribute Information**

Distribute Information is the process of making relevant information available to project stakeholders as planned. It is performed throughout the entire project life cycle and in all management processes. Effective information distribution includes a number of techniques including, but not limited to:

- Sender-Receiver models – Feedback loops and barriers to communication
- Choice of Media – Situation specifics of when to communicate in writing versus orally, when to write an informal memo versus a formal report, and when to communicate face-to-face versus by e-mail
- Writing Style – Active versus passive voice, sentence structure and word choice
- Meeting Management Techniques – Preparing an agenda and dealing with conflicts
- Presentation Techniques – Body language and design of visual aids
- Facilitation Techniques – Building consensus and overcoming obstacles

As part of the communications process, the sender is responsible for making the information clear and complete so that the receiver can receive it correctly, and for confirming that it is properly understood. Communication has many dimensions:

- Written and oral, listening and speaking
- Internal (within the project) and external (customer)
- Formal (reports, briefings) and informal (memos, ad hoc conversations)
- Vertical (up and down the organization) and horizontal (with peers)

Project information can be distributed using a variety of methods, including:

- Project meetings, hard-copy document distribution and shared-access electronic databases
- Electronic communication and conferencing tools, such as e-mail, voice mail, telephone, video and web conferencing and web publishing
- Electronic tools for project management, such as web interfaces to scheduling and project management software, meeting and virtual office support software, portals and collaborative work management tools.
Manage Stakeholder Expectations

Manage Stakeholder Expectations is the process of communicating and working with stakeholders to meet their needs and addressing issues as they occur. Manage Stakeholder Expectations involves communication activities directed toward project stakeholders to influence their expectations, address concerns and resolve issues, such as:

- Actively managing the expectations of stakeholders to increase the likelihood of project acceptance by negotiating and influencing their desires to achieve and maintain the project goals.
- Addressing concerns that have not become issues yet, usually related to the anticipation of future problems. These concerns need to be uncovered and discussed and the risks need to be assessed.
- Clarifying and resolving issues that have been identified. The resolution may result in a change request or may be addressed outside of the project, for example, postponed for another project or phase.

Managing expectations helps to increase the probability of project success by ensuring that the stakeholders understand the project benefits and risks. This enables them to be active supporters of the project and to help with risk assessment of project choices. By anticipating people’s reaction to the project, preventive actions can be taken to win their support or minimize potential negative impacts.

The project manager is responsible for stakeholder expectations management. Actively managing stakeholder expectations decreases the risk that the project will fail to meet its goals and objectives due to unresolved stakeholder issues and limits disruptions during the project.

Activity: Procurement Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
</table>

Conduct Procurements

Conduct Procurements is the process of obtaining vendor responses, selecting a vendor 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 vendor.

On major procurement items, the overall process of requesting responses from vendors and evaluating those responses can be repeated. A short list of qualified vendors can be established based on a preliminary proposal. A more detailed evaluation can then be conducted based on a more specific and comprehensive requirements document requested from the vendor on the short list.

The tools and techniques described here can be used alone, or in combination, to select vendors. For example, a scorecard system can be used to:

- Select a single vendor that will be asked to sign a standard contract.
- Establish a negotiating sequence by ranking all proposals by the weighted evaluation scores assigned to each proposal.
### MONITORING & CONTROLLING

The Monitoring & Controlling Phase consists of those processes performed required to track, review and regulate the progress and performance of the project; identify any areas in which changes to the plan are required; and initiate the corresponding changes. The key benefit of this Phase is that project performance is observed and measure regularly and consistently to identify variances from the project management plan. The Monitoring and Controlling phase also includes:

- Controlling changes and recommending preventive action in anticipation of possible problems
- Monitoring the ongoing project activities against the project management plan and the project performance baseline
- Influencing the factors that could circumvent integrated change control so only approved changes are implemented

This continuous monitoring provides the project team insight into the health of the project and highlights any areas that require additional attention.

The Monitoring & Controlling process activities occur through the entire project effort. In multi-phase projects, the Monitoring & Controlling process also provides feedback between project phases, in order to implement corrective or preventive actions to bring the project into compliance with the project management plan. When variances jeopardize the project objectives, appropriate project management processes within the Planning Phase are revisited as part of the modified plan-do-check-act cycle. This review can result in recommended updates to the project management plan.

### Activity: Monitor and Control Project Work

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor &amp; Control Project Work</td>
<td>Project Management Plan, Performance Reports</td>
<td>Change Requests, Project Management Plan updates, Project Document updates</td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

### Monitor & Control Project Work

Monitor & Control Project Work is the process of tracking, reviewing and regulating the progress to meet the performance objectives defined in the project management plan. Monitoring is an aspect of project management performed throughout the project. Monitoring includes collecting, measuring and distributing performance information and assessing measurements and trends to effect process improvements. Continuous monitoring gives the project management team insight into the health of the project and identifies any areas that may require special attention. Control includes determining corrective or preventive actions or replanning and following up on action plans to determine if the actions taken resolved the performance issue. The Monitor and Control Project Work process is concerned with:

- Comparing actual project performance against the project management plan.
✓ Assessing performance to determine whether any corrective or preventive actions are needed and then recommending those actions as necessary.
✓ Identifying new risks and analyzing, tracking and monitoring existing project risks to make sure the risks are identified, their status is reported and that appropriate risk response plans are being executed.
✓ Maintaining an accurate and timely information base concerning the project’s product(s) and their associated documentation through project completion.
✓ Providing forecasts to update current cost and current schedule information.
✓ Providing information to support status reporting, progress measurement and forecasting.
✓ Monitoring implementation of approved changes when and as they occur.

Activity: Integrated Change Control

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Work</td>
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</table>

Integrated Change Control

Integrated Change Control is the process of reviewing all change requests, approving changes and managing changes to the deliverables, project documents and the project management plan. Integrated Change Control is conducted from project inception through completion. The project management plan, the project scope statement, and other deliverables must be maintained by continuously managing changes, either by rejecting changes or by approving changes so those approved changes are incorporated into a revised baseline. The Integrated Change Control process includes the following activities:

✓ Influencing the factors that circumvent integrated change control so that only approved changes are implemented
✓ Reviewing, analyzing and approving change requests promptly, which is essential as a slow decision may negatively affect time, cost or the feasibility of a change
✓ Managing the approved changes
✓ Maintaining the integrity of baselines by releasing only approved changes for incorporation into the project management plan and project documents
✓ Reviewing, approving or denying all recommended corrective and preventive actions
✓ Coordinating changes across the entire project (e.g., a proposed schedule change will often affect cost, risk, quality and staffing)
✓ Documenting the complete impact of change requests

Project-wide application of Integrated Change Control accomplishes three main objectives:

✓ Establishes a method to consistently identify and request changes to established baselines, and to assess the value and effectiveness of those changes.
✓ Provides opportunities to continuously validate and improve the project by considering the impact of each change.
✓ Provides the mechanism for the project management team to consistently communicate all changes to the stakeholders.
Activity: Scope Management

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<th>Description</th>
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<th>Primary Responsibility</th>
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</table>

Control Scope

Control Scope is the process of monitoring the status of the project and product scope and managing changes to the scope baseline. Controlling the project scope ensures all requested changes and recommended corrective or preventive actions are processed through the Integrated Change Control process. Uncontrolled changes are often referred to as “scope creep.”

Activity: Time Management

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<tr>
<th>Description</th>
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<th>Primary Responsibility</th>
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</table>

Control Schedule is the process of monitoring the status of the project to update project progress and manage changes to the schedule baseline. Schedule control is concerned with:

- Determining the current status of the project schedule
- Influencing the factors that create schedule changes
- Determining that the project schedule has changed
- Managing the actual changes as they occur
Activity: Cost Management

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<tr>
<th>Description</th>
<th>Inputs</th>
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<th>Primary Responsibility</th>
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</thead>
</table>

Control Costs is the process of monitoring the status of the project to update the project budget and managing changes to the cost baseline. Updating the budget involves recording actual costs spent to date. Any increase to the authorized budget can only be approved through the Integrated Change Control process. Monitoring the expenditure of funds without regard to the value of work being accomplished for such expenditures has little value to the project other than to allow the project team to stay within the authorized funding. Thus much of the effort of cost control involves analyzing the relationship between the consumption of project funds to the physical work being accomplished for such expenditures. The key to effective cost control is the management of the approved cost performance baseline and the changes to that baseline. Project cost control includes:

- Influencing the factors that create changes to the cost baseline
- Ensuring requested changes are agreed upon
- Managing the actual changes when and as they occur
- Ensuring that cost expenditures do not exceed the authorized funding, by period and in total for the project
- Monitoring cost performance to isolate and understand variances from the approved cost baseline
- Monitoring work performance against funds expended
- Preventing unapproved changes from being included in the reported cost or resource usage
- Informing appropriate stakeholders of all approved changes and associated cost
- Acting to bring expected cost overruns within acceptable limits

Activity: Quality Management

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<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perform Quality Control</td>
<td>Project Management Plan, Quality Checklists, Work Performance Measurements, Approved Change Requests, Deliverables</td>
<td>Quality Control Measurements, Validated Changes, Validated Deliverables, Change Requests, Project Management Plan updates, Project Document updates</td>
<td>Project Manager</td>
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</tbody>
</table>

Perform Quality Control (QC) is the process of monitoring and recording results of executing the quality activities to assess performance and recommend necessary changes. Quality control is performed throughout the project. Quality standards include project processes and product goals. Project results include deliverables and project management results, such as cost and schedule performance. Quality control activities identify causes of poor process or product quality and recommend and/or take action to eliminate them.
Activity: Human Resource Management

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<tr>
<th>Description</th>
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<th>Deliverable</th>
<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage Project Team</td>
<td>Project Staff Assignments, Project Management Plan, Team performance</td>
<td>Requested Changes, Project Management Plan updates</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td></td>
<td>Assessments, Performance Reports</td>
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</table>

Manage Project Team is the process of tracking team member performance, providing feedback, resolving issues and coordinating changes to enhance project performance. As a result of managing the project team, the staffing management plan is updated, change requests are submitted, issues are resolved, input is given to organizational performance appraisals and lessons learned are captured.

Managing the project team requires a variety of management skills for fostering teamwork and integrating the efforts of team members to create high-Performance teams. Team management involves a combination of skills with special emphasis on communication, conflict management, negotiation and leadership. Project managers should provide challenging assignments to team members and provide recognition for high performance.

Activity: Communication Management

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</table>

Report Performance

Report Performance is the process of collecting and distributing performance information, including status reports, progress measurements and forecasts. The performance reporting process involves the periodic collection and analysis of baseline versus actual data to understand and communicate the project progress and performance as well as to forecast the project results.
Activity: Risk Management

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<tr>
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</table>

Monitor and Control risks is the process of implementing risk response plans, tracking identified risks, monitoring residual risks, identifying new risks and evaluating risk process effectiveness throughout the project. Planned risk responses that are included in the project management plan are executed during the life cycle of the project, but the project work should be continuously monitored for new, changing and outdated risks. Other purposes of Risk Monitoring and Control are to determine if:

- Project assumptions are still valid
- Analysis shows an assessed risk has changed or can be retired
- Proper risk management policies and procedures are being followed
- Contingency reserves of cost or schedule should be modified in line with the risks of the project

Monitor and Control Risks can involve choosing alternative strategies, executing a contingency or fallback plan, taking corrective action and modifying the project management plan. Monitor and Control Risks also includes updating project lessons learned and risk management templates for the benefit of future projects.
Activity: Procurement Management

<table>
<thead>
<tr>
<th>Description</th>
<th>Inputs</th>
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<th>Milestone</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administer Procurements</td>
<td>Procurement Documents, Project Management Plan, Contract, Performance</td>
<td>Procurement Documentation, Change</td>
<td>Project Manager</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reports, Approved Change Requests, Work Performance Information</td>
<td>Requests, Project Management Plan</td>
<td>updates</td>
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</tr>
</tbody>
</table>

Administer Procurements is the process of managing procurement relationships, monitoring contract performance and making changes and corrections as needed. Both the buyer and the vendor will administer the procurement contract for similar purposes. Each must ensure that both parties meet their contractual obligations and that their own legal rights are protected. The Administer Procurements process ensures that the vendor’s performance meets contractual requirements and that the buyer performs according to the terms of the contract.

Administer Procurements integration will often occur at multiple levels when there are multiple vendors and multiple products, services or results involved. The project management processes that are applied include, but are not limited to:

- Direct and Manage Project Execution to authorize the contractor’s work at the appropriate time
- Performance Reporting to monitor contractor cost, schedule and technical performance
- Perform Quality Control to inspect and verify the adequacy of the contractor’s product
- Integrated Change Control to assure that changes are properly approved and that all those with a need to know are aware of such changes
- Risk Monitoring and Control to ensure that risks are mitigated

Administer Procurements also has a financial management component that involves monitoring of payments to the vendor. This ensures that payment terms defined within the contract are met and that vendor compensation is linked to vendor progress, as defined in the contract.
The Closing Process Group consists of those processes performed to finalize all activities across all Project Management Process Groups to formally complete the project, phase or contractual obligations. This Process Group, when completed, verifies that the defined processes are completed within all the Process Groups to close the project or a project phase as appropriate and formally establishes that the project or project phase is complete. At project or phase closure, the following may occur:

- Obtain acceptance by the customer or sponsor
- Conduct post-project or phase-end review
- Record impacts of tailoring to any process
- Document lessons learned
- Apply appropriate updates to organization process assets
- Archive all relevant project documents in the Project Management Information System to be used as historical data
- Close out procurements

### Closing Phase activities:
- Close Project or Phase
- Close Procurements
- Celebration

### Activity: Close Project or Phase

<table>
<thead>
<tr>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Close Project or Phase</td>
<td>Project Management Plan, Accepted Deliverables</td>
<td>Final Product, Service or Result Transition</td>
<td>Project Closure</td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

Close Project or Phase is the process of finalizing all activities across all the Project management Process Groups to formally complete the project or phase. When closing the project, the project manager will review all prior information from the previous phase closures to ensure that all project work is complete and that the project has met its objectives. Since project scope is measured against the project management plan, the project manager will review that document to ensure completion before considering the project closed. The close Project or Phase process also establishes the procedures to investigate and document the reasons for actions taken if a project is terminated before completion. This includes all of the activities necessary for administrative closure of the project or phase, including step-by-step methodologies that address:

- Actions and activities necessary to satisfy completion or exit criteria for the phase or project
- Actions and activities necessary to transfer the project’s product, services or results to the next phase or to production and/or operations
- Activities needed to collect project or phase records, audit project success or failure, gather lessons learned and archive project information for future use by the organization
Activity: Close Procurements

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<tr>
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<tbody>
<tr>
<td>Close Procurements</td>
<td>Project Management Plan,</td>
<td>Closed Procurements</td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td></td>
<td>Procurement Documentation</td>
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</table>

Close Procurements is the process of completing each project procurement. It supports the Close Project or Phase process since it involves verification that all work and deliverables were acceptable. The Contract Closure process also involves administrative activities, such as updating records to reflect final results and archiving such information for future use. Unresolved claims may be subject to litigation after contract closure. The contract terms and conditions can prescribe specific procedures for contract closure.

Early termination of a contract is a special case of procurement closure and can result from a mutual agreement of the parties, from the default of one of the parties, or for convenience of the buyer if provided for in the contract. The rights and responsibilities of the parties in the event of an early termination are contained in a terminations clause of the contract. Based upon those procurement terms and conditions, the buyer may have the right to terminate the whole contract or a portion of the contract at any time for cause or convenience. However, based upon those contract terms and conditions, the buyer may have to compensate the vendor for vendor’s preparations and for any completed and accepted work related to the terminated part of the contract.

Activity: Celebration

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<tr>
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<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Celebrate Project’s Success</td>
<td>Project Closure</td>
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<td></td>
<td>Project Manager</td>
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</table>

It is important to celebrate the project’s success. This may be as simple as an e-mail announcement to the project team, a notification to CSN, a newsletter article, or a team event.