

Project Scope Management

- **Introduction** (project scope management)
- Scope refers to all the work involved in creating the products of the project and the processes used to create them. Project scope management includes the processes involved in defining and controlling what is or is not included in the project. The project team and stakeholders must have the same understanding of what products will be produced as a result of a project and what processes will be used in producing them.
- 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 processes include the following:
 1. Plan Scope Management: The process of creating a scope management plan that documents how the project 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.
- **Product vs Project Scope**
- 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.
- **Product Scope and Project Scope**
- Scope: The sum of the products, services, and results to be provided as a project.
- Product Scope: The features and functions that characterize a product service, or result. Completion is measured against the product requirements.
- Project Scope: The work that must be done in order to deliver a product, service, or result with the specified features and functions. Completion measured against the project plan.
- **Plan Scope Management**
- Plan Scope Management is the process of creating a scope management plan that documents how the project scope will be defined, validated, and controlled.
- The key benefit of this process is that it provides guidance and direction on how scope will be managed throughout the project.

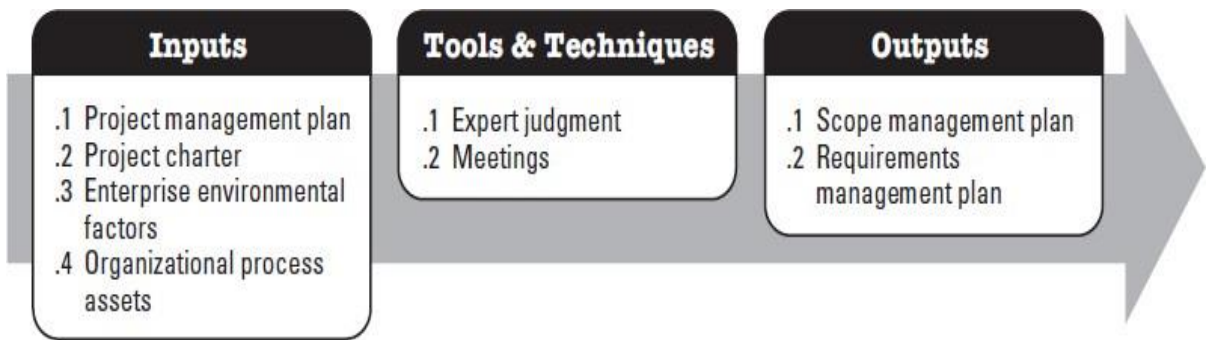
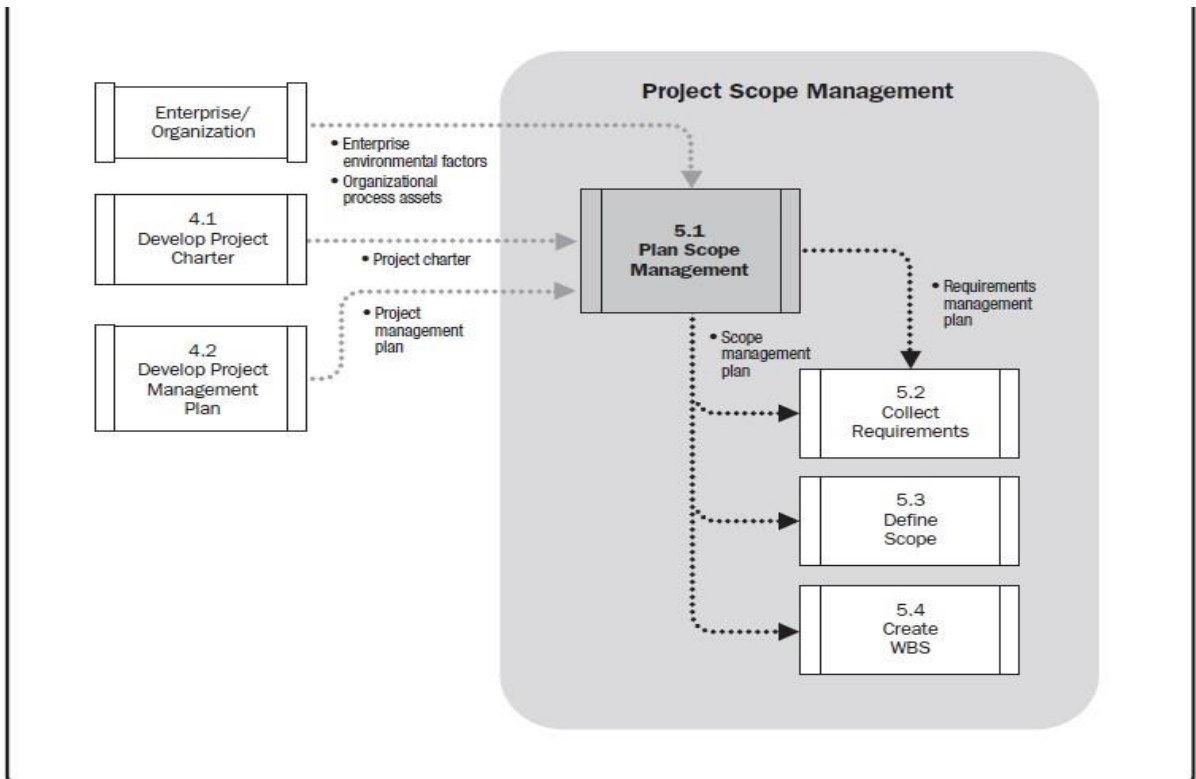


Figure 5-2. Plan Scope Management: Inputs, Tools & Techniques, and Outputs



• **Plan Scope Management (Inputs)**

- **Project Management Plan:** 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.
- **Project Charter:** 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.
- **Enterprise Environmental Factors:** The enterprise environmental factors that can influence the Plan Scope Management process include:
 - Organization's culture,
 - Infrastructure,
 - Personnel administration,
 - Marketplace conditions
- **Organizational Process Assets:** The organizational process assets that can influence the Plan Scope Management process include: <2 points>
 - Policies and procedures, Historical information and lessons learned knowledge base

- **Plan Scope Management (Tools and Techniques)**

- 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.
- Meetings: Project teams may attend project meetings to develop the scope management plan.

- **Plan Scope Management (Outputs)**

- Scope Management Plan: The components of a scope management plan includes:
 - ✓ Process for preparing a detailed project scope statement;
 - ✓ Process that enables the creation of the WBS from the detailed project scope statement;
 - ✓ Process that establishes how the WBS will be maintained and approved;
 - ✓ Process that specifies how formal acceptance of the completed project deliverables will be obtained;
 - ✓ Process to control how requests for changes to the detailed project scope statement will be processed.
- Requirements Management Plan: Components:
 - ✓ How requirements activities will be planned, tracked, and reported;
 - ✓ Configuration management activities such as: how changes to the product will be initiated, how impacts will be analyzed, how they will be traced, tracked, and reported, as well as the authorization levels required to approve these changes;
 - ✓ Requirements prioritization process;
 - ✓ Product metrics that will be used and the rationale for using them; etc.

- **Understanding Requirement Specifications**

1. Functional Requirements (day to day requirements of end users or stakeholders)
2. Non functional Requirements (Performance, Usability, Reliability, Security, Financial, Legal, Operational, Specialization)
3. Capturing Requirements (Interviews, Questionnaires, In- depth Observations, Domain Expert Suggestions)
4. Documenting Requirements (SMART rule to MUSCOW rule) MUSCOW- (must have, should have, could have, would have). Then System Requirement Specifications (SRS) should be prepared (will contain business cases and user cases).

- **Project Scope Planning**

- Scope Statement: Document Used to develop and confirm a common understanding of scope of project
 - ✓ Project Justification
 - ✓ Brief description of project's products
 - ✓ A summary of all project deliverables
 - ✓ A statement of what determines project success (Key Success Factors)

- cont...
- Components of ScopeStatement:
 - ✓ Project Justification (The need for Project, Cost Benefit Analysis, CashFlow Analysis)
 - ✓ Project Product (Product Specification)
 - ✓ Project Deliverables (Major Outcomes of Project)
 - ✓ Project Objectives (Must be SMART)
- **Collect Requirements** (MT)
 - It is the process of determining, documenting, and managing stakeholder needs and requirements to meet project objectives.
Provides the basis for defining and managing the project scope including product scope.
 - Requirements: Requirements include the quantified and documented needs and expectations of the sponsor, customer, and other stakeholders. Requirements can be grouped into classifications: Business requirements, Stakeholder requirements, Solution requirements, Transition requirements, Project requirements, Quality requirement, etc.

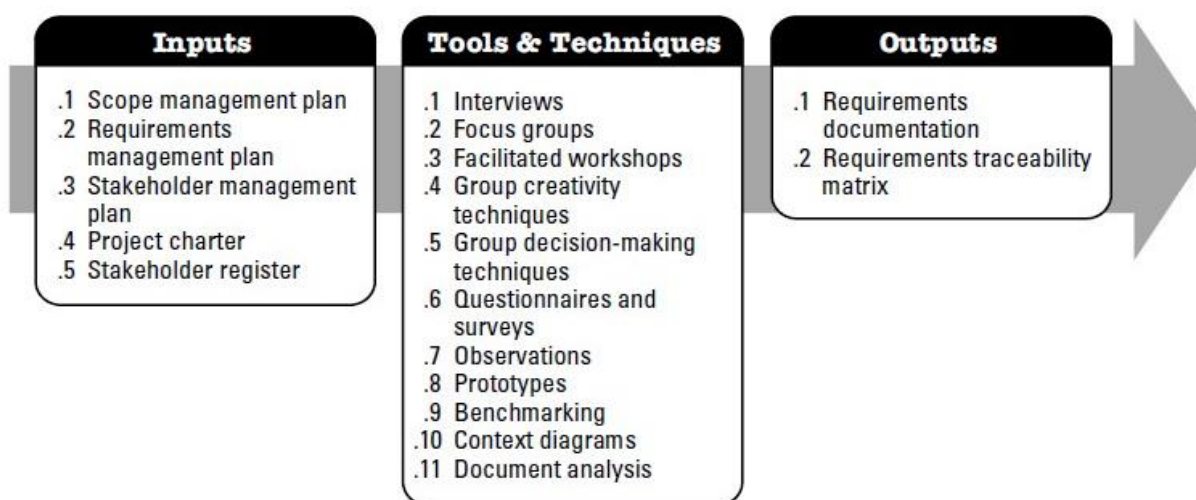


Figure 5-4. Collect Requirements: Inputs, Tools & Techniques, and Outputs

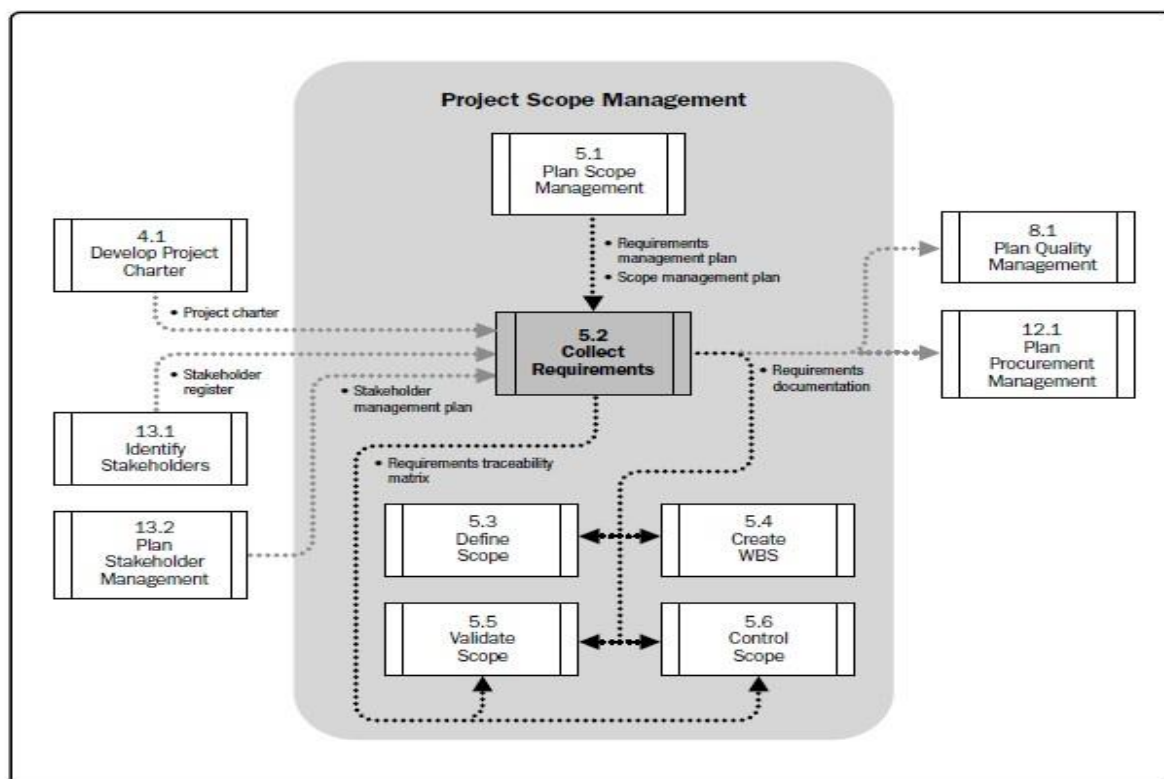


Figure 5-5. Collect Requirements Data Flow Diagram

- **Define Scope**
- Scope Definition: Subdividing major project components into smaller ones to improve
 - ✓ accuracy of cost, time and resource estimates
 - ✓ Define a baseline for performance measurement and control
 - ✓ Facilitate clear responsibility assignments



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

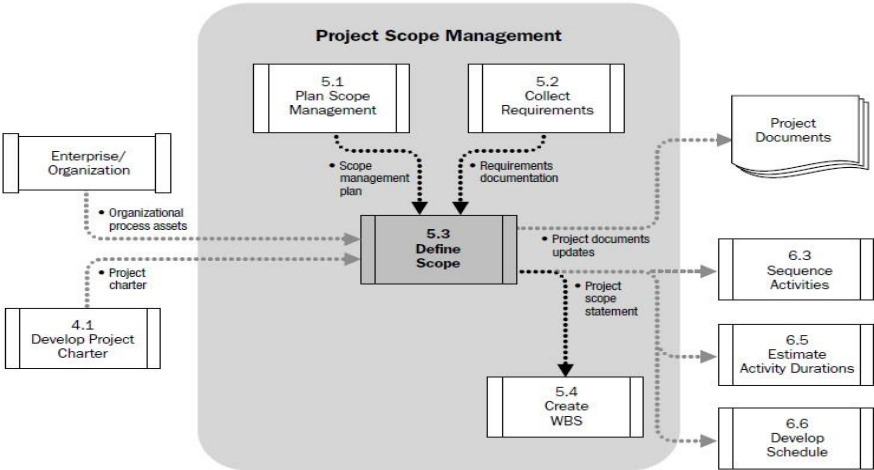


Table 5-1. Elements of the Project Charter and Project Scope Statement

Project Charter	Project Scope Statement
Project purpose or justification	Project scope description (progressively elaborated)
Measurable project objectives and related success criteria	Acceptance criteria
High-level requirements	Project deliverables
High-level project description	Project exclusions
High-level risks	Project constraints
Summary milestone schedule	Project assumptions
Summary budget	
Stakeholder list	
Project approval requirements (what constitutes success, who decides it, who signs off)	
Assigned project manager, responsibility, and authority level	
Name and authority of the sponsor or other person(s) authorizing the project charter	

- **Creating WBS**
- Create WBS is the process of subdividing project deliverables and project work into smaller, more manageable components
- provides a structured vision of what has to be delivered
- WBS is a foundation document that provides the basis for planning and managing project schedules, costs, resources, and changes
- Decomposition is subdividing project deliverables into smaller pieces

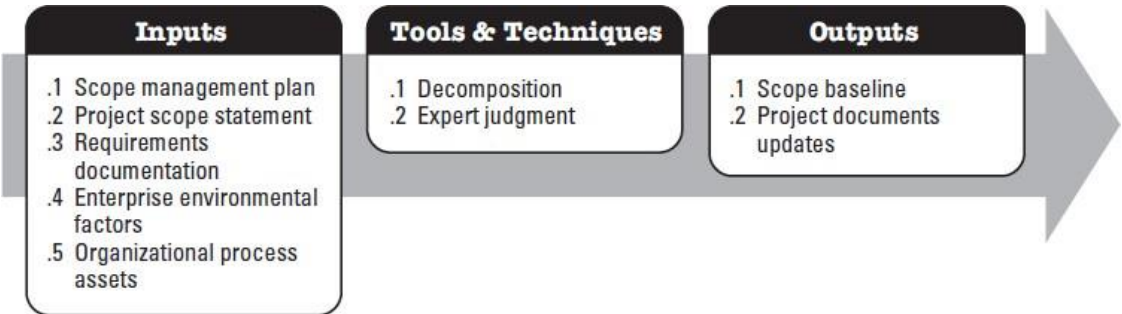


Figure 5-9. Create WBS: Inputs, Tools & Techniques, and Outputs

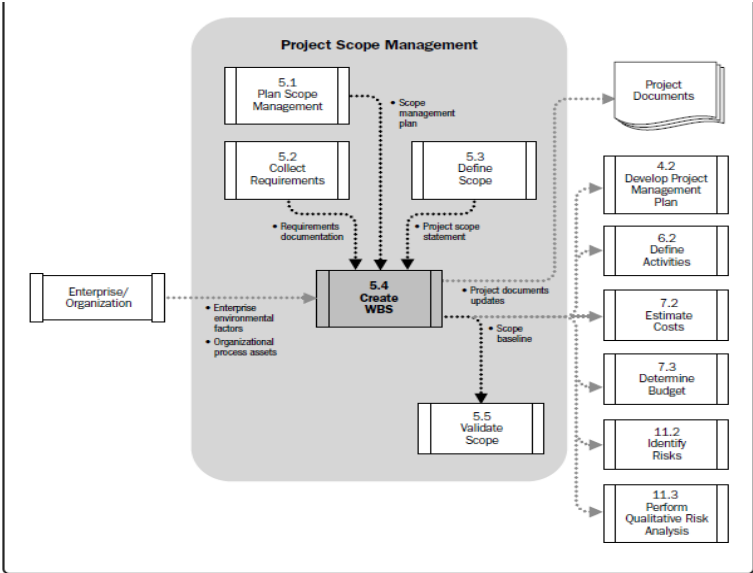
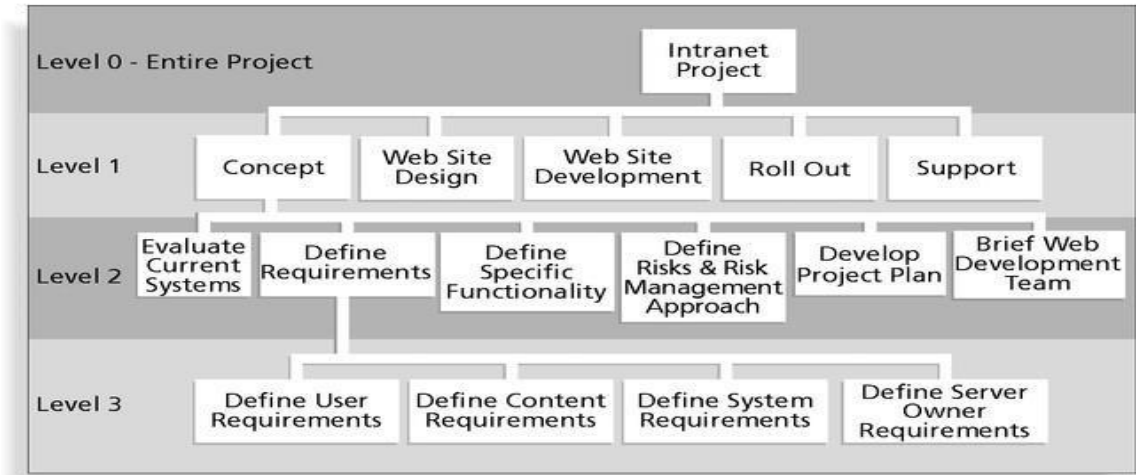


Figure 5-10. Create WBS Data Flow Diagram



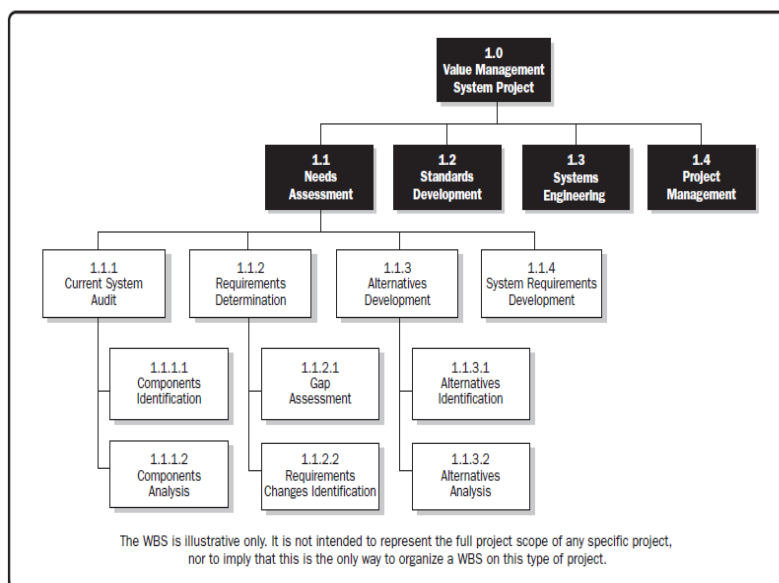


Figure 5-11. Sample WBS Decomposed Down Through Work Packages

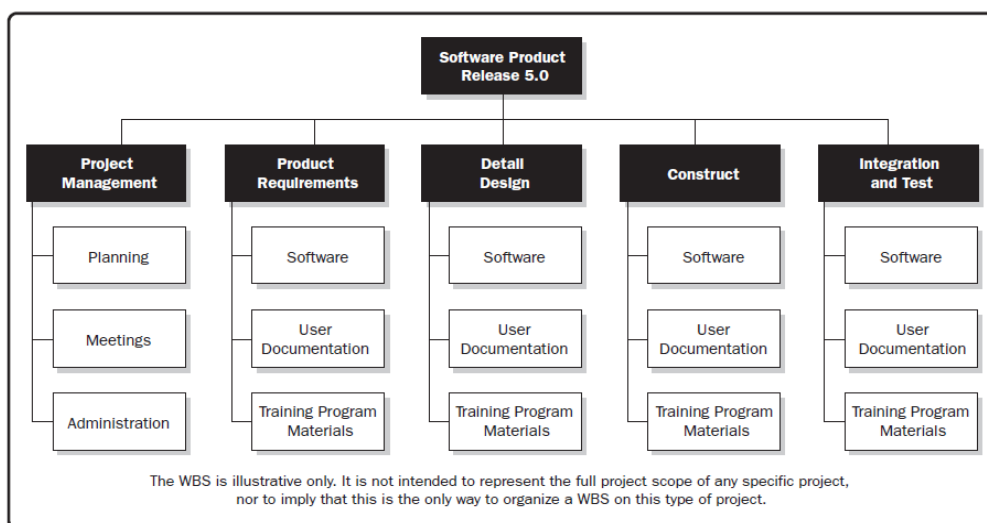


Figure 5-12. Sample WBS Organized by Phase

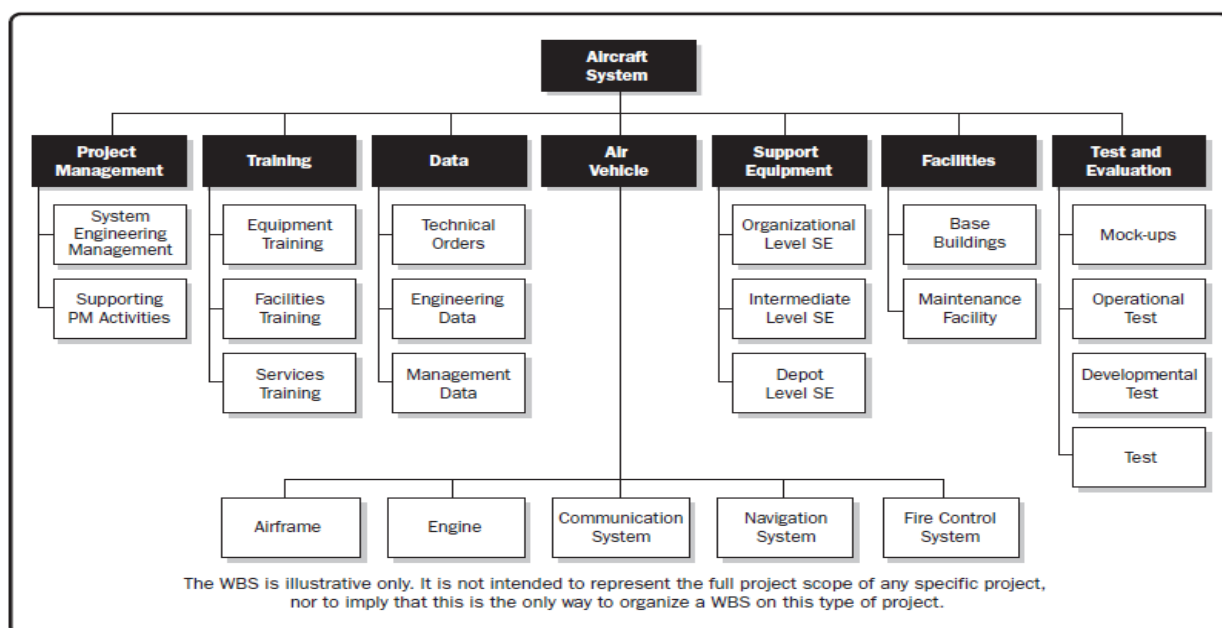


Figure 5-13. Sample WBS with Major Deliverables

- **Approaches to Developing WBSs**
- Using guidelines: some organizations provide guidelines for preparing WBSs
- The **analogy approach**: review WBSs of similar projects and tailor to your project
- The **top-down approach**: start with the largest items of the project and break them down
- The **bottom-up approach**: start with the specific tasks and roll them up
- Mind-mapping approach: **mind mapping** is a technique that uses branches radiating out from a core idea to structure thoughts and ideas
- **Responsibility Assignment Matrix (RACI Chart)**

RACI Chart	Person				
Activity	Person 1	Person 2	Person 3	Person 4	Person 5
Define	A	R	I	I,C	I
Design	I	A	R	C	C
Develop	I	A	R	C	C
Test	A	I,R	I	R	I
Implementation	I	R	A	C	I

- **Finalizing WBS with Cost Benefit Analysis**

	WBS with Cost Benefit Analysis			
Task	Duration	Working Team	Benefit	Cost
Work Package 1	T1	P1	10M	5M
Work Package 2	T2	P2	20M	10M
Work Package 3	T3	P1	30M	20M
Total	T1,T2,T3	P1,P2	60M	35M

- **Scope Validation**

- Validate Scope /Scope Verification is the process of formalizing acceptance of the completed project deliverables. It includes:
 - ✓ Obtaining formal acceptance of the project scope by the stakeholders (sponsor, client, customer, etc.).
 - ✓ Reviewing deliverables and work results to ensure that all were completed correctly and satisfactorily.
 - ✓ Determining completion, especially if the project is terminated early. The scope verification process should establish and document the level and extent of completion.

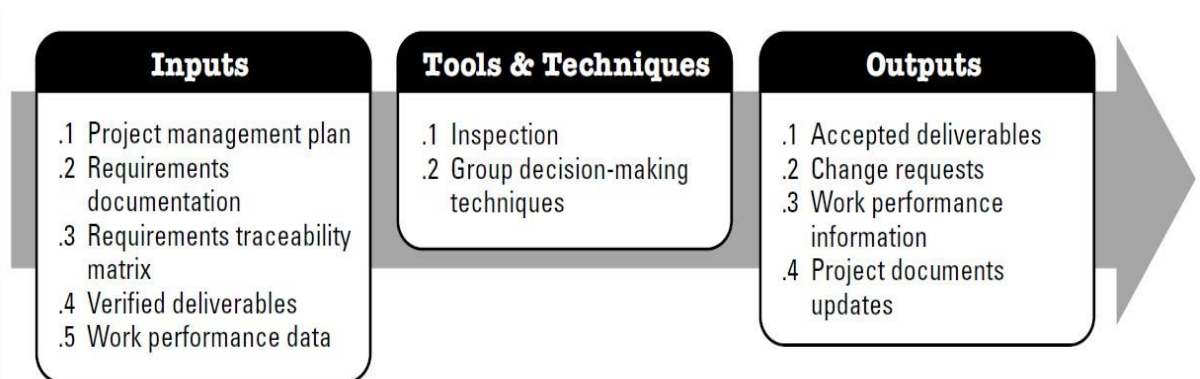


Figure 5-14. Validate Scope: Inputs, Tools & Techniques, and Outputs

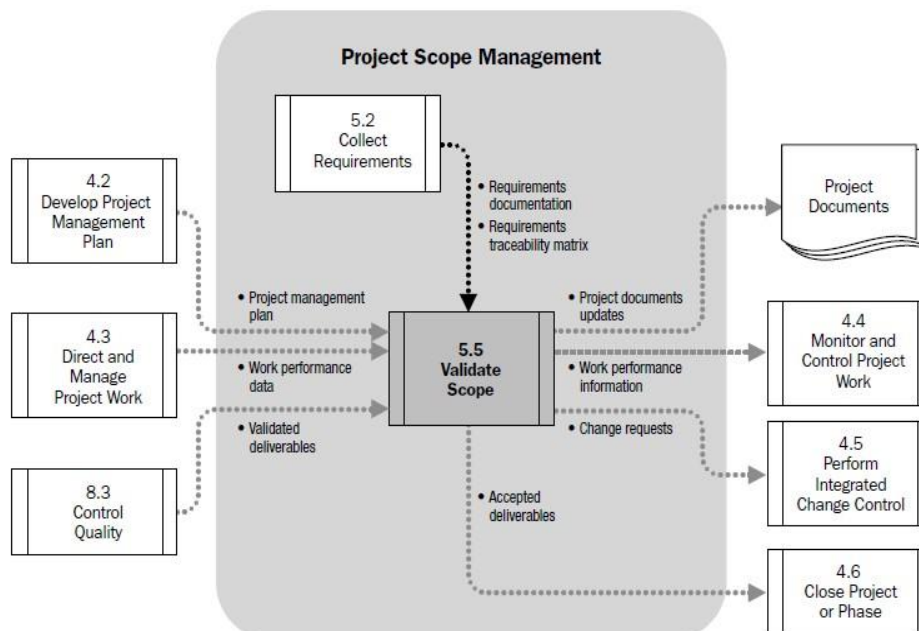


Figure 5-15. Validate Scope Data Flow Diagram

• Control Scope

- Control Scope is the process of monitoring the status of the project and product scope and managing changes to the scope baseline. It allows the scope baseline to be maintained throughout the project.
- Project Scope Control is concerned with influencing the factors that create project scope changes and controlling the impact of those changes.
- Change is inevitable, thereby must have some type of change control process.
- Scope Control assures that all requested changes are processed through the Integrated Change Control process.
- Scope Control is proactive, rather than reactive.
- Uncontrolled changes are often referred to as **SCOPE CREEP** which incrementally may surprise the project team with budget, schedule, resource impacts and it must be managed by formal Change Control Process

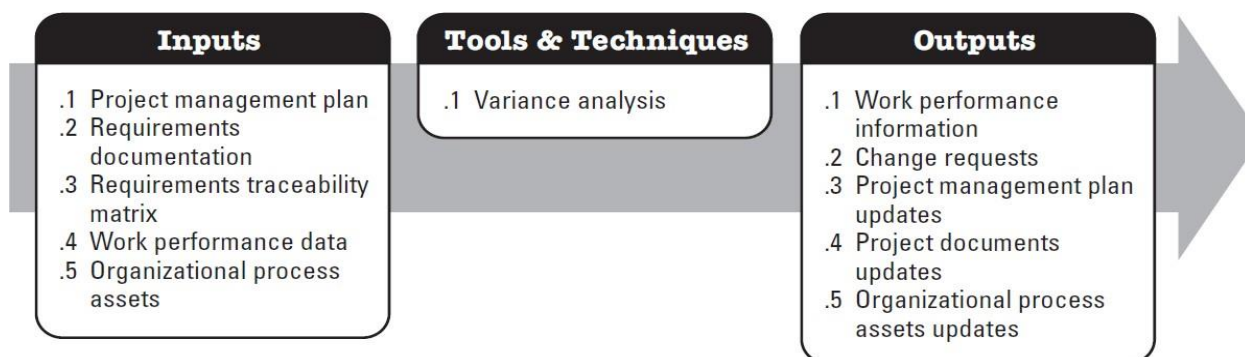


Figure 5-16. Control Scope: Inputs, Tools & Techniques, and Outputs

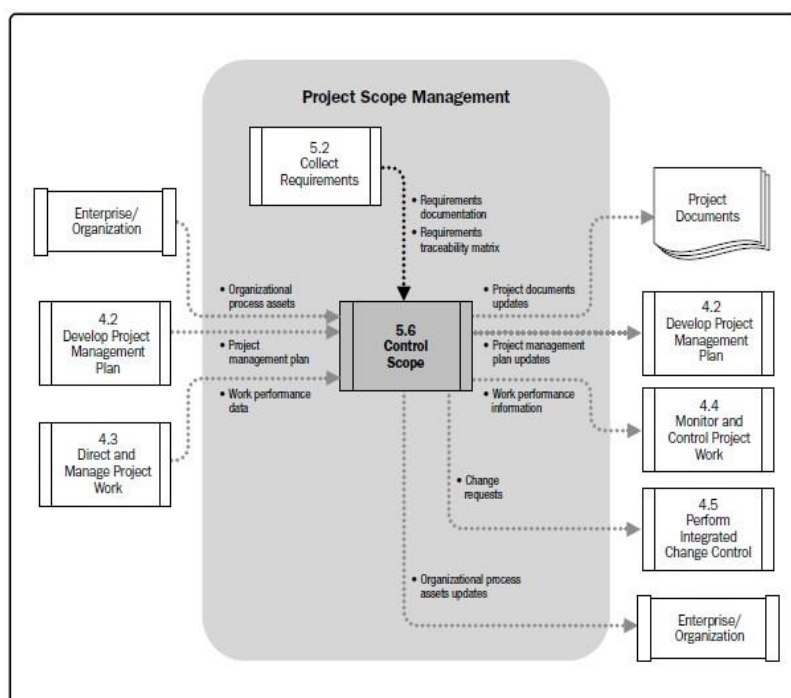


Figure 5-17. Control Scope Data Flow Diagram