



UNDERSTANDING THE PROJECT SCOPE

OVERVIEW

Gathering requirements, managing scope and meeting customer expectations are major parts of a project manager's work. As a scheduling professional, you need to understand the scope of the project before being able to create a schedule model, identify the right components required and track the schedule effectively.

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. Project scope management is primarily concerned with defining and controlling what is included and what is not included in the project.

The scheduling professional should understand the requirements, scope and customer expectations in order to select the right schedule components and to create the schedule model for that particular project.

WHAT IS PROJECT SCOPE?

The term Scope refers to the deliverables of the project. In a Project Context, Scope can refer to both product scope and process scope.

Product Scope: The features and functions that characterize a product, service, or result.

Project Scope: The work that needs to be accomplished to deliver a product, service, or result with the specified features and functions.

MANAGING PROJECT SCOPE

Project Scope management is an art of meticulous Planning, Monitoring and controlling the work that may be necessary for completing the project. The Scope of the project here refers to all the work required to complete the project. It does not include anything which is not directly related to the project objectives.

The project scope will cover all the work and only the work required to complete the project successfully. Successful project scope Management starts from properly identifying, defining and documenting the requirements of the project stakeholders.

PROJECT SCOPE MANAGEMENT PROCESSES

Project Scope Management process includes the following key processes:

1. Collect Requirements
2. Define Scope
3. Create WBS
4. Verify Scope
5. Control Scope

Project scope management needs to be well integrated with other Knowledge Area processes, so that the work of the project will result in delivery of the specified product scope.

COLLECT REQUIREMENTS

This is the process of elucidating the stated and implied needs of the project stakeholders. The project team should define, analyse and document those requirements in clear and concise terms.

The requirements collected should include both Project and Product requirements.

Project requirements are the business requirements, project management requirements and delivery requirements, etc.....

The product requirements are the product features requirements, technical requirements, performance requirements, security requirements, etc...

The success of the project begins with successful requirement gathering without any ambiguity.

COLLECT REQUIREMENTS

Inputs	Tools and techniques	Outputs
<ul style="list-style-type: none">✓ Project charter✓ Stakeholder register	<ul style="list-style-type: none">✓ Interviews✓ Focus groups✓ Facilitated workshops✓ Group creativity techniques✓ Group decision making techniques✓ Questionnaires and surveys✓ Observations✓ Prototypes	<ul style="list-style-type: none">✓ Requirements documentation✓ Requirements management plan✓ Requirements traceability matrix

COLLECT REQUIREMENTS

Collect Requirements – Inputs

Project Charter: A project charter is the formal document authorizing the initiation of any project. It will contain the high level project and product requirements.

Stakeholder Register: The Stakeholder register will contain all the information about the project stakeholders.

Collect Requirements – Tools & Techniques

Interviews: Interviewing is a formal or informal meeting between the project team member(s) and the project stakeholder(s), project participant(s) or subject matter experts for the purpose of obtaining information about the project requirements.

COLLECT REQUIREMENTS

Focus Groups: A focus group is a form of qualitative research for identifying the requirements of the project. The groups of people who are involved in the project, project stakeholders or subject matter experts are free to express their expectations and attitude towards the proposed project's product, service, or results. These discussions are typically controlled by a moderator, who guides the discussions in order to obtain the group's opinion on the topic.

Facilitated Workshop: Facilitated workshops are primary tools for defining cross functional requirements which will settle stakeholder differences.

Group Creativity Techniques: Some of these techniques are

Brainstorming: Brainstorming is an effective way to generate multiple ideas on a specific issue and then determine which idea – or ideas – is the best solution.

COLLECT REQUIREMENTS

Nominal group techniques: This is also a form of Brainstorming, where the generation of idea is done by a small group and then the ideas generated are reviewed by another bigger group.

Delphi technique: This is useful in collecting data without any bias and reducing the undue influence of one participant on another. Data is collected anonymously through a questionnaire to solicit ideas on risk. The responses are summarized and circulated among the participants. Consensus may be reached after a few rounds of this process.

Idea Mind mapping: A mind map is a diagram used to represent words, ideas, tasks, or other items linked to and arranged around a central key word or idea. Mind maps are used to generate, visualize, structure, and classify ideas, and as an aid to studying and organizing information, solving problems, making decisions, and writing.

Affinity Diagram: Affinity Diagram is a tool used to group complex and apparently unrelated data into natural and meaningful groups of data.

COLLECT REQUIREMENTS

Group Decision Making Technique: The Group Decision Making technique will help the project team generate, classify and prioritize product requirements. The requirements/features will be discussed in a group and decisions can be taken based on

- Unanimity
- Majority
- Plurality
- Dictatorship

Questionnaires and Surveys: The project team can prepare a predefined set of questionnaires and conduct a survey to collect information from a broad audience base.

Observations: Observation is directly watching the process being performed by any individual in its environment or a product being used in its intended environment.

COLLECT REQUIREMENTS

Prototypes: Prototyping is a modelling method in which full model / scale model of an existing or a new product is created to understand the design challenges and user related issues.

Collect Requirements – Outputs

Requirements Documentation: The requirements collected in the requirement collection phase are clearly documented. This can be a simple document listing all the requirements or can be a detailed one containing all the descriptions and attachments.

Requirement Management Plan: The Requirement Management Plan details how the project requirement will be collected, analysed, documented and managed throughout the project.

Requirements Traceability Matrix: A Requirements Traceability Matrix helps to trace a requirement throughout the life cycle. It provides visibility into the completeness of the quantitative definition and testability of each requirement.

DEFINE SCOPE

Developing a detailed description of the project and its product is very critical to the success of any project. In Define Scope process, the project scope and the product scope are clearly defined and documented.

Inputs	Tools and Techniques	Outputs
<ul style="list-style-type: none">✓ Project charter✓ Requirements documentation✓ Organizational process assets	<ul style="list-style-type: none">✓ Expert judgement✓ Product analysis✓ Alternatives identification✓ Facilitated workshops	<ul style="list-style-type: none">✓ Project scope statement✓ Project document updates

DEFINE SCOPE

Define Scope – Inputs

Project Charter: The Project Charter is a formal authorization document for any project. It may have very high level information about the project, its business case and the deliverables.

Requirements Documents: Please refer to the Collect Requirements – Outputs section.

Organizational Process Assets: Some of the OPA elements which will be useful in defining the project scope are organizational policies, procedures, guidelines and lessons learned from the previous projects.

DEFINE SCOPE

Define Scope – Tools & Techniques

Expert Judgment: Expert Judgment is one tool in which the project manager or his team may rely on the opinion of an expert in the particular field to define the scope.

Product Analysis: The product analysis tool will help the project team to define the scope of a project, which has a product as its deliverable and not a service or result.

Alternative Identification: This is a tool in which the different approaches or methods available to perform / execute a project work are to be considered by the project team.

Facilitated Workshop: Please refer to the Collect Requirements – Tools and Techniques section.

DEFINE SCOPE

Define Scope – Outputs

Project Scope Statement: A project scope statement is a document that defines a project and what it does and does not need to accomplish.

Project Document Updates: Some of the Project documents that may get updated as part of Define Scope process are:

- Stakeholder Register
- Requirements Documentation
- Requirements Traceability Matrix etc...

CREATE WBS

Create WBS (Work Breakdown Structure) is the process of subdividing the deliverables and project work into smaller and more manageable components.

“The Work Breakdown Structure (WBS) is a deliverable-oriented hierarchical decomposition of the work to be executed by the project team to accomplish the project objectives and create the required deliverables.” - PMBOK® Guide 4th Edition

Inputs	Tools and Techniques	Outputs
<ul style="list-style-type: none"> ✓ Project scope statement ✓ Requirements documentation ✓ Organizational process assets 	<ul style="list-style-type: none"> ✓ Decomposition 	<ul style="list-style-type: none"> ✓ WBS ✓ WBS dictionary ✓ Scope baseline ✓ Project document updates

CREATE WBS

Create WBS – Inputs

Project Scope Statement: Please refer to the Define Scope – Outputs section.

Requirements Documentation: Please refer to the Collect Requirements – Outputs section.

Organizational Process Assets: The Performing Organization's policies, procedures, guidelines and templates with respect to creation of WBS, Previous project documents and lessons learned from the past project are some of the OPA inputs that can be used in creating the WBS.

CREATE WBS

Create WBS – Tools and Techniques

Decomposition: Decomposition is a technique used to break down the project deliverable into smaller and more manageable components.

Create WBS – Outputs

WBS: The work breakdown structure (WBS) is the primary output of Create WBS process. WBS is a hierarchical structure in which project deliverables are decomposed into smaller components.

WBS Dictionary: A WBS dictionary is a companion document of WBS and contains details about each element in the WBS.

CREATE WBS

Scope Baseline: Scope Baseline is a component of Project Management Plan, which includes

- Project Scope Statement
- WBS
- WBS Dictionary

Project Document Updates: Requirements Document is one of the documents that may get updated as part of Create WBS process, if it results in any approved change requests.

VERIFY SCOPE

Verifying scope is the process of formally accepting the completed project deliverables. Before you hand over the project deliverables to the appropriate party mentioned in the project management plan, such as the customer or the sponsor, you need to verify that these deliverables actually meet the planned scope.

Inputs	Tools and Techniques	Outputs
<ul style="list-style-type: none"> ✓ Validated deliverables ✓ Project management plan: Scope baseline ✓ Requirement documentation ✓ Requirement traceability matrix 	<ul style="list-style-type: none"> ✓ Inspection 	<ul style="list-style-type: none"> ✓ Accepted deliverables ✓ Change requests ✓ Project document updates

VERIFY SCOPE

Verify Scope – Inputs

Validated Deliverables: These are deliverables that have been completed and checked for correctness.

Project Management Plan (Scope baseline): Please refer to the Create WBS – Outputs section.

Requirement documentation: Please refer to the Collect Requirements – Outputs section.

Requirement traceability matrix: Please refer to the Collect Requirements – Outputs section.

VERIFY SCOPE

Verify Scope – Tools and Techniques

Inspection: Inspection includes activities such as measuring, examining, and verifying to determine whether work and deliverables meet requirements and product acceptance criteria.

Verify Scope – Outputs

Accepted deliverables: These are deliverables that meet the acceptance criteria and are formally signed off and approved by the customer or sponsor.

Change requests: These are requests for defect repairs of deliverables that have not been formally accepted.

Project Document updates: Documents that may be updated include those that define the product or report status on product completion.

CONTROL SCOPE

Controlling the project scope includes influencing factors that create changes to the scope, as well as managing change requests and controlling their impact when the change actually occurs.

Inputs	Tools and Techniques	Outputs
<ul style="list-style-type: none"> ✓ Project management Plan ✓ Work performance information ✓ Requirements documentation ✓ Requirements traceability matrix ✓ Organizational process assets 	<ul style="list-style-type: none"> ✓ Variance analysis 	<ul style="list-style-type: none"> ✓ Work performance measurements ✓ Change requests ✓ Project management plan update ✓ Project document updates

CONTROL SCOPE

Control Scope – Inputs

Project Management Plan: The Project management plan integrates and consolidates all of the subsidiary management plan and baselines. The subsidiary plans and baselines used in the control scope process include

- Scope baseline
- Scope management plan
- Change management plan
- Configuration management plan
- Requirements management plan

Work Performance Information: This is the information about project progress, such as which deliverables have started, their progress and which deliverables have finished.

CONTROL SCOPE

Requirements documentation: Please refer to the Collect Requirements – Outputs section.

Requirements traceability matrix: Please refer to the Collect Requirements – Outputs section.

Organizational Process Assets: Some of the organizational process assets that could influence the control scope process are organizational policies, procedures, guidelines and monitoring and reporting methods to be used.

Control Scope – Tools and Techniques

Variance analysis: This is the assessment of the magnitude of variation of project performance from the original scope baseline.

CONTROL SCOPE

Control Scope – Outputs

Work Performance Measurements: These measurements can include planned versus actual technical performance or other scope performance measurements.

Change requests: Please refer to the Verify Scope – Outputs section.

Project Management Plan updates: The scope baseline and other baselines are revised and reissued to reflect any approved changes.

Project document updates: Some of the Project documents that may get updated are

- Requirements documentation
- Requirements traceability matrix

SUMMARY

Understanding the project stakeholder's requirement and agreeing upon the project deliverables is a crucial process in a project and it influences the success of any project to a great extent.

The project management team has to ensure that right processes are in place to collect customer requirements, to define and agree on the project deliverables and to decide how changes if any will be processed and disposed appropriately.