1

Project Scope Management

2

Project Scope Management

Project Scope Management includes **the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully.**

Managing the project scope is primarily concerned with **defining and controlling what is and is not included in the project.**

3

Project Scope Management

1. **Plan Scope Management :** The process of creating a scope management plan that documents how the project and product scope will be defined, validated, and controlled.
2. **Collect Requirements :** The process of determining, documenting, and managing stakeholder needs and requirements to meet project objectives.
3. **Define Scope :** The process of developing a detailed description of the project and product.
4. **Create WBS :** The process of subdividing project deliverables and project work into smaller, more manageable components.
5. **Validate Scope :** The process of formalizing acceptance of the completed project deliverables.
6. **Control Scope :** The process of monitoring the status of the project and product scope and managing changes to the scope baseline.

4

Project Scope Management Overview

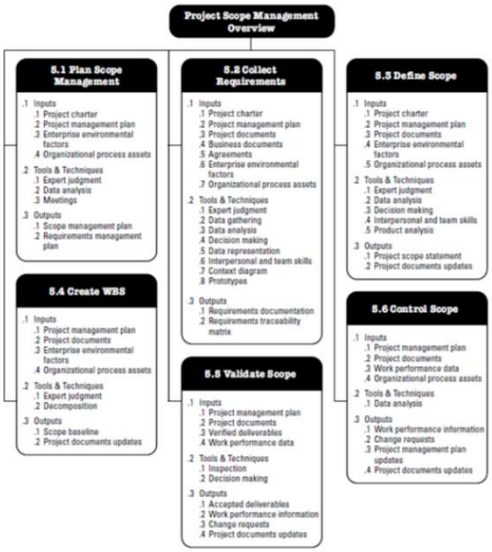

Figure 5-1. Project Scope Management Overview

5

Key Concepts

In the project context, the term "scope" can refer to:

- **Product scope.** The features and functions that characterize a product, service, or result.
- **Project scope.** The work performed to deliver a product, service, or result with the specified features and functions. The term "project scope" is sometimes viewed as including product scope.
- Project life cycles can range along a continuum from ***predictive approaches at one end to adaptive or agile approaches at the other.***
- Predictive life cycle : ***the project deliverables are defined at the beginning of the project and any changes to the scope are progressively managed***.
- Adaptive or agile life cycle : ***the deliverables are developed over multiple iterations where a detailed scope is defined and approved for each iteration when it begins***.

6

Scope Management – Adaptive Life Cycle

- Projects with adaptive life cycles ***are intended to respond to high levels of change and require ongoing stakeholder engagement.***
- The ***overall scope of an adaptive project will be decomposed into a set of requirements and work to be performed, sometimes referred to as a product backlog.***
- At the beginning of an iteration, the team will work to determine how many of the highest-priority items on the backlog list can be delivered within the next iteration.
- Three processes (Collect Requirements, Define Scope, and Create WBS) are repeated for each iteration.
- The sponsor and customer representatives should be continuously engaged with the project to provide feedback on deliverables as they are created and to ensure that the product backlog reflects their current needs.
- Two processes (Validate Scope and Control Scope) are repeated for each iteration.
- Projects with adaptive life cycles use backlogs (including product requirements and user stories) to reflect their current needs.

7

Scope Management – Predictive Life Cycle

- In a predictive project, three processes (Collect Requirements, Define Scope, and Create WBS) are performed toward the beginning of the project and updated as necessary, using the integrated change control process.
- On the contrary, in a predictive project, **Validate Scope** occurs with each deliverable or phase review and **Control Scope** is an ongoing process.

8

Project Scope Management

- Completion of the project scope is measured against the project management plan, while completion of the product scope is measured against the product requirements.
- The term "***requirement***" is defined as a condition or capability that is required to be present in a product, service, or result to satisfy an agreement or other formally imposed specification.
- **Validate Scope** is the process of formalizing acceptance of the completed project deliverables. The verified deliverables obtained from the Control Quality process are an input to the Validate Scope process.
- ***One of the outputs of Validate Scope is accepted deliverables that are formally signed off and approved by the authorized stakeholder***.

9

Business Analysis and Requirements Management

- Business analysis helps organizations achieve competitive advantage by defining, managing, and controlling requirements activities.
- Activities of business analysis may start before a project is initiated and a project manager is assigned.
- *Requirements management process starts with a needs assessment, which may begin in portfolio planning, in program planning, or within a discrete project.*
- *Business analysis should be assigned to resources with sufficient business analysis skills and expertise.*
- Requirement-related activities are the responsibility of Business Analyst.
- The project manager is responsible for ensuring that requirements-related work is accounted for in the project management plan and that requirements-related activities are performed on time and within budget and deliver value.

10

Trends and Emerging practices

Trends and emerging practices for Project Scope Management include collaborating with business analysis professionals to:

- Determine problems and identify business needs;
- Identify and recommend viable solutions for meeting those needs;
- Elicit, document, and manage stakeholder requirements in order to meet business and project objectives; and
- Facilitate the successful implementation of the product, service, or end result of the program or project
- The process ends with the requirements closure, which transitions the product, service, or result to the recipient in order to measure, monitor, realize, and sustain benefits over time.

11

Tailoring Considerations

Because each project is unique and requires to tailor the way Project Scope Management processes.

Considerations for tailoring include but are not limited to:

- **Knowledge and requirements management :** Does the organization have formal or informal knowledge and requirements management systems? What guidelines should the project manager establish for requirements to be reused in the future?
- **Validation and control :** Does the organization have existing formal or informal validation and control-related policies, procedures, and guidelines?
- **Development approach :** Does the organization use agile approaches in managing projects? Is the development approach iterative or incremental? Is a predictive approach used? Will a hybrid approach be productive?
- **Stability of requirements :** Are there areas of the project with unstable requirements? Do unstable requirements necessitate the use of lean, agile, or other adaptive techniques until they are stable and well defined?
- **Governance :** Does the organization have formal or informal audit and governance policies, procedures, and guidelines?

12

Agile/ Adaptive environments

- In projects with evolving requirements, high risk, or significant uncertainty, the scope is often not understood at the beginning of the project, or it evolves during the project.
- Agile methods deliberately spend less time trying to define and agree on scope in the early stage of the project and spend more time establishing the process for its ongoing discovery and refinement.
- Agile methods purposefully build and review prototypes and release versions in order to refine the requirements.
- As a result, scope is defined and redefined throughout the project.
- In agile approaches, the requirements constitute the backlog.

13

R T M

- The requirements traceability matrix (RTM) is a grid that links product requirements from their origin to the deliverables that satisfy them.
- The implementation of a requirements traceability matrix helps ensure that each requirement adds business value by linking it to the business and project objectives.
- It provides a means to track requirements throughout the project life cycle, helping to ensure that requirements approved in the requirements documentation are delivered at the end of the project.
- Finally, it provides a structure for managing changes to the product scope.

Requirements Traceability Matrix

Project Name:	
Cost Center:	
Project Description:	

ID	Associate ID	Requirements Description	Business Needs, Opportunities, Goals, Objectives	Project Objectives	WBS Deliverables	Product Design	Product Development	Test Cases
001	1.0							
	1.1							
	1.2							
	1.2.1							
002	2.0							
	2.1							
	2.1.1							
003	3.0							
	3.1							
	3.2							
004	4.0							
005	5.0							

Figure 5-7. Example of a Requirements Traceability Matrix

14

Project Scope Statement

The project scope statement :

- description of the project scope, major deliverables, assumptions, and constraints.
- documents the entire scope, including project and product scope.
- describes the project's deliverables in detail. It also provides a common understanding of the project scope among project stakeholders.
- contains explicit scope exclusions that can assist in managing stakeholder expectations.
- enables the project team to perform more detailed planning, 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.

15

15

Project Scope Statement

Product scope description : Progressively elaborates the characteristics of the product, service, or result described in the project charter and requirements documentation.

Deliverables : Any unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project. Deliverables also include ancillary results, such as project management reports and documentation.

Acceptance criteria : A set of conditions that is required to be met before deliverables are accepted.

Project exclusions : Identifies what is excluded from the project. Explicitly stating what is out of scope for the project helps manage stakeholders' expectations and can reduce scope creep.

16

16

WBS

Work Breakdown Structure : is the process of subdividing project deliverables and project work into smaller, more manageable components.

The WBS :

- Hierarchical decomposition of the total scope of work to be carried out by the project team to accomplish the project objectives and create the required deliverables.
- Organizes and defines the total scope of the project and represents the work specified in the current approved project scope statement.

The key benefit of this process is that it provides a framework of what has to be delivered.

17

17

WBS

Work Breakdown Structure : is the process of subdividing project deliverables and project work into smaller, more manageable components.

The WBS :

- Hierarchical decomposition of the total scope of work to be carried out by the project team to accomplish the project objectives and create the required deliverables.
- Organizes and defines the total scope of the project and represents the work specified in the current approved project scope statement.

The key benefit of this process is that it provides a framework of what has to be delivered.

- The planned work is contained within the lowest level of WBS components, which are called **work packages**.

18

18

Decomposition

Decomposition is a technique used for dividing and subdividing the project scope and project deliverables into smaller, more manageable parts.

The work package is the work defined at the lowest level of the WBS for which cost and duration can be estimated and managed.

The level of decomposition is often guided by the degree of control needed to effectively manage the project.

Decomposition of the total project work into work packages generally involves the following activities:

- Identifying and analyzing the deliverables and related work,
- Structuring and organizing the WBS,
- Decomposing the upper WBS levels into lower-level detailed components,
- Developing and assigning identification codes to the WBS components, and
- Verifying that the degree of decomposition of the deliverables is appropriate.

19

19

Collecting Requirements - Tools

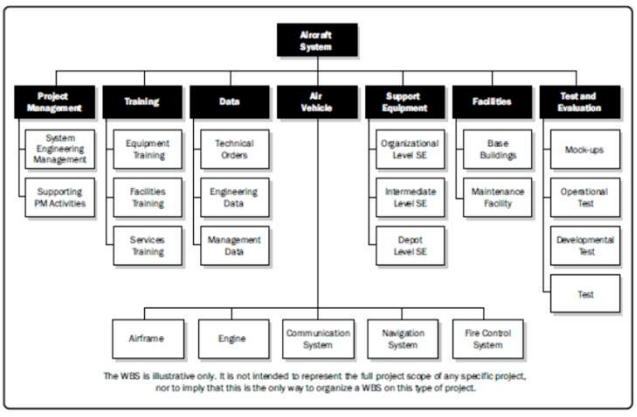

Figure 5-14. Sample WBS with Major Deliverables

20

WBS dictionary

The WBS dictionary :

is a document that provides detailed deliverable, activity, and scheduling information about each component in the WBS.

Information in the WBS dictionary may include but is not limited to:

- Code of account identifier,
- Description of work,
- Assumptions and constraints,
- Responsible organization,
- Schedule milestones,
- Associated schedule activities,
- Resources required,
- Cost estimates,
- Quality requirements,
- Acceptance criteria,
- Technical references, and
- Agreement information.

21

21

Validate Scope

- Validate Scope is the process of formalizing acceptance of the completed project deliverables.
- The key benefit of this process is that it brings objectivity to the acceptance process and increases the probability of final product, service, or result acceptance by validating each deliverable.
- The verified deliverables obtained from the Control Quality process are reviewed with the customer or sponsor to ensure they are completed satisfactorily and have received formal acceptance of the deliverables by the customer or sponsor.
- The **Validate Scope process differs from the Control Quality process** in that the former is primarily concerned with acceptance of the deliverables, while the latter is primarily concerned with correctness of the deliverables and meeting the quality requirements specified.

22

22

Change Request

- The completed deliverables that have not been formally accepted are documented, along with the reasons for non-acceptance of those deliverables.
- Those deliverables may require a change request for defect repair.
- The change requests are processed for review and disposition through the Perform Integrated Change Control process

23

23

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 Perform Integrated Change Control process.
- The ***uncontrolled expansion to product or project scope without adjustments to time, cost, and resources is referred to as scope creep***.
- Change is inevitable; therefore, some type of change control process is mandatory for every project.

24

24

Control Scope – Tools and Techniques

Data analysis techniques used in the Control Scope process

- **Variance analysis :** is used to compare the baseline to the actual results and determine if the variance is within the threshold amount or if corrective or preventive action is appropriate.
- **Trend analysis**: examines project performance over time to determine if performance is improving or deteriorating

25

25

Thank You

26

26