Course Learning Outcomes for Unit III

Upon completion of this unit, students should be able to:

8. Assess strategies to manage organizational change.
   8.1 Explain how the triple constraints play an integral role in managing a successful project.
   8.2 Explain the relationship between the scope statement and the WBS and why they are fundamental to project success.
   8.3 Identify the critical path of a project and why it is important to an effective schedule management.

Reading Assignment

Chapter 8:  
Scope

Chapter 13:  
Time

Unit Lesson

Project Scope Management

Project scope management includes the processes concerned with all of the work required to successfully deliver a project to the stakeholders’ expectations, manage changes, minimize surprises, and gain acceptance of the product in order to complete the project. During scope management, the project manager should always be in control of the scope and must make sure of the following:

- each requirement is documented with the acceptance criteria defined;
- all the work is being completed;
- define and control what is and is not in the project;
- guard against additional scope not covered under the project charter;
- prevent extra work or “gold plating,” which increases risk and uncertainties and introduces problems into the project;
- proactively identify and influence the factors that cause changes; and
- capture, evaluate, and manage the scope changes in a controlled, structured, and procedural manner (Perrin, 2013).

Key Terms in Project Scope Management:

- Triple constraints: A project’s scope is one the triple constraints, so managing the scope of the project is one of the key ways in which project management performance can be measured. Since scope is usually owned by the project sponsor or the customer but managed by the project manager, project scope management is especially challenging (Perrin, 2013).
• **Scope creep**: Scope creeps are unapproved and undocumented changes, and they occur when changes to the scope are not detected early enough or managed. All these minor changes slowly add up and may have drastic impact on budget, schedule, and quality (Perrin, 2013).

Causes of scope creep can include the following:

• Unexpected scope-related issues: These issues can change project requirements or increase the project’s complexity.
• Placating stakeholders: This involves giving in to stakeholders’ additional requests without following the proper approval process, which can lead to cost and time overruns.
• Perfectionism: Team members often try to improve the product without proper approval, which can also lead to cost and time overruns.
• Misunderstanding about the project scope: Ambiguous and unclear scope can cause the project team to misunderstand requirements about the project, causing scope creep (Turner, 2014).

Project vs. product scope: Project scope management deals with managing both the product scope as well as the project scope. Product scope describes the features, functions, and physical characteristics that characterize a product, service, or result. It may also include subsidiary components. Completion is measured against the product requirements to determine successful fulfilment. While project scope describes work needed to deliver a product, service, or result with the specified features and functions, completion of project scope is measured against the project plan, project scope statement, and work breakdown structure (WBS) (Perrin, 2013).

**Project Scope Management Processes**

The project scope management process helps the project management team determine how the project scope will be defined, how the work breakdown structure (WBS) will be created, how the scope will be validated by the customers and stakeholders at the end of the project and at the end of each project phase, and how the scope will be managed and controlled throughout the project. The project team must have a clear understanding of the project, the business and need for the project, the requirements of the project, and the stakeholder expectations for the project.

The project scope management plan is a planning process, and the first thing you want to do is to plan how to define, validate, and control your project scope and come up with the scope and requirement management plan. You then ask your team members to work closely with the customers and other stakeholders to collect requirements from them. The team members will be working on a requirement document to document the quantifiable needs and expectations of the customers and stakeholders. Next, the team must be working on a scope statement document to develop a comprehensive and detailed description of the project and product and identify all the work that needs to be done to complete project requirement. Now that the team has a clear understanding about the project deliverables, as a project manager you need to decompose these deliverables and project work into smaller, more manageable components so that you can easily assign resources and come up with a detailed WBS. Developing the scope management plan, requirements management plan, requirement document, scope statement documents, and WBS are all done during a planning process group meeting (Turner, 2014).

PMI identifies six key processes that are associated with the scope management areas. Since scope is one of the triple constraints, an understanding of these procedures is vital to project success:

<table>
<thead>
<tr>
<th>Process Group</th>
<th>Detail</th>
<th>Key Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan Scope Management</td>
<td>This is the process of creating a scope management plan that explains how project scope will be defined, validated, and controlled in the project.</td>
<td>Scope Management Plan, Requirement Management Plan</td>
</tr>
</tbody>
</table>
2. Collect Requirements | Planning | This is the process of collecting and documenting measurable needs and expectations of the project stakeholders. | Requirement documentation Requirement Traceability Matrices

3. Define Scope | Planning | This is the process of developing a detailed and comprehensive description of the project/product. | Project Scope Statement

4. Create WBS | Planning | This is the process of breaking down (decomposing) project deliverables, and works into tasks, activities, work packages (Smaller components) | Scope Baseline

5. Validate Scope | Monitoring and Controlling | This is the process of obtaining stakeholder’s formal acceptance of the completed project scope and corresponding deliverables. | Accepted Deliverables Change Requests

Control Scope | Monitoring and Controlling | This is the process of monitoring the project and product status, maintaining control over the project through the management of scope change requests, and managing charges to the scope baseline. | Work Performance Information Change Requests.

(Perrin, 2013)

Now that you know the scope of your project, the next step is to determine how long it would take to complete. This process is known as the project time management processes.

Project time management is focused on planning, developing, managing, executing, and controlling a project schedule. It is important to note that before you start work on the schedule, you should have completed working on the business case, feasibility study, project charter, developed a scope management plan, a requirement management plan, scope statement, and the work breakdown structure (WBS) in a planning process group meeting. When a project manager starts working on the project schedule, he/she—along with the project team—will consider all of the activities that will need to be completed based on the project’s WBS. Once all the project work has been identified and the activity list has been generated, it is time to put the activities into the order necessary to reach the project completion. Once the work has been organized and visualized, it is time to staff it. Project resource estimating considers people that your project will need as well as the materials and equipment. Of course, management and the project stakeholders will want to know how long the project work will take to complete. A project manager must control the project schedule by applying the method of schedule compression and fast tracking (Turner, 2014).
PMI identifies seven key processes that are associated with time management knowledge area. Since time is one of the triple constraints, an understanding of these processes is vital to project success.

<table>
<thead>
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<th>Detail</th>
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</thead>
<tbody>
<tr>
<td>1. Plan Schedule Management</td>
<td>Planning</td>
<td>The process of defining how the project schedule will be planned, developed, managed, executed, and controlled</td>
<td>Schedule Management plan</td>
</tr>
<tr>
<td>2. Define Activities</td>
<td>Planning</td>
<td>The process of decomposing the WBS work packages into schedule activities that are at a level small enough for estimating, scheduling, monitoring, and changing.</td>
<td>Activity List</td>
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<td>Activity Attributes Milestone List</td>
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<tr>
<td>3. Sequence Activities</td>
<td>Planning</td>
<td>The process of identifying and documenting relationships among defined activities and arranging them in the order they must be performed.</td>
<td>Project Schedule Network</td>
</tr>
<tr>
<td>4. Estimate Activity Resources</td>
<td>Planning</td>
<td>The process of estimating the resources such as material, equipment, manpower, and supplies required to perform activities in the project.</td>
<td>Activity Resource Requirements Resource Breakdown Structure</td>
</tr>
<tr>
<td>5. Estimate Activity Durations</td>
<td>Planning</td>
<td>The process of estimating durations for the activities of the project by utilizing scope and resource information, such as in who will be doing the work, resource availability, and number of resource assigned.</td>
<td>Activity Duration Estimates</td>
</tr>
<tr>
<td>6. Develop a Schedule</td>
<td>Planning</td>
<td>The iterative process of analyzing activity sequence, dependency, logical relationships, durations, resources (such as materials, manpower, equipment, supplies), constraints, and assumptions to develop the project schedule with planned dates for project activities completion.</td>
<td>Schedule Baseline Project Schedule</td>
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<tr>
<td>7. Control Schedule</td>
<td>Monitoring &amp; Controlling</td>
<td>The process of monitoring the status of the project by comparing the result to the plan, updating project progress, and managing changes to the project schedule baseline.</td>
<td>Work Performance Information Change Request Schedule Forecasts</td>
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(Perrin, 2013)
Leads and Lags

- Lead: A lead is an acceleration of the successor activity, or in other words, a successor activity getting a jump start. A lead may be added to start an activity before the predecessor activity is completed. For example, there may be a finish-to-start relationship between design and coding in a software development project, but coding may start five days before design is completed. This is an example of a finish–to–start with five days lead.
- Lag: A lag is an inserted waiting time between activities. For example, you must wait three days after pouring concrete before you can construct the frame for the house. This can be shown as a finish-to-start with three day’s lag (Turner, 2014).

Critical Path Method (CPM)

The critical path is the longest path through a network diagram and determines the shortest time to complete the project as well as any scheduling flexibility (Perrin, 2013). It is not the project schedule, but it indicates the time period within which an activity could be scheduled considering activity duration, logical relationships, dependencies, leads, lags, assumptions and constraints. Below are a few important points about the critical path:

- It identifies how much individual activities can be delayed without delaying the project.
- It is the path with zero float. None of the activities in the critical path can slip (Perrin, 2013).

References


Suggested Reading

In order to access the resource below, you must first log into the myCSU Student Portal and access the Business Source Complete database within the CSU Online Library.

This article gives you an insight on how to manage the project triple constraints and its implication to project success: