Project Management Professional (PMP)

Section (5)
Project Scope Management

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PMBOK 5th. Edition

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.

Project Scope Management

- The Project Scope Management processes:
  - 5.1 Plan Scope Management
  - 5.2 Collect Requirements
  - 5.3 Define Scope
  - 5.4 Create WBS
  - 5.5 Validate Scope
  - 5.6 Control Scope

These processes interact with each other and with processes in other Knowledge Areas

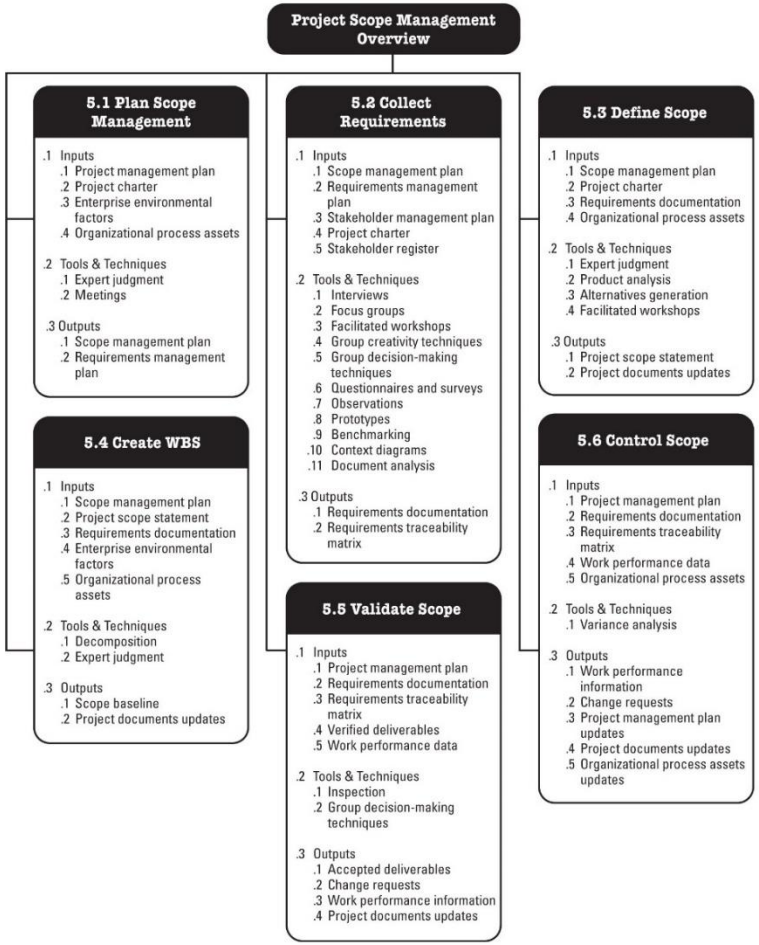


Figure 5-1. Project Scope Management Overview

Project Scope Management

- 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.

5.1 Plan Scope Management (PG: Planning)

- The process of creating a scope management plan that **documents** how the project scope will be defined, validated, and controlled.

- The development of the scope management plan & the detailing of the project scope begin with the analysis of information contained in:
  - Project charter (Section 4.1.3.1)
  - Project management plan (Section 4.2.3.1)
  - Organizational Process Assets (OPAs) (Section 2.1.4)
  - Enterprise Environmental Factors (EEFs) (Section 2.1.5)

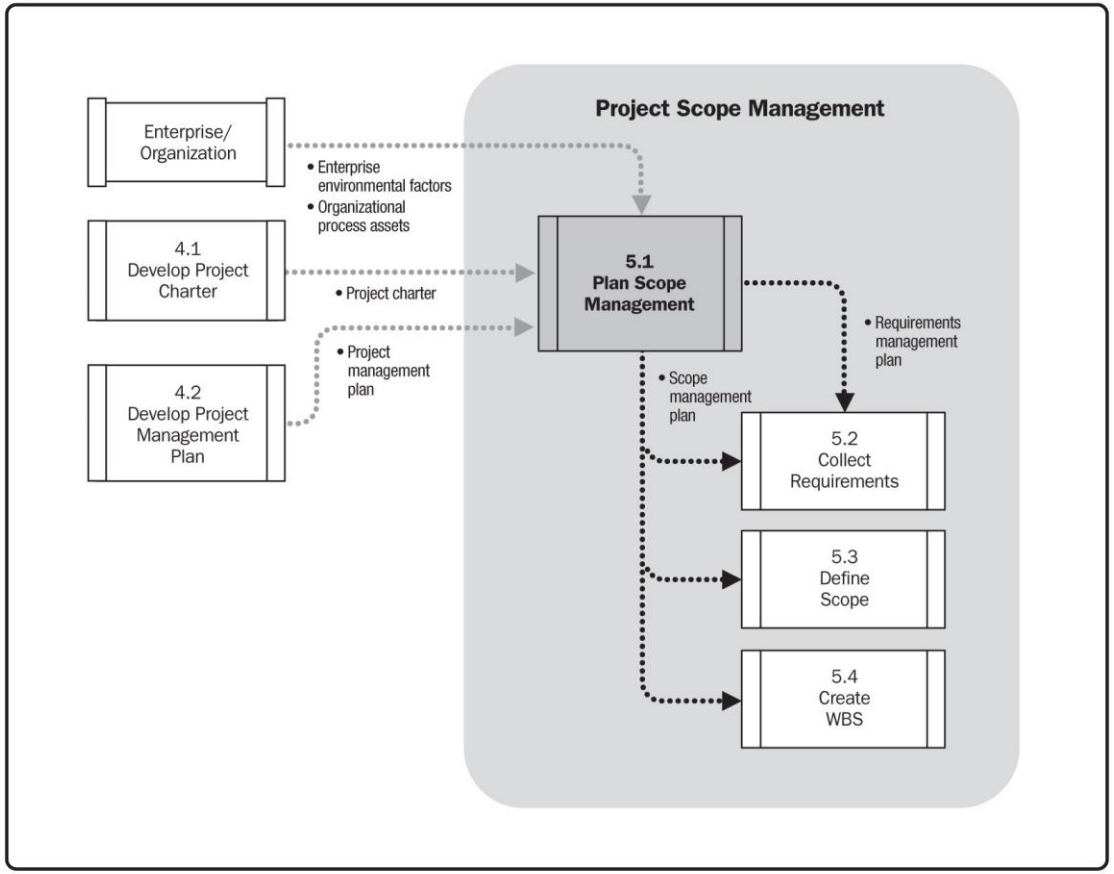


Figure 5-3. Plan Scope Management Data Flow Diagram

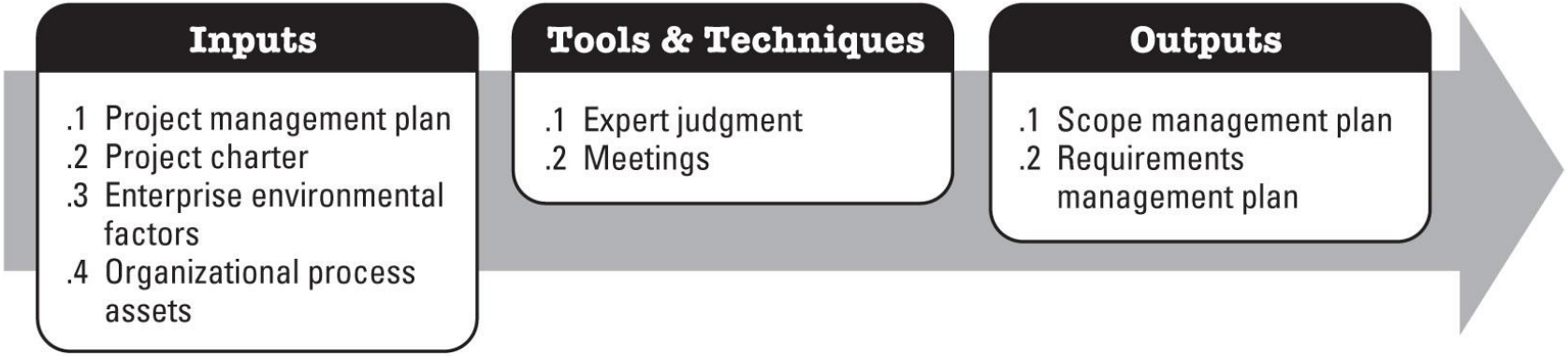


Figure 5-2. Plan Scope Management: Inputs, Tools & Techniques, and Outputs

5.1.1 Plan Scope Management: Inputs

- 5.1.1.1 Project Management Plan (Out: 4.2)
  - Approved subsidiary plans of the project management plan are used to create the scope management plan and influence the approach taken for planning scope and managing project scope.

5.1.1 Plan Scope Management: Inputs

- 5.1.1.2 Project Charter (Out: 4.1)
  - The project charter is used to provide the project context needed to plan the scope management processes.
  - It provides the high-level project description and product characteristics from the project statement of work (SOW).

5.1.1 Plan Scope Management: Inputs

- 5.1.1.3 Enterprise Environmental Factors (EEFs) (Out: 2.1.5)

  - The enterprise environmental factors that can influence the Plan Scope Management process include::
    - Organization's culture
    - Infrastructure
    - Personnel administration
    - Marketplace conditions

5.1.1 Plan Scope Management: Inputs

- 5.1.1.4 Organizational Process Assets (Out: 2.1.4)

  - The organizational process assets that can influence the Plan Scope Management process include:
    - Policies and procedures.
    - Historical information and lessons learned knowledge base.

5.1.2 Plan Scope Management: Tools and Techniques

- 5.1.2.1 Expert Judgment
  - Expert judgment refers to input received from **knowledgeable** and **experienced parties.**
  - Expertise may be provided by any group or person with specialized education, knowledge, skill, experience, or training in developing scope management plans.

5.1.2 Plan Scope Management: Tools and Techniques

- 5.1.2.2 Meetings
  - Project teams may attend project meetings to develop the scope management plan.
  - Attendees at these meetings may include the project manager, the project sponsor, selected project team members, selected stakeholders, anyone with responsibility for any of the scope management processes, and others as needed.

5.1.3 Plan Scope Management: Outputs

- 5.1.3.1 Scope Management Plan
  - The scope management plan is a component of the project or program management plan that describes how the scope will be defined, developed, monitored, controlled, and verified.
  - The scope management plan is:
    - A major input into the **Develop Project Management Plan process**, and the other scope management processes.

5.1.3 Plan Scope Management: Outputs

- 5.1.3.2 Requirements Management Plan
  - The requirements management plan is a component of the project management plan that describes how requirements will be analyzed, documented and managed.
  - The phase-to-phase relationship, strongly influences how requirements are managed.
  - The project manager chooses the most effective relationship for the project and documents this approach in the requirements management plan.
  - Many of the requirements management plan components are based on that relationship.

5.2 Collect Requirements (PG: Planning)

- The process of **determining, documenting,** and **managing** stakeholder needs and requirements to meet project objectives.

  - The requirements need to be elicited, analyzed, and recorded in enough detail to be included in the scope baseline and to be measured once project execution begins.
  - Requirements become the foundation of the **WBS**.

5.2 Collect Requirements (PG: Planning)

- Requirements can be grouped into classifications, These classifications include:
  - Business requirements
  - Stakeholder requirements
  - Solution requirements
    - Functional requirements
    - Nonfunctional requirements
  - Transition requirements
  - Project requirements
  - Quality requirements

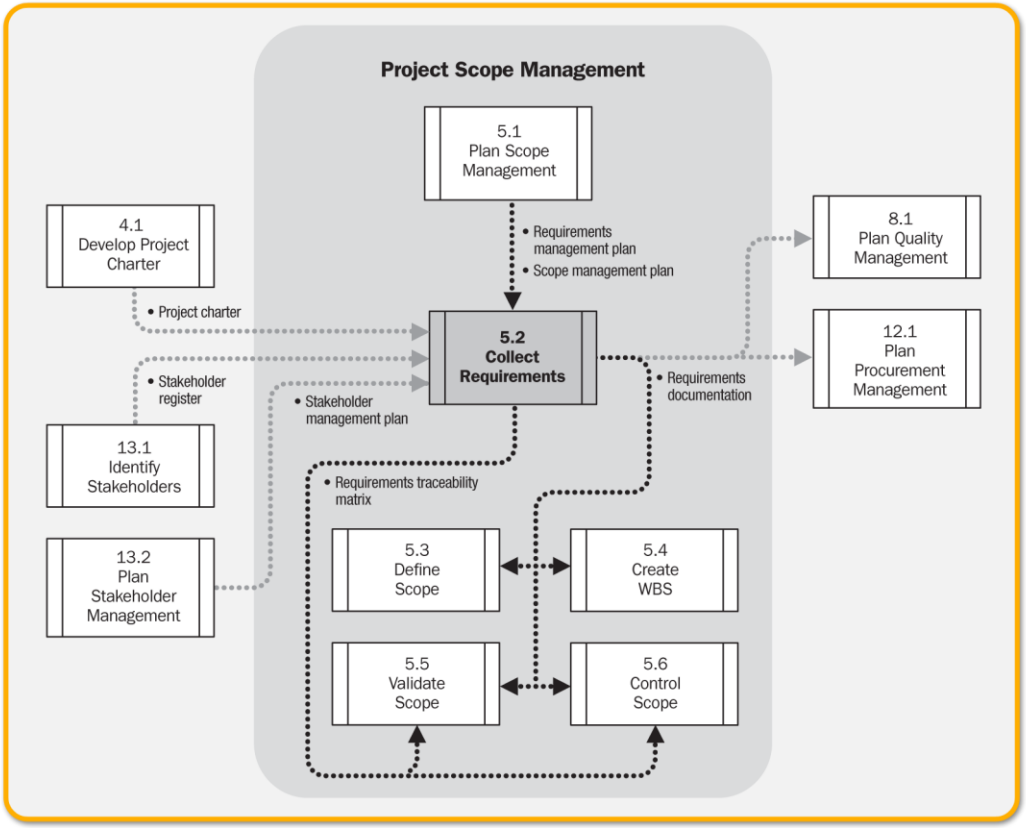


Figure (5.5) Collect Requirements Data Flow Diagram

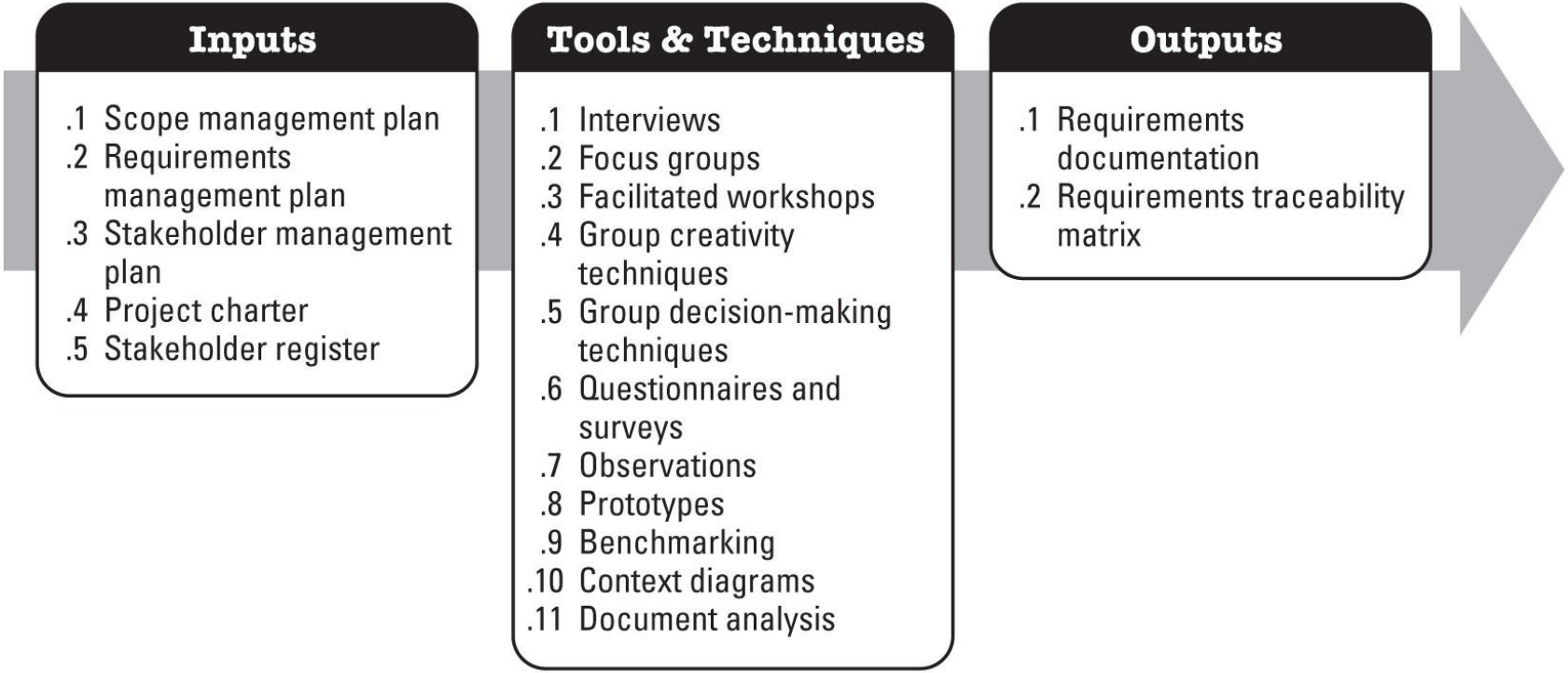


Figure 5-4. Collect Requirements: Inputs, Tools & Techniques, and Outputs

5.2.1 Collect Requirements: Inputs

- 5.2.1.1 Scope Management Plan (Out: 5.1)

  - The scope management plan provides clarity as to how project teams will determine which type of requirements need to be collected for the project.

5.2.1 Collect Requirements: Inputs

- 5.2.1.2 Requirements Management Plan (Out: 5.1)

  - The requirements management plan provides the processes that will be used throughout the Collect Requirements process to define and document the stakeholder needs.

5.2.1 Collect Requirements: Inputs

- 5.2.1.3 Stakeholder Management Plan (Out: 13.2)

  - The stakeholder management plan is used to understand stakeholder communication requirements and the level of stakeholder engagement in order to assess and adapt to the level of stakeholder participation in requirements activities.

5.2.1 Collect Requirements: Inputs

- 5.2.1.4 Project Charter (Out: 4.1)
  - The project charter is used to provide the high-level description of the product, service, or result of the project so that detailed requirements can be developed.

5.2.1 Collect Requirements: Inputs

- 5.2.1.5 Stakeholder Register (Out: 13.1)
  - The stakeholder register is used to identify stakeholders who can provide information on the requirements.
  - The stakeholder register also captures major requirements and main expectations stakeholders may have for the project.

5.2.2 Collect Requirements: Tools and Techniques

- 5.2.2.1 Interviews
  - An interview is a formal or informal approach to elicit information from stakeholders by talking to them directly.
  - It is typically performed by asking prepared and spontaneous questions and recording the responses.
  - Interviews are often conducted on an individual basis between an interviewer and an interviewee, but may involve multiple interviewers and/or multiple interviewees.

5.2.2 Collect Requirements: Tools and Techniques

- 5.2.2.2 Focus Groups
  - Focus groups bring together **prequalified stakeholders** and **subject matter experts** to learn about their expectations and attitudes about a product, service, or result.
  - A trained moderator guides the group through an interactive discussion, designed to be more conversational than a one-on-one interview.

5.2.2 Collect Requirements: Tools and Techniques

- 5.2.2.3 Facilitated Workshops
  - Facilitated workshops are focused sessions that bring key stakeholders together to define product requirements.
  - Workshops are considered a primary technique for quickly defining cross-functional requirements and reconciling stakeholder differences.

5.2.2 Collect Requirements: Tools and Techniques

- 5.2.2.4 Group Creativity Techniques
  - Several group activities can be organized to identify project and product requirements:
    - Brainstorming
    - Nominal group technique (NGT)
    - Idea/mind mapping:
    - Affinity diagram
    - Multicriteria decision analysis

5.2.2 Collect Requirements: Tools and Techniques

- 5.2.2.5 Group Decision-Making Techniques
  - A group decision-making technique is an assessment process having multiple **alternatives** with an expected outcome in the form of future actions.
  - There are various methods of reaching a group decision, such as:
    - **Unanimity:** (everyone agrees on a single course of action)
    - **Majority:** (With support obtained from more than 50 % of the members)
    - **Plurality:** (Largest block in a group decides)
    - **Dictatorship:** (one individual makes the decision for the group)

5.2.2 Collect Requirements: Tools and Techniques

- 5.2.2.6 Questionnaires and Surveys
  - Questionnaires and surveys are written sets of questions designed to quickly accumulate information from a large number of respondents.

- 5.2.2.7 Observations (Job Shadowing)
  - Observations provide a direct way of viewing individuals in their environment and how they perform their jobs or tasks and carry out processes.

5.2.2 Collect Requirements: Tools and Techniques

- 5.2.2.8 Prototypes
  - A method of obtaining early feedback on requirements by providing a working **model of the expected product** before actually building it.
  - Storyboarding is a prototyping technique showing sequence or navigation through a series of images or illustrations.

5.2.2 Collect Requirements: Tools and Techniques

- 5.2.2.9 Benchmarking (Best Practice)
  - Involves comparing actual or planned practices, such as processes and operations, to those of comparable organizations to identify best practices, generate ideas for improvement, and provide a basis for measuring performance.

5.2.2 Collect Requirements: Tools and Techniques

- 5.2.2.10 Context Diagrams
  - Visually depict the product scope by showing a business system (process, equipment, computer system, etc.), and how people and other systems (actors) interact with it.
  - Context diagrams show inputs to the business system, the actor(s) providing the input, the outputs from the business system, and the actor(s) receiving the output.

5.2.2 Collect Requirements: Tools and Techniques

- 5.2.2.11 Document Analysis
  - Used to elicit requirements by **analyzing existing documentation and identifying information** relevant to the requirements.
  - Examples of documents that may be analyzed include:
    - Business plans
    - Agreements
    - Current Process Flows
    - Problem/Issue Logs
    - Regulatory Documentation (laws, codes, or ordinances, etc.)
    - Marketing Literature
    - Requests for Proposal (RFP)
    - Application Software Documentation
    - Policies & Procedures

5.2.3 Collect Requirements: Outputs

- 5.2.3.1 Requirements Documentation
  - Describes how individual requirements meet the business need for the project.
  - Requirements may start out at a high level and become progressively more detailed as more about the requirements is known.
  - Before being baselined, requirements need to be measurable and testable, traceable, complete, consistent, and acceptable to key stakeholders.

5.2.3 Collect Requirements: Outputs

- 5.2.3.1 Requirements Documentation (Cont.)
  - Components of requirements documentation can include:
  - Business requirements:
  - Stakeholder requirements:
  - Solution requirements:
  - Project requirements:
  - Transition requirements.
  - Requirements assumptions, dependencies, and constraints.

5.2.3 Collect Requirements: Outputs

- 5.2.3.2 Requirements Traceability Matrix (RTM)
  - The requirements traceability matrix 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.

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 5-6. Example of a Requirements Traceability Matrix

5.3 Define Scope (PG: Planning)

- The process of **developing** a detailed description of the project and product.

  - The key benefit of this process is:
    - It describes the project, service, or result boundaries by defining which of the requirements collected will be included in and excluded from the project scope.

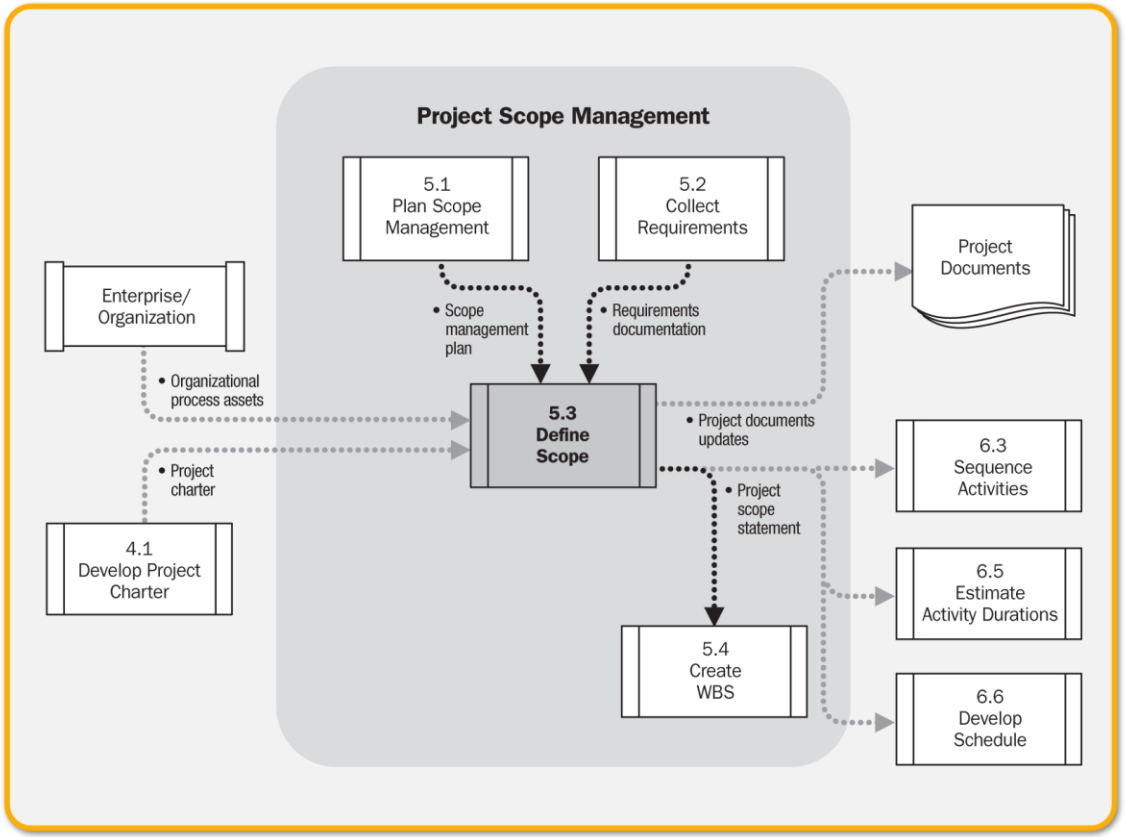


Figure (5.3) Plan Scope Management Data Flow Diagram

Figure 5-7. Define Scope: Inputs, Tools & Techniques, and Outputs

5.3.1 Define Scope: Inputs

- 5.3.1.1 Scope Management Plan (Out: 5.1)

  - The scope management plan is a component of the project management plan that establishes the activities for developing, monitoring, and controlling the project scope.

5.3.1 Define Scope: Inputs

- 5.3.1.2 Project Charter (Out: 4.1)
  - The project charter provides the high-level project description and product characteristics. It also contains project approval requirements.
  - If a project charter is not used in the performing organization, then comparable information needs to be acquired or developed, and used as a basis for the detailed project scope statement.

5.3.1 Define Scope: Inputs

- 5.3.1.3 Requirements Documentation (Out: 5.2)
  - This documentation will be used to select the requirements that will be included in the project.

- 5.3.1.4 Organizational Process Assets (OPAs) (Out: 2.1.4)
  - Organizational process assets can influence how scope is defined. Examples include:
    - Policies, procedures, and templates for a project scope statement;
    - Project files from previous projects; and
    - Lessons learned from previous phases or projects.

5.3.2 Define Scope: Tools and Techniques

- 5.3.2.1 Expert Judgment
  - Used to analyze the information needed to develop the project scope statement.
  - Such expertise is provided by any group or individual with specialized knowledge or training, and is available from many sources, including:
    - Other units within the organization.
    - Consultants.
    - Stakeholders, including customers or sponsors.
    - Professional and technical associations.
    - Industry groups.
    - Subject matter experts.

5.3.2 Define Scope: Tools and Techniques

- 5.3.2.2 Product Analysis
  - For projects that have a **product as a deliverable**, as opposed to a service or result, product analysis can be an effective tool.

5.3.2 Define Scope: Tools and Techniques

- 5.3.2.3 Alternatives Generation
  - Alternatives generation is a technique used to develop as many **potential options as possible** in order to identify different approaches to execute and perform the work of the project.
  - A variety of general management techniques can be used, such as brainstorming, lateral thinking, analysis of alternatives, etc.

5.3.2 Define Scope: Tools and Techniques

- 5.3.2.4 Facilitated Workshops
  - The participation of key players with a variety of expectations and/or fields of expertise in these intensive working sessions helps to reach a cross-functional and common understanding of the project objectives and its limits.

5.3.3 Define Scope: Outputs

- 5.3.3.1 Project Scope Statement
  - The description of the project scope, major deliverables, assumptions, and constraints.
  - The project scope statement documents the entire scope, including project and product scope.
  - It describes, in detail, the project's deliverables and the work required to create those deliverables.

5.3.3 Define Scope: Outputs

- 5.3.3.1 Project Scope Statement (Cont.)
  - The detailed project scope statement, either directly, or by reference to other documents, includes the following:
    - Product scope description
    - Acceptance criteria
    - Deliverable

5.4 Create WBS (PG: Planning)

- The process of **subdividing project deliverables and project work into smaller, more manageable components.**
- **WBS:**
  - a 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.
  - The WBS organizes and defines the total scope of the project, and represents the work specified in the current approved project scope statement.

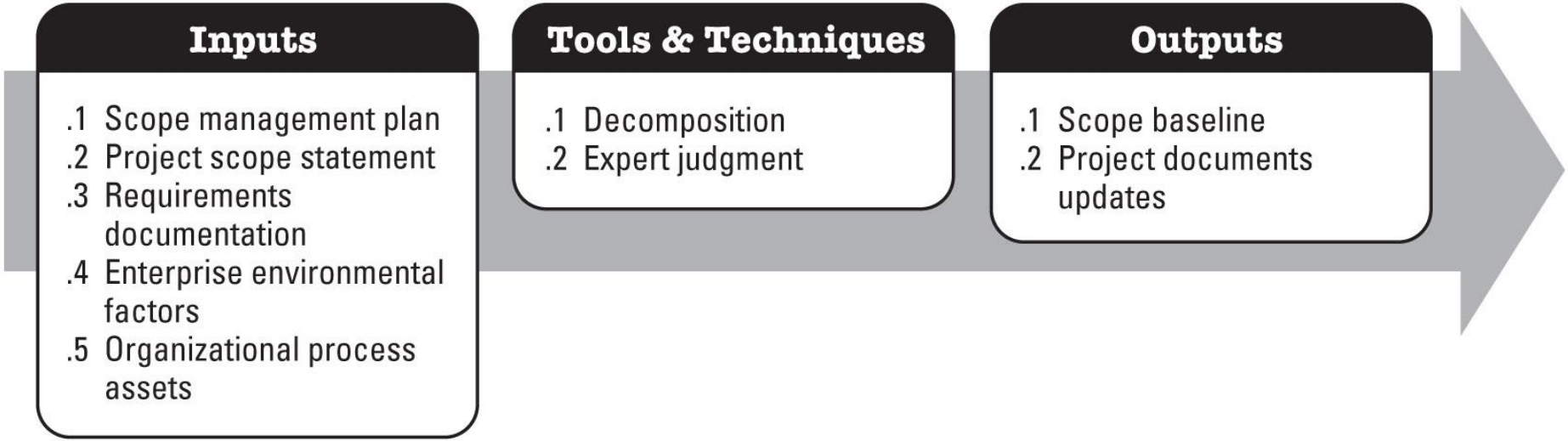
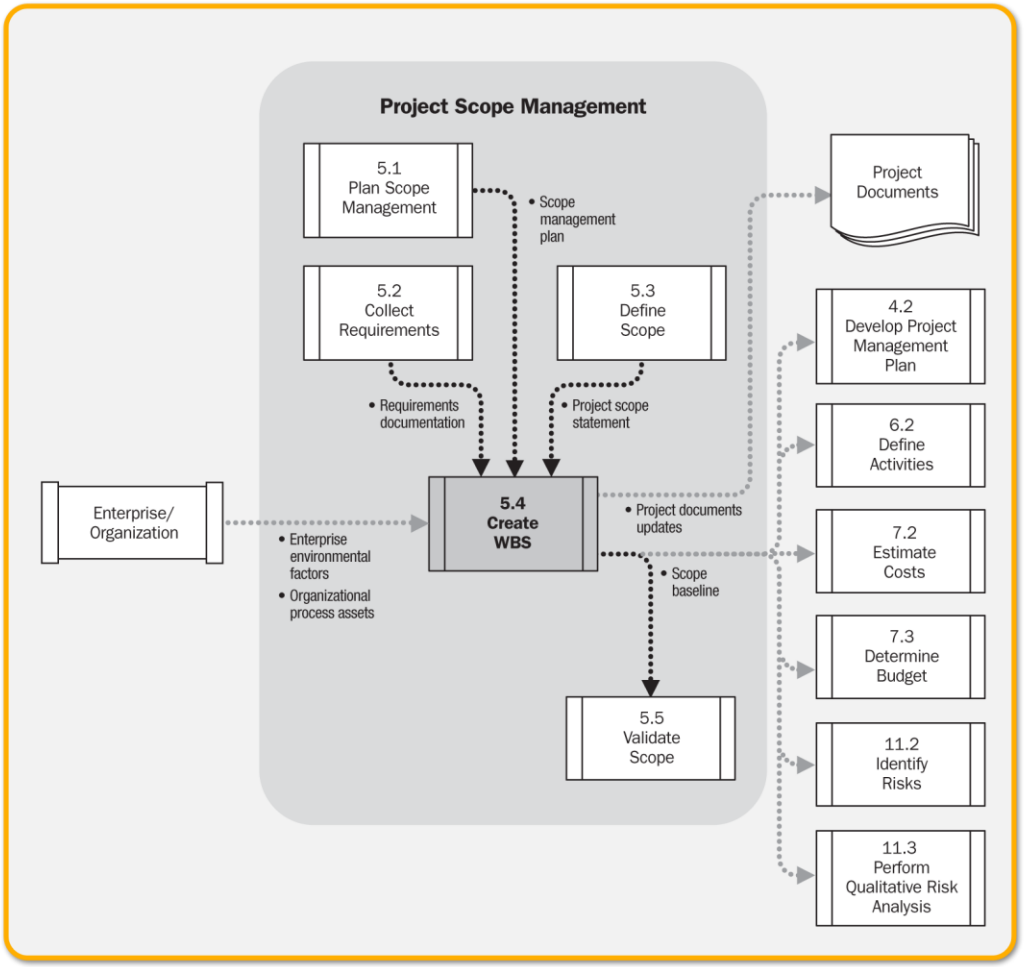


Figure 5-9. Create WBS: Inputs, Tools & Techniques, and Outputs


Project Scope Management
5.1 Plan Scope Management
• Scope management plan
5.2 Collect Requirements
5.3 Define Scope
• Requirements documentation
• Project scope statement
Enterprise/ Organization
• Enterprise environmental factors
• Organizational process assets
5.4 Create WBS
• Project documents updates
• Scope baseline
5.5 Validate Scope
Project Documents
4.2 Develop Project Management Plan
6.2 Define Activities
7.2 Estimate Costs
7.3 Determine Budget
11.2 Identify Risks
11.3 Perform Qualitative Risk Analysis

5.4.1 Create WBS: Inputs

- 5.4.1.1 Scope Management Plan
  - The scope management plan specifies how to create the WBS from the detailed project scope statement and how the WBS will be maintained and approved.

- 5.4.1.2 Project Scope Statement
  - The project scope statement describes the work that will be performed and the work that is excluded. It also lists and describes the specific internal or external restrictions or limitations that may affect the execution of the project.

5.4.1 Create WBS: Inputs

- 5.4.1.3 Requirements Documentation
  - Detailed requirements documentation is essential for understanding what needs to be produced as the result of the project and what needs to be done to deliver the project and its final products.

- 5.4.1.4 Enterprise Environmental Factors (EEFs)
- 5.4.1.5 Organizational Process Assets (OPAs)

5.4.2 Create WBS: Tools and Techniques

- 5.4.2.1 Decomposition
  - 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. The level of detail for work packages will vary with the size and complexity of the project.

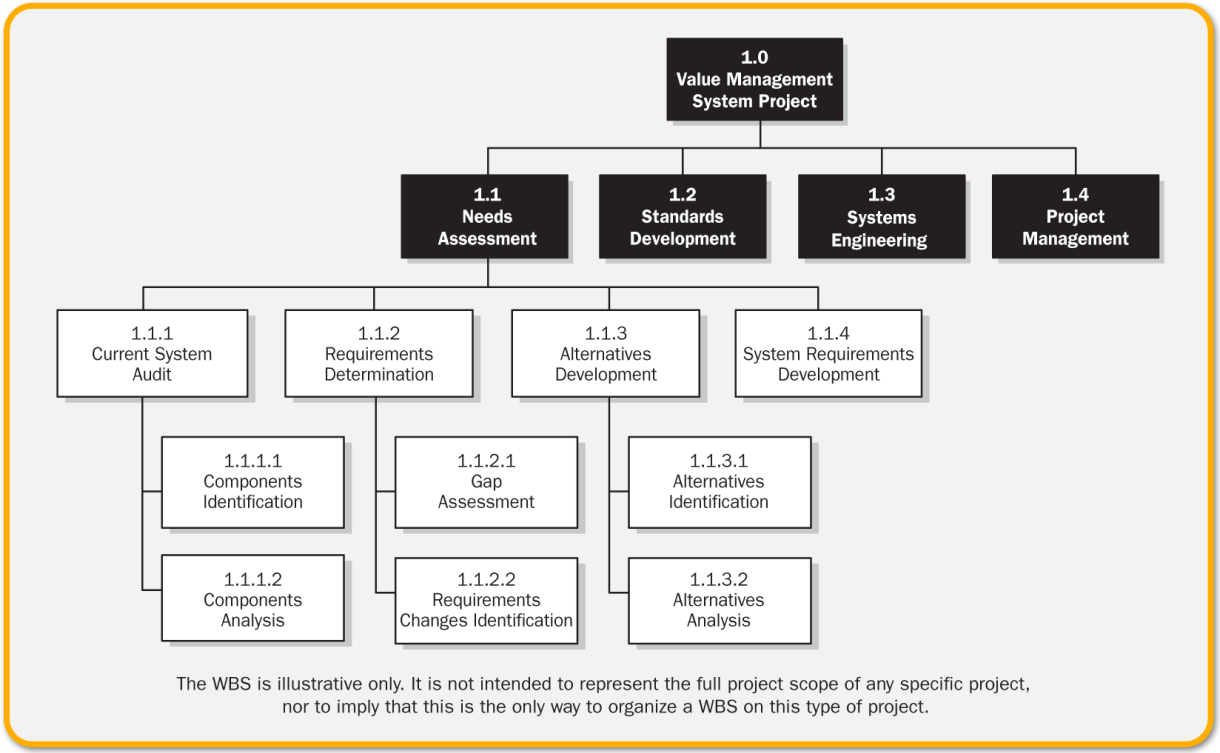


Figure (5.11) Sample WBS Decomposed Down Through Work Packages

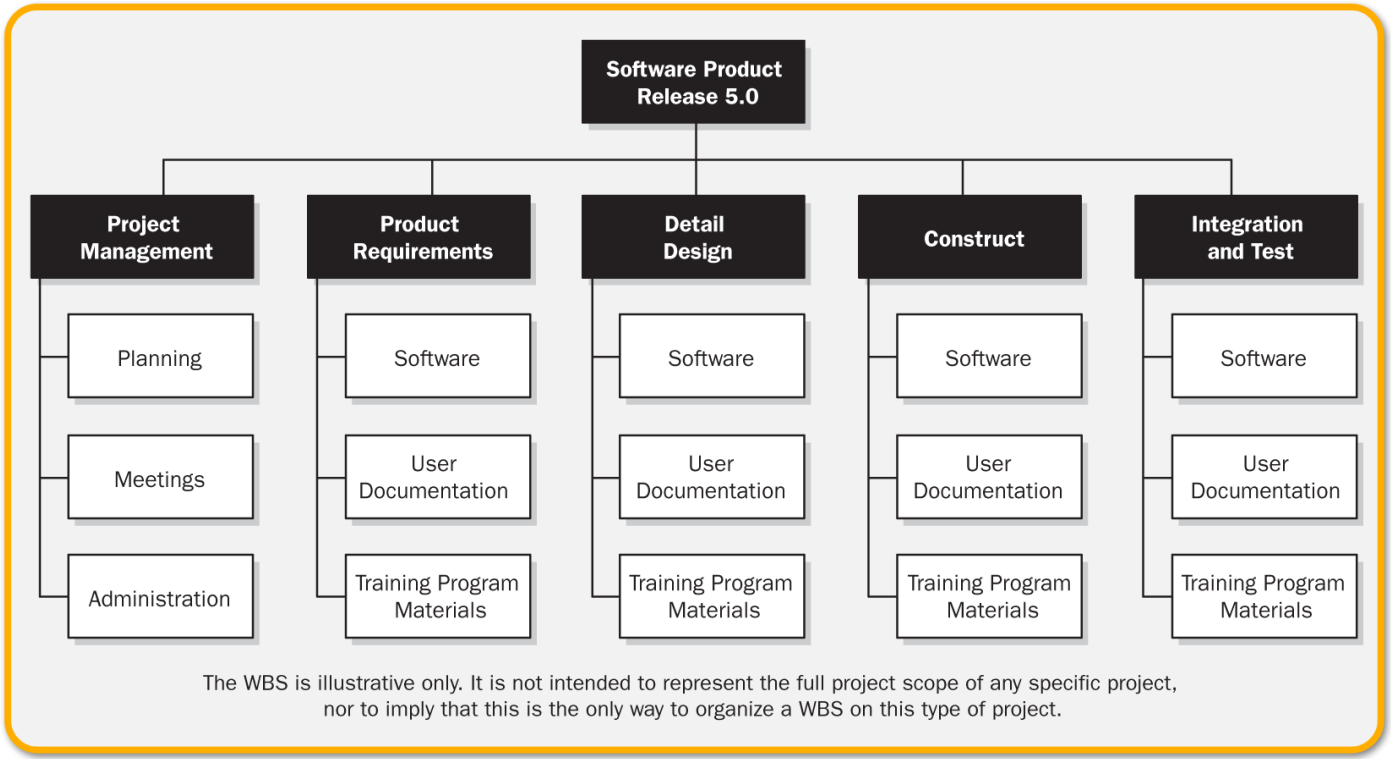


Figure (5.12) Sample WBS Organized by Phase

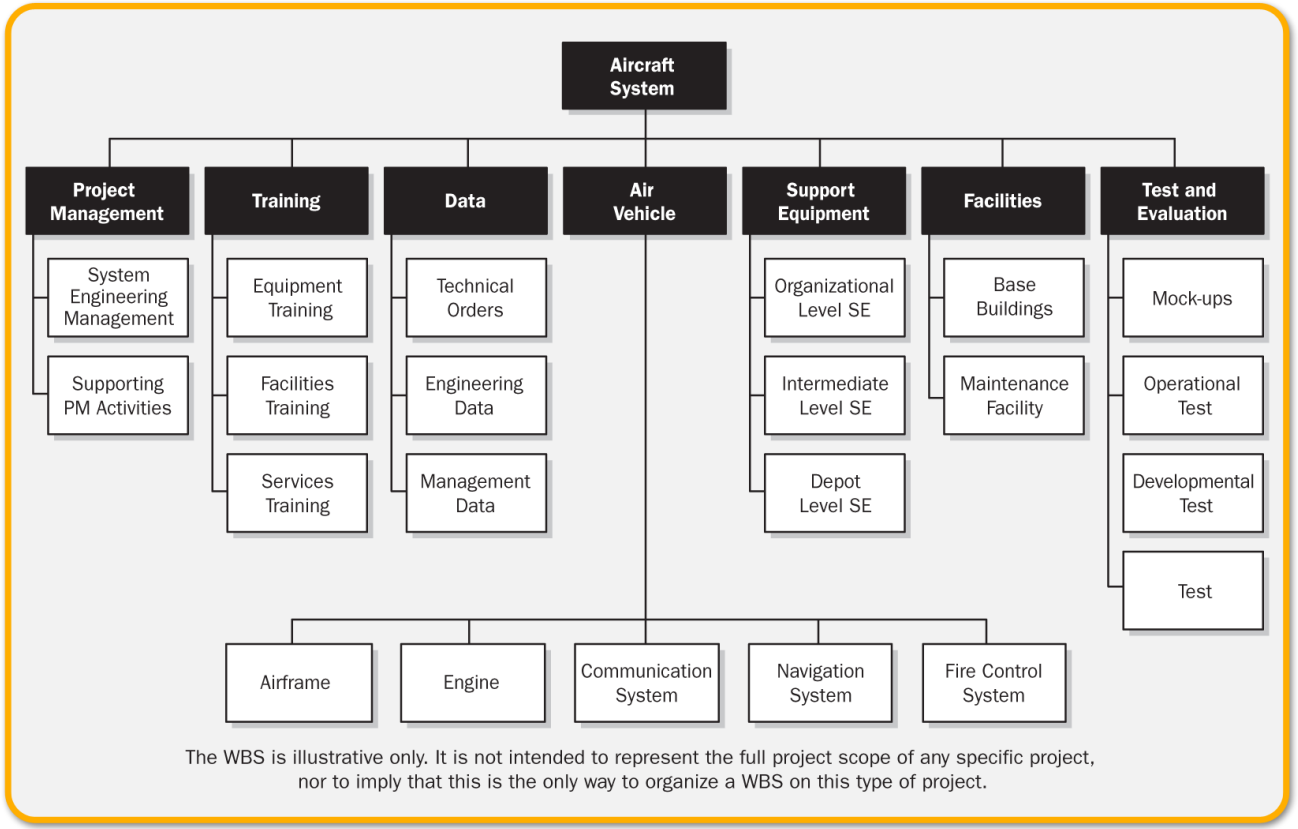


Figure (5.13) Sample WBS with Major Deliverables

5.4.2 Create WBS: Tools and Techniques

- 5.4.2.2 Expert Judgment
  - Expert judgment is often used to analyze the information needed to decompose the project deliverables down into smaller component parts in order to create an effective WBS.
  - The project manager, in collaboration with the project team, then determines the final decomposition of the project scope into the discrete work packages that will be used to effectively manage the work of the project.

5.4.3 Create WBS: Outputs

- 5.4.3.1 Scope Baseline
  - **The approved version** of a scope statement, work breakdown structure (WBS), and its associated WBS dictionary, that can be changed only through formal change control procedures and is used as a basis for comparison.

5.4.3 Create WBS: Outputs

- 5.4.3.1 Scope Baseline
  - Components of the scope baseline include:
    - Project scope statement: The project scope statement includes:
      - The description of the project scope.
      - Major Deliverables.
      - Assumptions
      - Constraints
    - WBS
    - WBS dictionary

5.4.3 Create WBS: Outputs

- 5.4.3.2 Project Documents Updates (PDUs)
  - Project documents that may be updated include, but are not limited to, requirements documentation, which may need to be updated to include approved changes.
  - If approved change requests result from the Create WBS process, then the requirements documentation may need to be updated to include approved changes.

5.5 Validate Scope (PG: M&C)

- The process of **formalizing acceptance** of the completed project deliverables.
  - Notes:
    - The Validate Scope process is primarily concerned with acceptance of the deliverables
    - The Control Quality process is primarily concerned with correctness of the deliverables and meeting the quality requirements specified for the deliverables.
    - Control Quality is generally performed before Validate Scope, although the two processes may be performed in parallel.

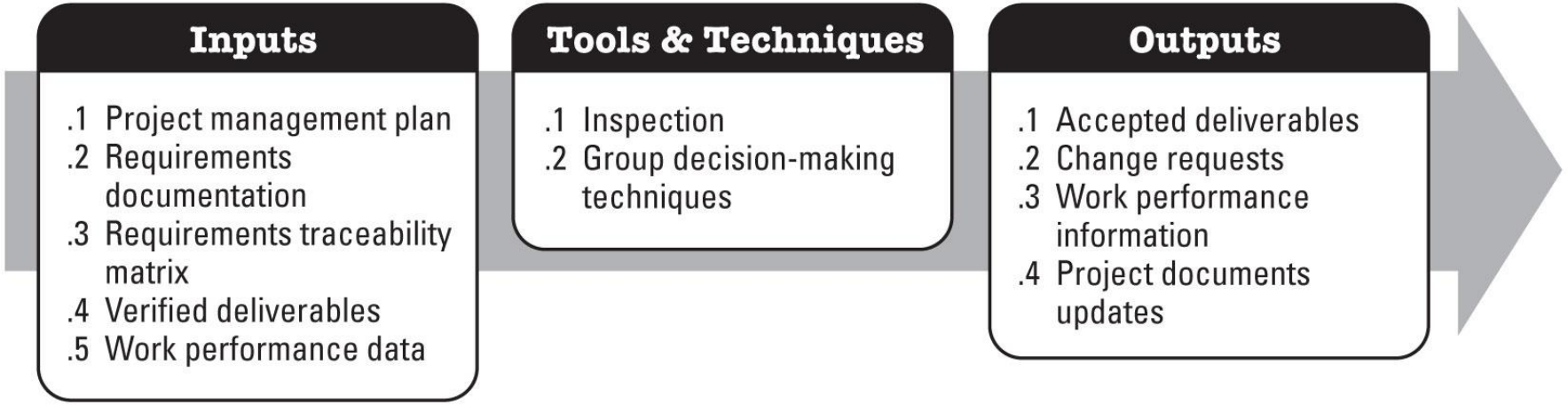


Figure 5-14. Validate Scope: Inputs, Tools & Techniques, and Outputs

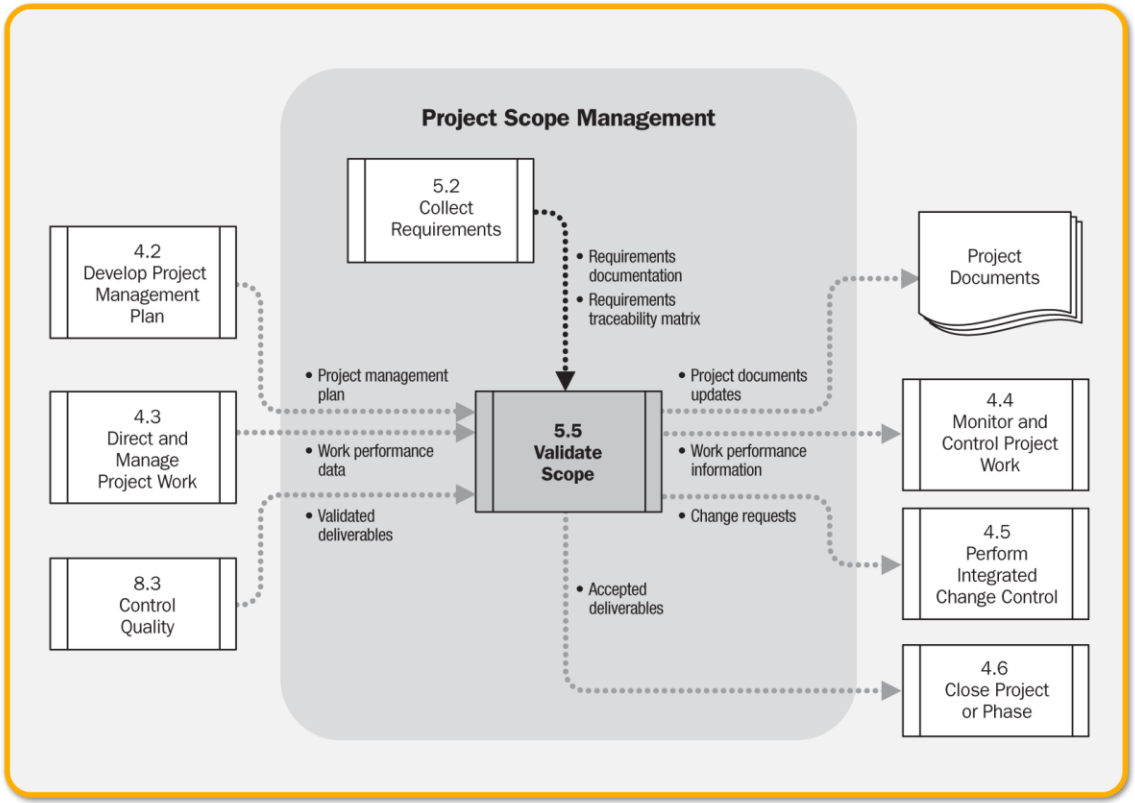


Figure (5.15) Validate Scope Data Flow Diagram

5.5.1 Validate Scope: Inputs

- 5.5.1.1 Project Management Plan (Out: 4.2)
  - Contains the scope management plan & the scope baseline.
- 5.5.1.2 Requirements Documentation (Out: 5.2)
  - Lists all the project, product, and other types of requirements
- 5.5.1.3 Requirements Traceability Matrix (RTM) (Out: 5.2)
  - Links requirements to their origin and tracks them throughout the project life cycle.

5.5.1 Validate Scope: Inputs

- 5.5.1.4 Verified Deliverables (Out: 8.3)
  - Verified deliverables are project deliverables that are completed and checked for correctness through the Control Quality process.

- 5.5.1.5 Work Performance Data (WPD) (Out: 4.3)
  - Work performance data can include the degree of compliance with requirements, number of nonconformities, severity of the nonconformities, or the number of validation cycles performed in a period of time.

5.5.2 Validate Scope: Tools and Techniques

- 5.5.2.1 Inspection
  - Includes activities (measuring, examining & validating) to determine whether work and deliverables meet requirements and product acceptance criteria.
  - Inspections are sometimes called reviews, product reviews, audits & walkthroughs.

- 5.5.2.2 Group Decision-Making Techniques
  - These techniques are used to reach a conclusion when the validation is performed by the project team and other stakeholders.

5.5.3 Validate Scope: Outputs

- 5.5.3.1 Accepted Deliverables
  - Deliverables that meet the acceptance criteria are formally signed off and approved by the customer or sponsor.

- 5.5.3.2 Change Requests
  - The completed deliverables that have NOT been formally accepted are documented, along with the reasons for nonacceptance of those deliverables.
  - Those deliverables may require a change request for defect repair.

5.5.3 Validate Scope: Outputs

- 5.5.3.3 Work Performance Information (WPI)
  - Work performance information includes information about project progress, such as:
    - Which deliverables have started, their progress
    - Which deliverables have finished, or which have been accepted.

- 5.5.3.4 Project Documents Updates (PDUs)
  - Include any documents that define the product or report status on product completion.
  - Verified project documents may require approvals from the customer or sponsor in the form of signatures or signoffs.

5.6 Control Scope (PG: M&C)

- The process of monitoring the status of the project and product scope and managing changes to the scope baseline.
  - **Ensures** all requested changes and recommended corrective or preventive actions are processed through the Perform Integrated Change Control process (see Section 4.5).
  - Used to manage the actual changes when they occur and is integrated with the other control processes.
  - The uncontrolled expansion to product or project scope without adjustments to time, cost and resources is referred to as **scope creep**.

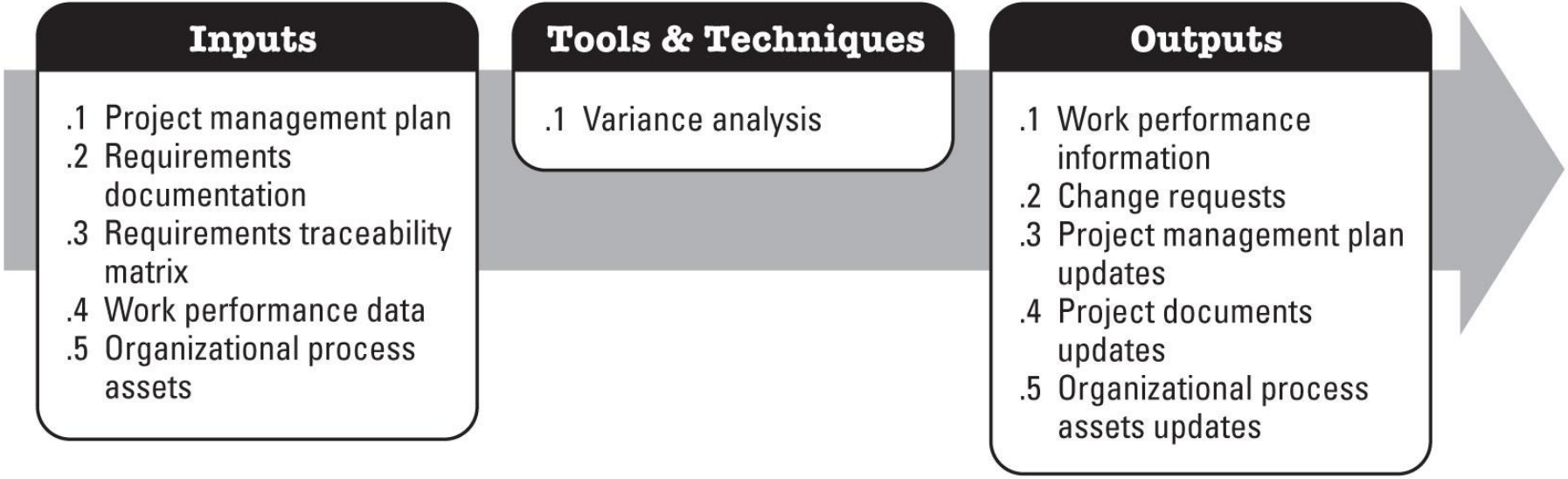


Figure 5-16. Control Scope: Inputs, Tools & Techniques, and Outputs

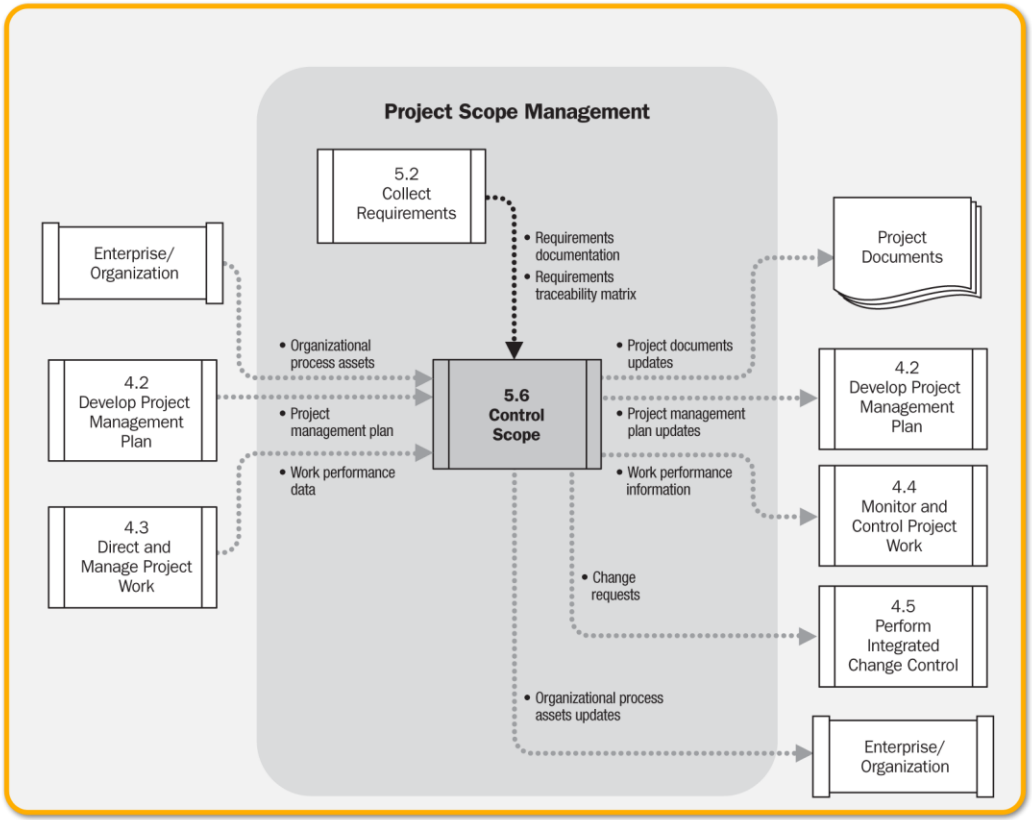


Figure (5.17) Control Scope Data Flow Diagram

5.6.1 Control Scope: Inputs

- 5.6.1.1 Project Management Plan (Out: 4.2)
  - The following information from the project management plan is used to control scope:
    1. Scope baseline
       - Scope management plan: Sections from the scope management plan describe how the project scope will be monitored and controlled.
    2. Change management plan:
       - The change management plan defines the process for managing change on the project.

5.6.1 Control Scope: Inputs

- 5.6.1.1 Project Management Plan (Out: 4.2)
  - The following information from the project management plan is used to control scope:

3. Configuration management plan:
   - The configuration management plan defines those items that are configurable, those items that require formal change control, and the process for controlling changes to such items.

4. Requirements management plan:
   - This plan is a component of the project management plan and describes how the project requirements will be analyzed, documented, and managed.

5.6.1 Control Scope: Inputs

- 5.6.1.2 Requirements Documentation (Out: 5.2)
  - Requirements should be unambiguous (measurable and testable), traceable, complete, consistent, and acceptable to key stakeholders.
  - Well-documented requirements make it easier to detect any deviation in the scope agreed for the project or product.

- 5.6.1.3 Requirements Traceability Matrix (RTM) (Out: 5.2)
  - The requirements traceability matrix helps to detect the impact of any change or deviation from the scope baseline on the project objectives.

5.6.1 Control Scope: Inputs

- 5.6.1.4 Work Performance Data (WPD) (Out: 4.3)
  - Work performance data can include the number of change requests received, the number of requests accepted or the number of deliverables completed, etc.

- 5.6.1.5 Organizational Process Assets (OPAs) (Out: 2.1.4)
  - The organizational process assets that can influence the Control Scope process include, but are not limited to:
    - Existing formal and informal scope, control-related policies, procedures, guidelines.
    - Monitoring and reporting methods and templates to be used.

5.6.2 Control Scope: Tools and Techniques

- 5.6.2.1 Variance Analysis
  - A technique for determining the **cause** and **degree** of difference between the **baseline** and **actual performance**.

5.6.3 Control Scope: Outputs

- 5.6.3.1 Work Performance Information (WPI)
  - Includes information on how the project scope is performing compared to the scope baseline.
  - It can include the categories of the changes received, the identified scope variances and their causes, how they impact schedule or cost, and the forecast of the future scope performance.

5.6.3 Control Scope: Outputs

- 5.6.3.2 Change Requests
  - Analysis of scope performance can result in a **change request** to the scope baseline or other components of the project management plan.
  - Change requests can include preventive or corrective actions, defect repairs, or enhancement requests.
  - Change requests are processed for review and disposition according to the Perform Integrated Change Control process (Section 4.5).

5.6.3 Control Scope: Outputs

- 5.6.3.3 Project Management Plan Updates
  - Project management plan updates may include:
    - Scope Baseline Updates: If the approved change requests have an effect on the project scope, then the scope statement, the WBS, and the WBS dictionary are revised and reissued to reflect the approved changes through Perform Integrated Change Control process.
    - Other Baseline Updates: If the approved change requests have an effect on the project besides the project scope, then the corresponding cost baseline and schedule baselines are revised and reissued to reflect the approved changes.

5.6.3 Control Scope: Outputs

- 5.6.3.4 Project Documents Updates (PDUs)
  - Project documents that may be updated include:
    - Requirements documentation.
    - Requirements traceability matrix.

- 5.6.3.5 Organizational Process Assets Updates
  - Organizational process assets that may be updated include:
    - Causes of variances.
    - Corrective action chosen and the reasons.
    - Other types of lessons learned from project scope control.

Questions

- **A work breakdown structure numbering system allows the project team to:**

A. Systematically estimate costs of work breakdown structure elements.

B. Provide project justification.

C. Identify the level at which individual elements are found.

D. Use it in project management software.

Answer C

Explanation: The numbering system allow team members to quickly identify the level in the work breakdown structure where the specific element is found. It also helps to locate the element in the WBS dictionary.

- **The work breakdown structure can BEST be thought of as an effective aid for _____ communications.**

A. Team

B. Project manager

C. Customer

D. Stakeholder

Answer D

Explanation: The term “stakeholder” encompasses all the other choices. In this case, it is the best answer since the WBS can be used as a communications tool for all stakeholders to “see” what is included in the project.

- **Which of the following is a KEY output of the Validate Scope process?**

A. A more complete scope management plan

B. Customer acceptance of project deliverables

C. Improved schedule estimates

D. An improved project management information system

Answer B

Explanation: The output of the Validate Scope process is customer acceptance of project deliverables.

The other choices all happen during project planning, well before the time the Validate Scope process takes place.

- **During project executing, a team member comes to the project manager because he is not sure what work he needs to accomplish on the project. Which of the following documents contains detailed descriptions of work packages?**

A. WBS dictionary

B. Activity list

C. Project scope statement

D. Scope management plan

Answer A

Explanation Activity lists may identify the work package they relate to, 1›ut they do not contain detailed descriptions of the work packages.

- **During which part of the project management process is the project scope statement created?**

A. Initiating

B. Planning

C. Executing

D. Monitoring and controlling

Answer B

Explanation: The project scope statement is an output of the Define Scope process, which occurs during project planning.

- **The program was planned years ago, before there was a massive introduction of new technology. While planning the next project in this program, the project manager has expanded the scope Management plans because as a project becomes more complex, the level of uncertainty in the scope:**

A. Remains the same.

B. Decreases

C. Decreases than increases.

D. Increases.

Answer D

Explanation: not all questions will be difficult. The level of uncertainty in scope increases based on the scale of effort required to identify all the scope.

For larger projects, it is more difficult to “catch” everthing

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