DEPARTMENT OF COMPUTER SCIENCE

# *PROJECT*
# SCOPE MANAGEMENT

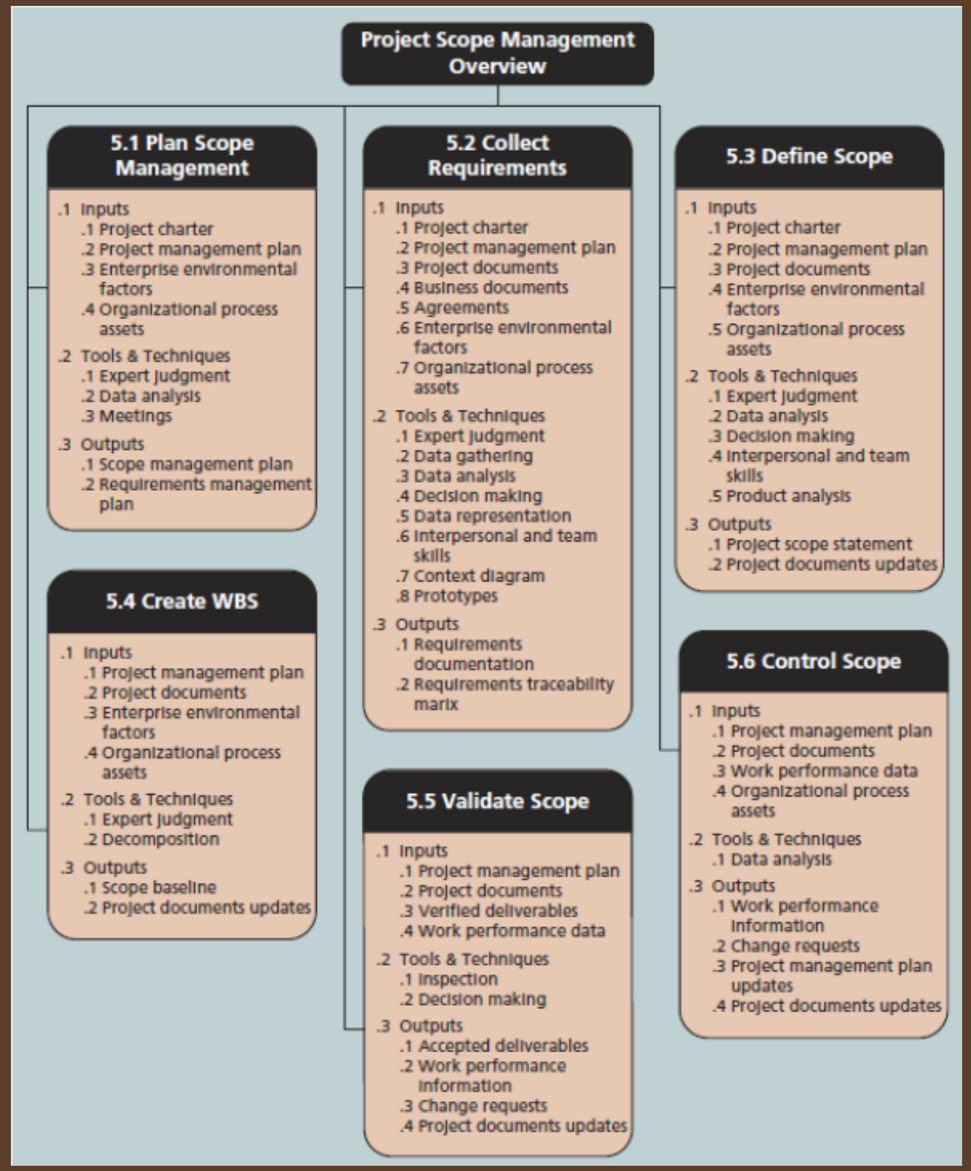
INTRODUCTION TO PROJECT MANAGEMENT

# SCOPE

- refers to all the work involved in creating the products of the project and the processes used to create them
- product scope - features and functions that characterize a product, service, or result
- project scope - work performed to deliver a product, service, or result

## DELIVERABLES

- a product created as part of a project

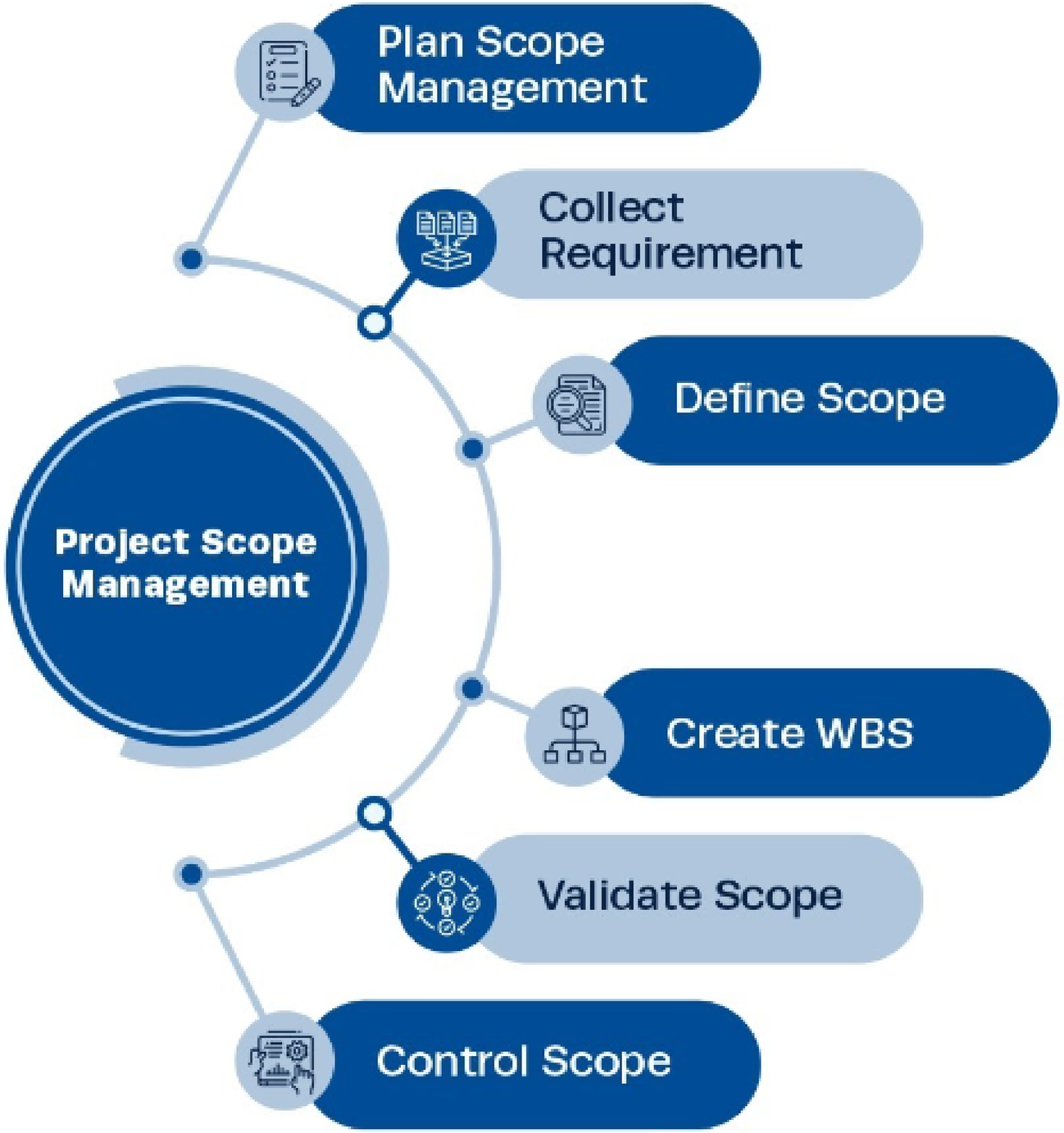



# SCOPE MANAGEMENT

- includes the processes involved in defining and controlling what work is or is not included in a project

# SCOPE MANAGEMENT

*Main Processes*



# SCOPE MANAGEMENT

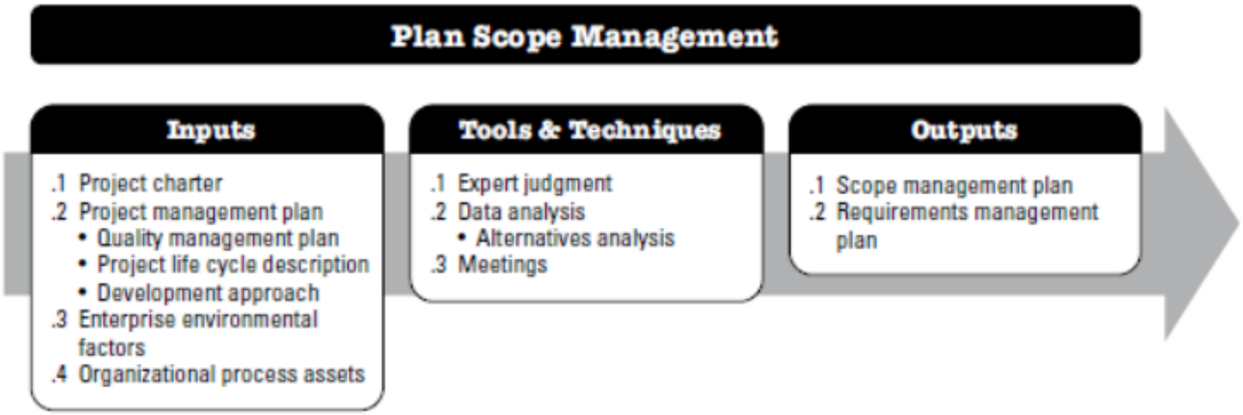

- Plan Scope Management
- Collect Requirements
- Define Scope
- Create WBS

- Validate Scope
- Control Scope

Initiation | Planning | Execution | Monitoring & Controlling | Closing

# 1. PLANNING SCOPE MANAGEMENT

*Planning how the scope will be managed throughout the life of the project*



Initiation | Planning | Execution | Monitoring & Controlling | Closing

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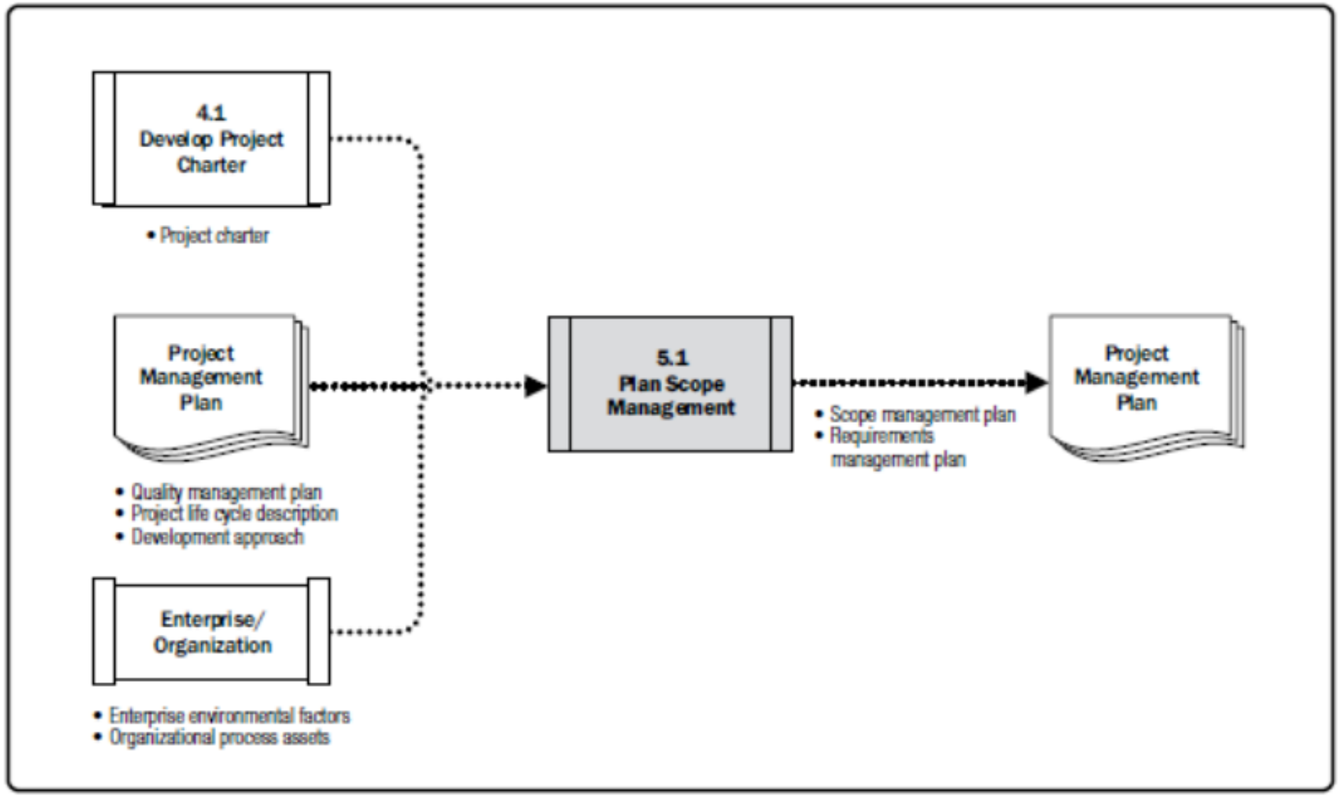


# SCOPE MANAGEMENT PLAN

- Templates or guidelines to follow in preparing a detailed project scope statement
- Provide suggestions, samples, and resources for creating a WBS
- Guidelines for maintaining the WBS and getting approval for it
- Process for obtaining formal acceptance of completed deliverables
- Guidelines for submitting, evaluating, and approving changes to scope. Specify how to handle change requests for the project.

## REQUIREMENTS

- a condition or capability needed by a user to solve a problem or achieve an objective

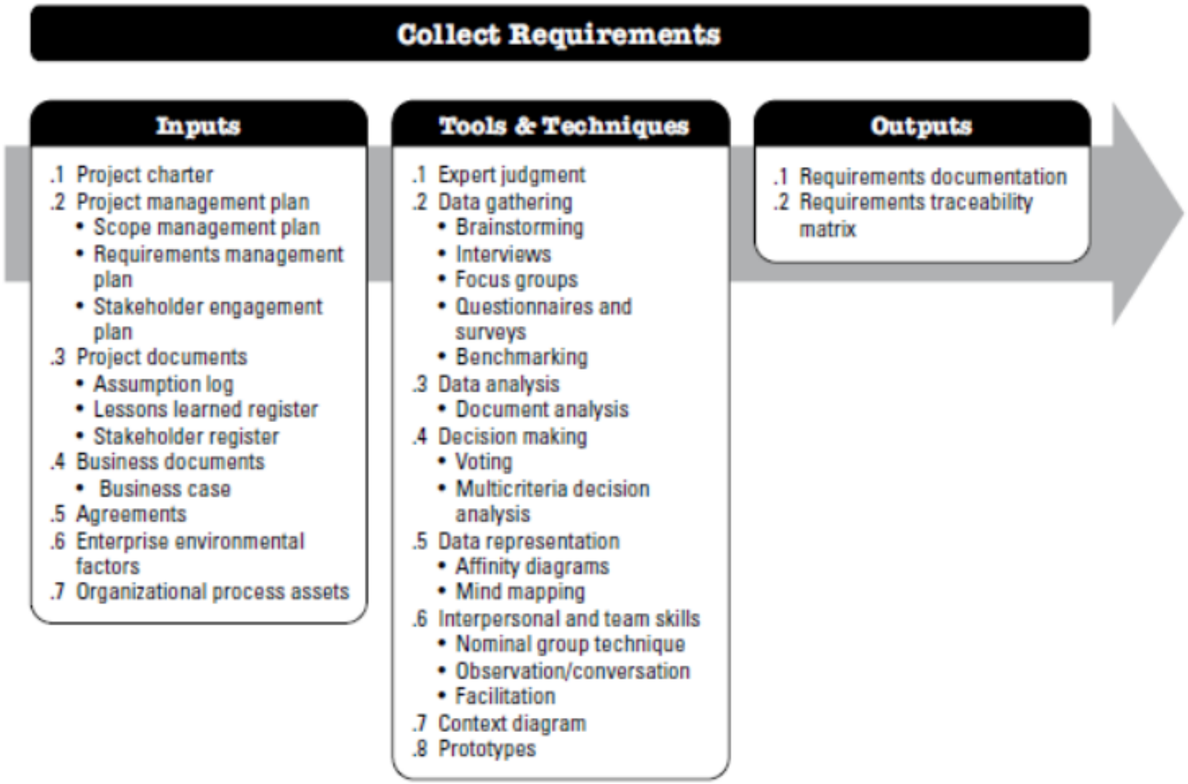
## REQUIREMENTS MANAGEMENT PLAN

- How to plan, track, and report requirements activities
- How to perform configuration management activities
- How to prioritize requirements
- How to use product metrics
- How to trace and capture attributes of requirements

Initiation | Planning | Execution | Monitoring & Controlling | Closing

# 2. COLLECTING REQUIREMENTS

*Decide how to collect and manage requirements*



Initiation | Planning | Execution | Monitoring & Controlling | Closing

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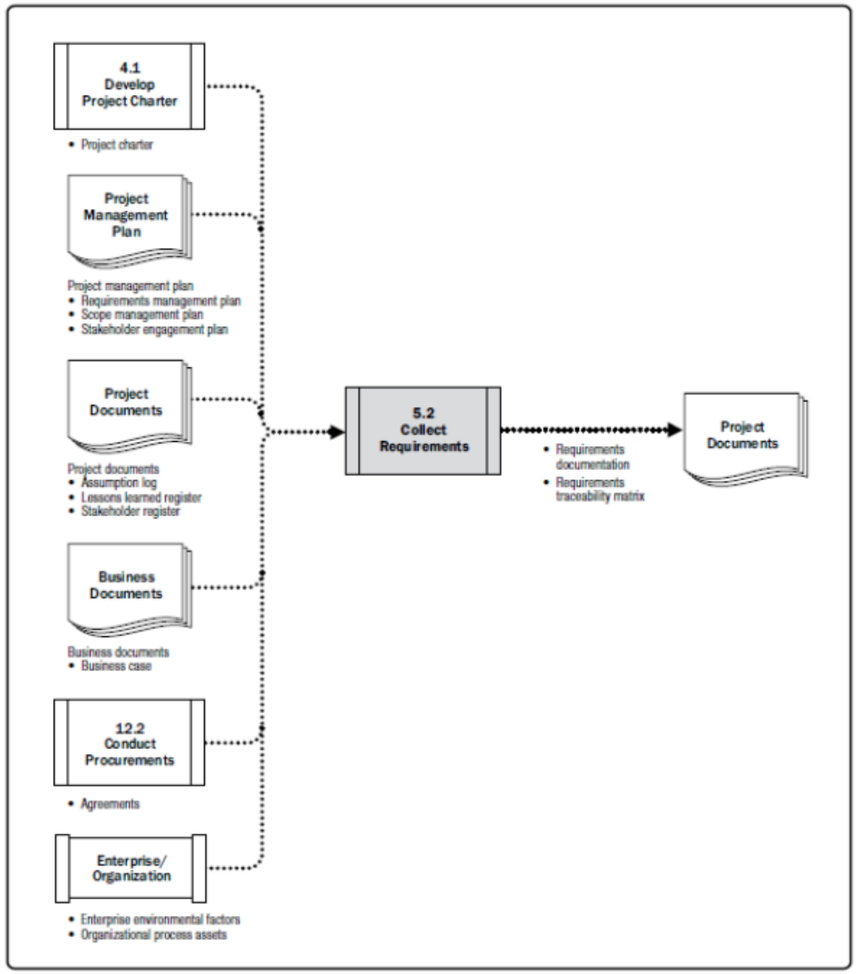
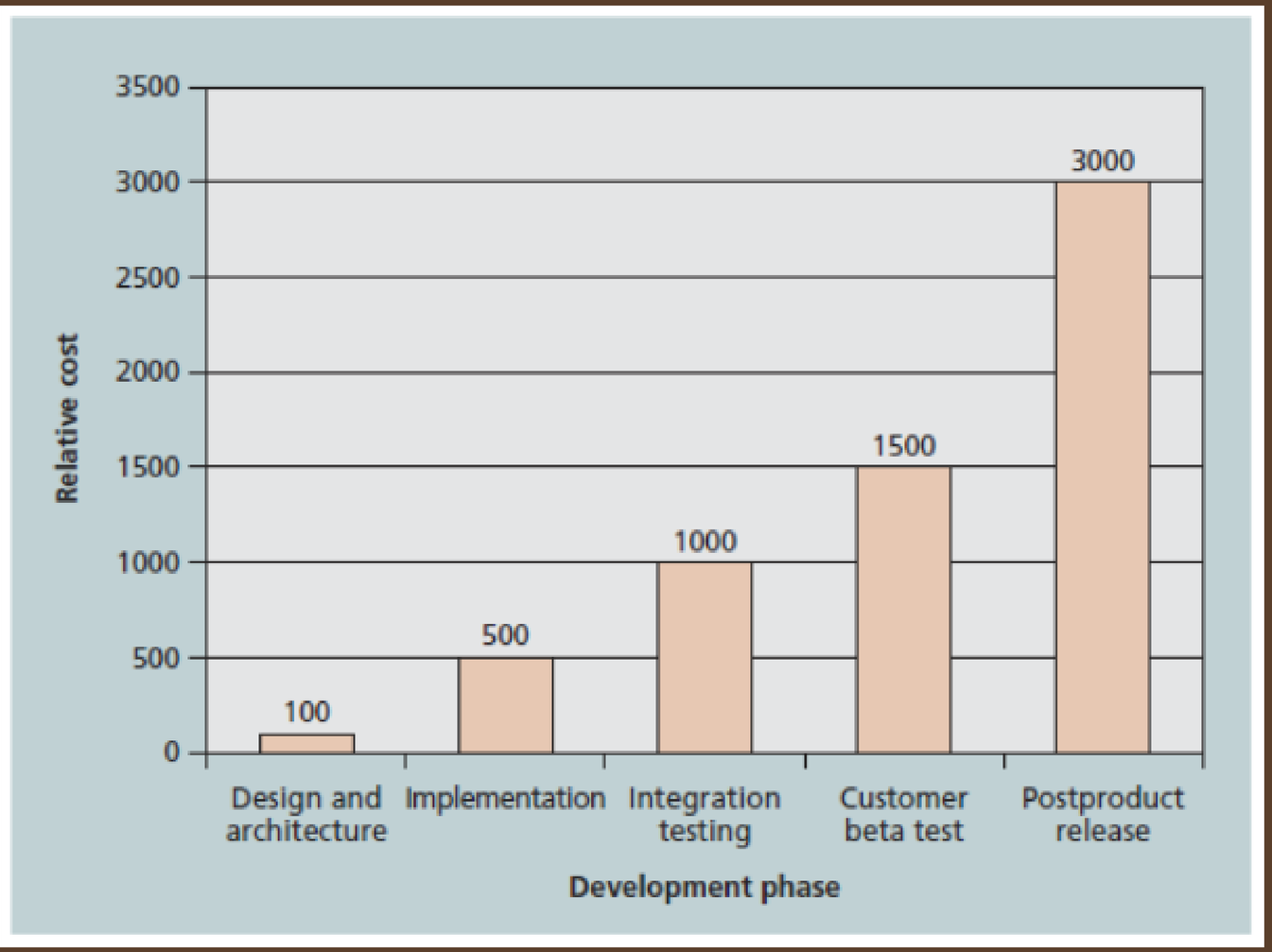





Source: IBM Software Group, “Minimizing code defects to improve software quality and lower development costs,” Rational Software (October 2008)

# Ways to collect requirements

- Brainstorming
- Interviewing stakeholders one on one
- Focus group discussions
- Facilitated workshops
- Questionnaires and surveys
  - *As long as stakeholders provide honest and thorough information*
- Benchmarking

# Requirements Traceability Matrix

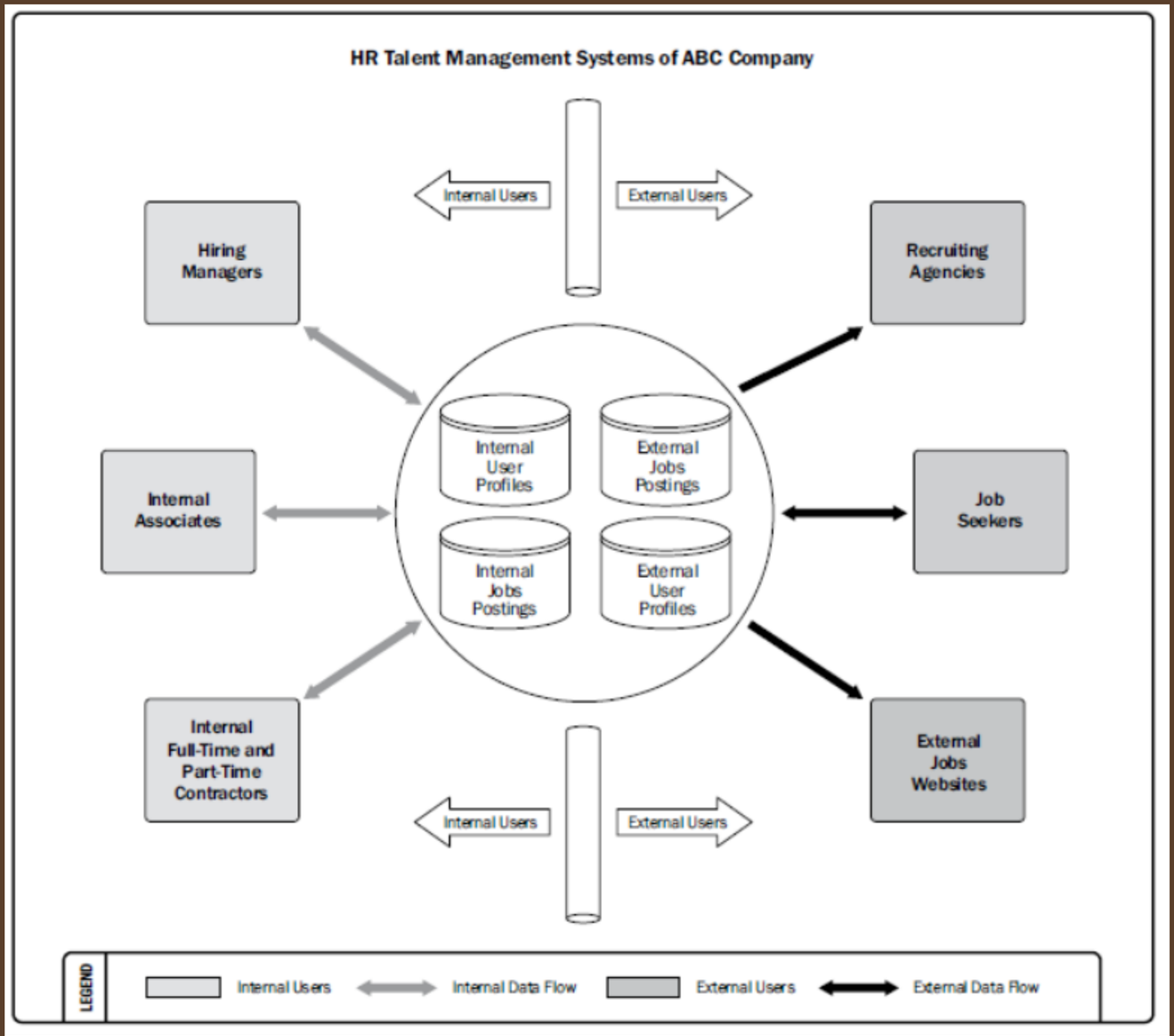
| | |
|---|---|
| Project Name: | |
| Cost Center: | |
| Project Description: | |

| 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 | | | | | | | |

# REQUIREMENTS TRACEABILITY MATRIX

## Project Name: Online Flight Booking Application

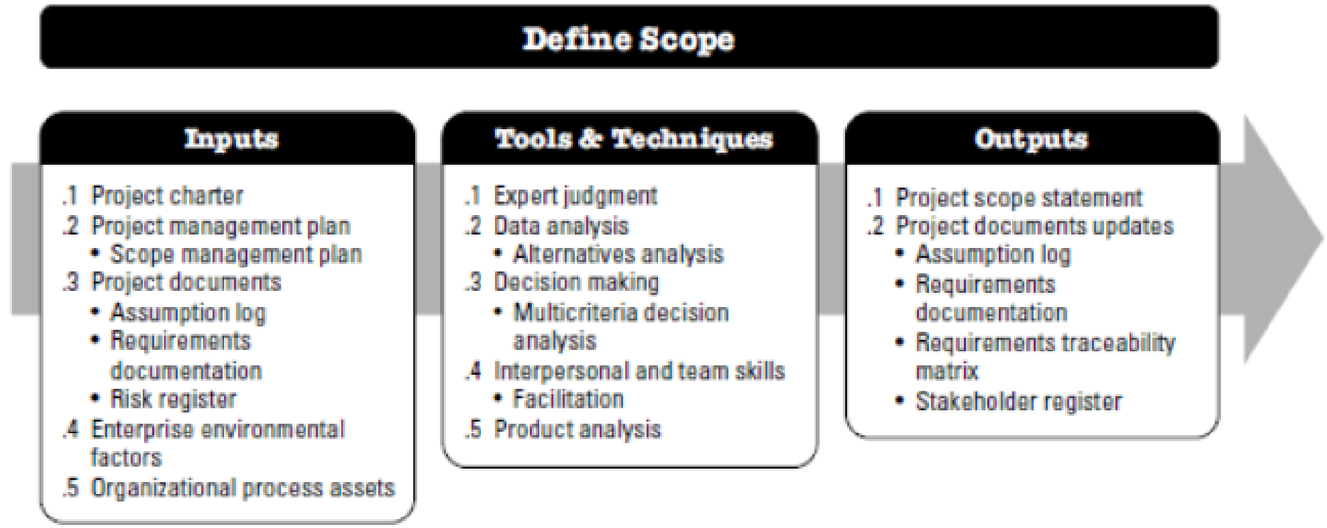
| Business Requirements Document BRD | | Functional Requirements Document FSD | | | Test Case Document |
|---|---|---|---|---|---|
| **Business Requirement ID#** | **Business Requirement / Business Use case** | **Functional Requirement ID#** | **Functional Requirement / Use Case** | **Priority** | **Test Case ID#** |
| BR_1 | Reservation Module | FR_1 | One Way Ticket booking | High | TC#001<br>TC#002 |
| | | FR_2 | Round Way Ticket | | TC#003<br>TC#004 |
| | | FR_3 | Multicity Ticket booking | High | TC#005<br>TC#006 |
| BR_2 | Payment Module | FR_4 | By Credit Card | High | TC#007<br>TC#008 |
| | | FR_5 | By Debit Card | High | TC#009 |
| | | FR_6 | By Reward Points | Medium | TC#010<br>TC#011 |


HR Talent Management Systems of ABC Company
Internal Users
External Users
Hiring Managers
Recruiting Agencies
Internal User Profiles
External Jobs Postings
Internal Associates
Job Seekers
Internal Jobs Postings
External User Profiles
Internal Full-Time and Part-Time Contractors
External Jobs Websites
Internal Users
External Users
LEGEND
Internal Users
Internal Data Flow
External Users
External Data Flow

Initiation | Planning | Execution | Monitoring & Controlling | Closing

# 3. DEFINING SCOPE

*Provide a detailed definition of the work required for the project*



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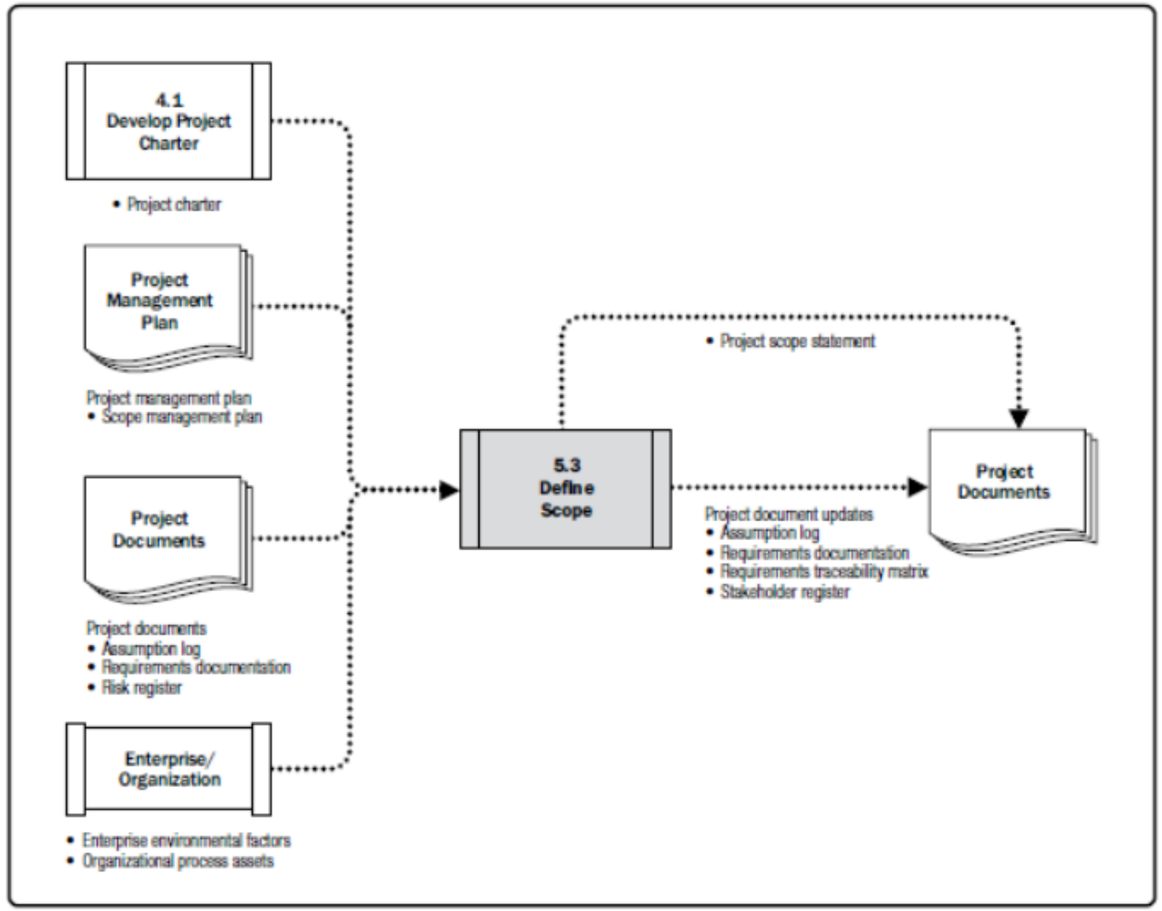


**Project Definition Form (Scope Statement)**

**Strategic Goals:** Improve customer service for our products and services by 5 percent via deployment of a new customer relationship management software.

*Time*: Finish by September 15, 2010 Cost: $150,000 Quality: Per service level agreement

**Tactical Goals:** Analyze workflow, configure software, develop prototype, and release software.
*Major Deliverables*: Workflow analysis, configure settings, prototype, training, release

**Key Milestones**

- Workflow analyzed by March 15, 2010
- Configure complete by April 15, 2010
- Prototype complete by August 15, 2010
- Training complete by August 15, 2010
- Release by September 15, 2010

**Major Constraints**

Our key developers will not be available in June because of their visit to our European ally.

**Major Assumptions**

Configure software to meet our workflow; we will not change our workflow to meet software.

**Specifically Excluded Scope**

This project does not include training on customer service skills.

## Project Charter

Project purpose

Measurable project objectives and related success criteria

High-level requirements

High-level project description, boundaries, and key deliverables

Overall project risk

Summary milestone schedule

Preapproved financial resources

Key stakeholder list

Project approval requirements (i.e., what constitutes success, who decides the project is successful, who signs off on the project)

Project exit criteria (i.e., what are the conditions to be met in order to close or to cancel the project or phase

Assigned project manager, responsibility, and authority level

Name and authority of the sponsor or other person(s) authorizing the project charter

## Project Scope Statement

Project scope description (progressively elaborated)

Project deliverables

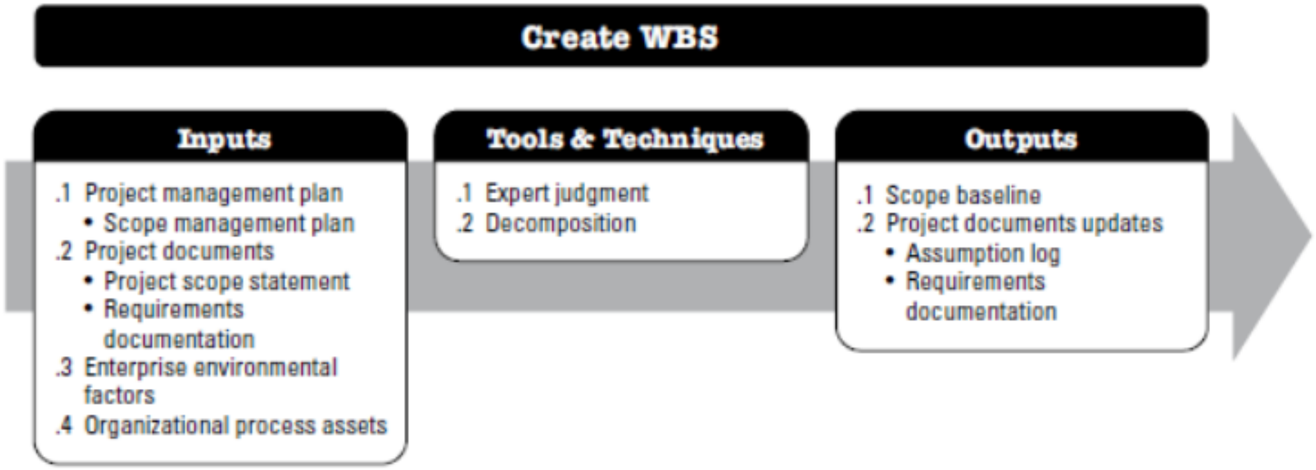
Acceptance criteria

Project exclusions

Initiation | Planning | Execution | Monitoring & Controlling | Closing

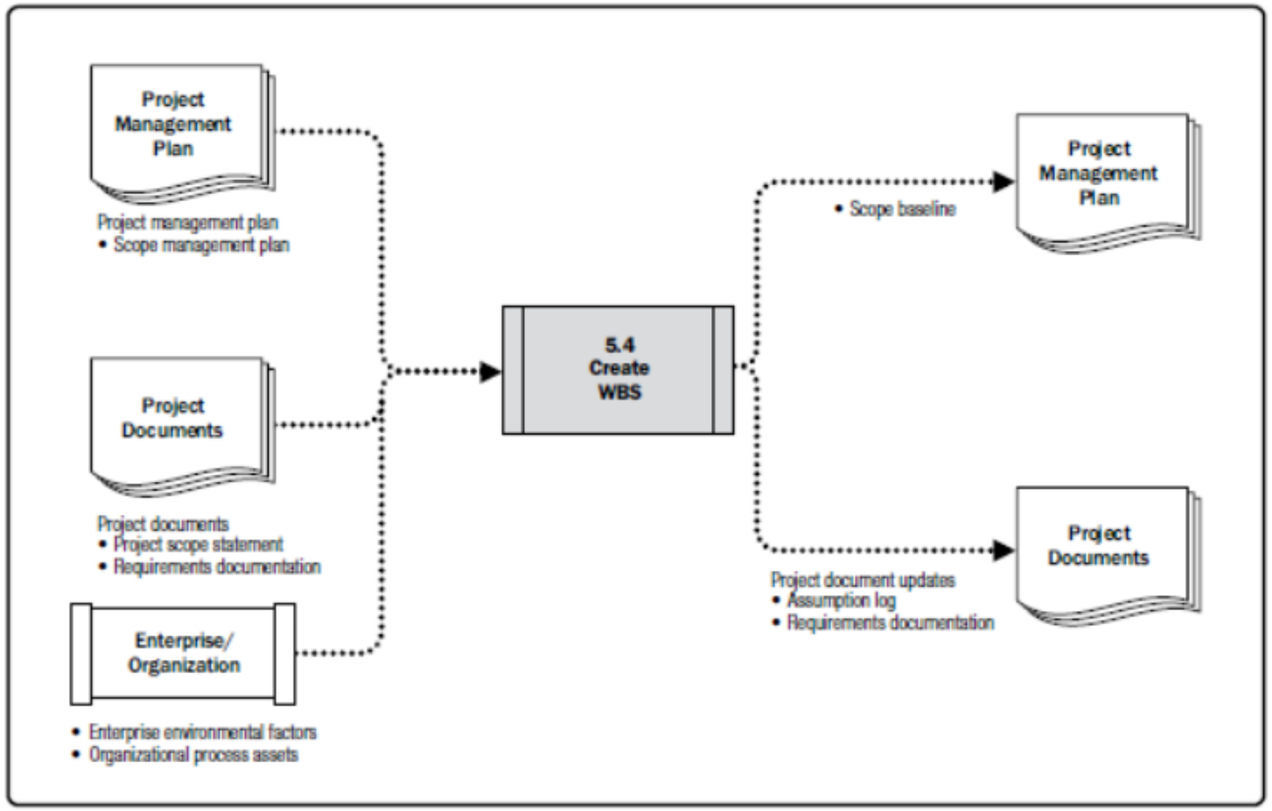
# 4. CREATING WBS

*Work Breakdown Structure*



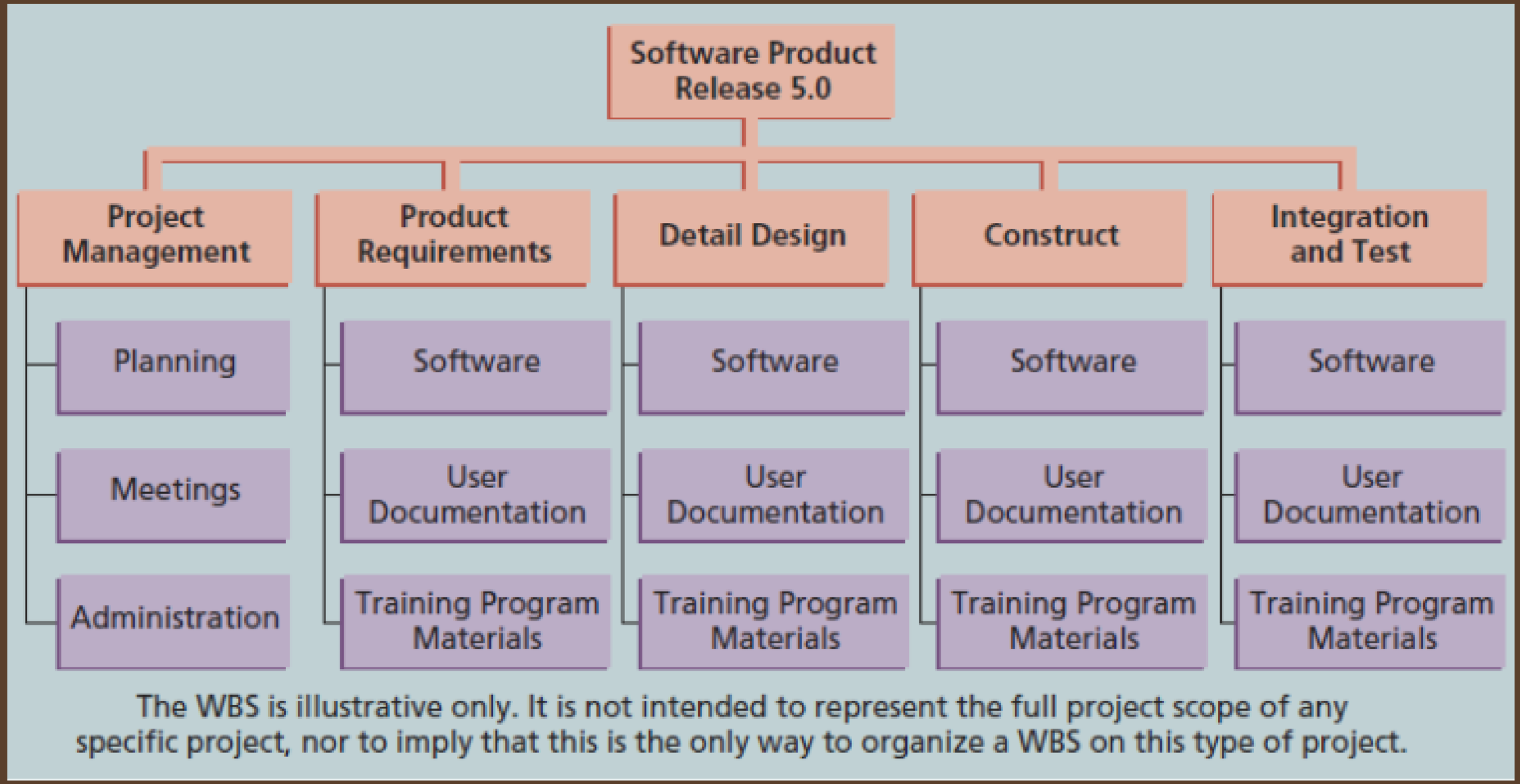
# 4. CREATING WBS

*Work Breakdown Structure*

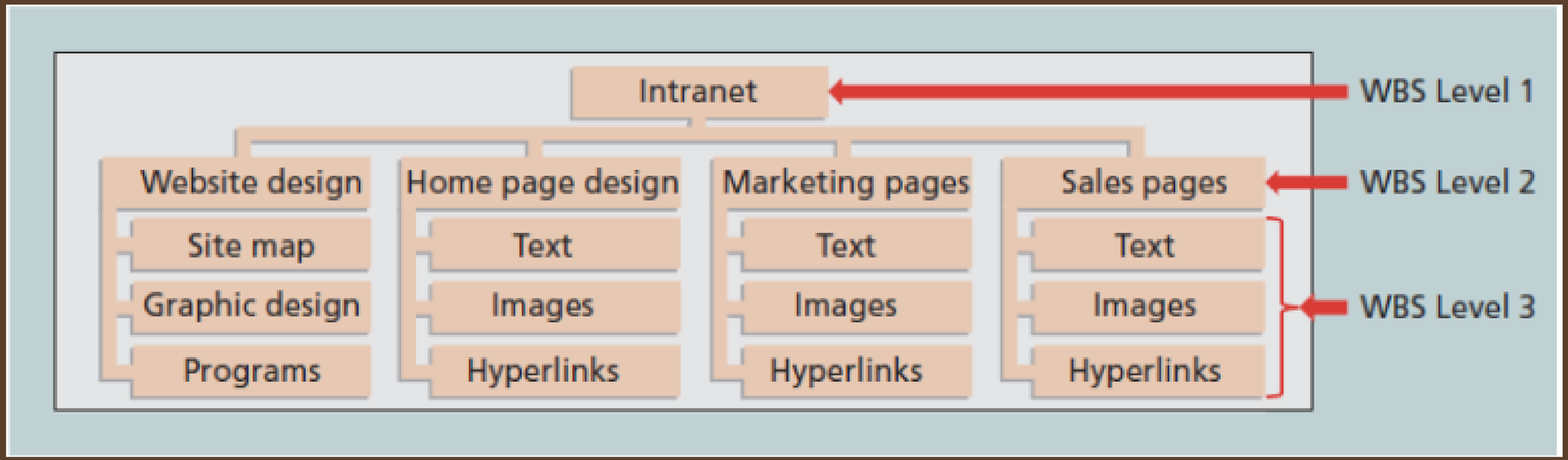


# Work Breakdown Structure (WBS)

- Divide the work into logical parts based on how the work will be performed
- Basis for planning and managing project schedules, costs, resources, and changes
- Defines the total scope of the project




The WBS is illustrative only. It is not intended to represent the full project scope of any specific project, nor to imply that this is the only way to organize a WBS on this type of project.


Intranet
WBS Level 1
Website design
Home page design
Marketing pages
Sales pages
WBS Level 2
Site map
Graphic design
Programs
Text
Images
Hyperlinks
Text
Images
Hyperlinks
Text
Images
Hyperlinks
WBS Level 3

# Approaches to Developing WBS

- Using guidelines
- Analogy approach
- Top-down approach
- Bottom-up approach
- Mind-mapping approach

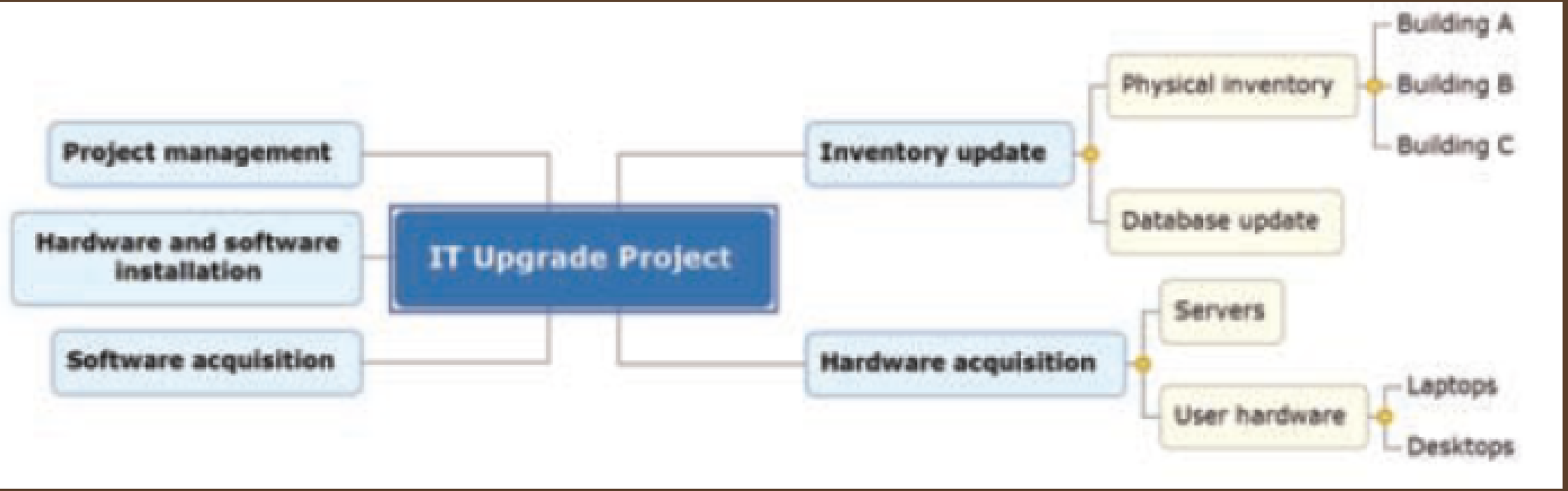

IT Upgrade Project
Project management
Hardware and software installation
Software acquisition
Inventory update
Physical inventory
Building A
Building B
Building C
Database update
Hardware acquisition
Servers
User hardware
Laptops
Desktops

**TABLE 5-4** Tabular form of WBS

1.0 Software Product Release 5.0
- 1.1 Project Management
  - 1.1.1 Planning
  - 1.1.2 Meetings
  - 1.1.3 Administration
- 1.2 Product Requirements
  - 1.2.1 Software
  - 1.2.2 User Documentation
  - 1.2.3 Training Program Materials
- 1.3 Detail Design
  - 1.3.1 Software
  - 1.3.2 User Documentation
  - 1.3.3 Training Program Materials
- 1.4 Construct
  - 1.4.1 Software
  - 1.4.2 User Documentation
  - 1.4.3 Training Program Materials
- 1.5 Integration and Test
  - 1.5.1 Software
  - 1.5.2 User Documentation
  - 1.5.3 Training Program Materials

| WBS Dictionary Entry March 20 |
| --- |
| Project Title: Information Technology (IT) Upgrade Project |
| WBS Item Number: 2.2 |
| WBS Item Name: Database Update |
| Description: The IT department maintains an online database of hardware and software on the corporate intranet. We need to make sure that we know exactly what hardware and software employees are currently using and if they have any unique needs before we decide what to order for the upgrade. This task will involve reviewing information from the current database, producing reports that list each department's employees and location, and updating the data after performing the physical inventory and receiving inputs from department managers. Our project sponsor will send a notice to all department managers to communicate the importance of this project and this particular task. In addition to general hardware and software upgrades, the project sponsors will ask the department managers to provide information for any unique requirements they might have that could affect the upgrades. This task also includes updating the inventory data for network hardware and software. After updating the inventory database, we will send an e-mail to each department manager to verify the information and make changes online as needed. Department managers will be responsible for ensuring that their people are available and cooperative during the physical inventory. Completing this task is dependent on WBS Item Number 2.1, Physical Inventory, and must precede WBS Item Number 3.0, Hardware and Software Acquisition. |

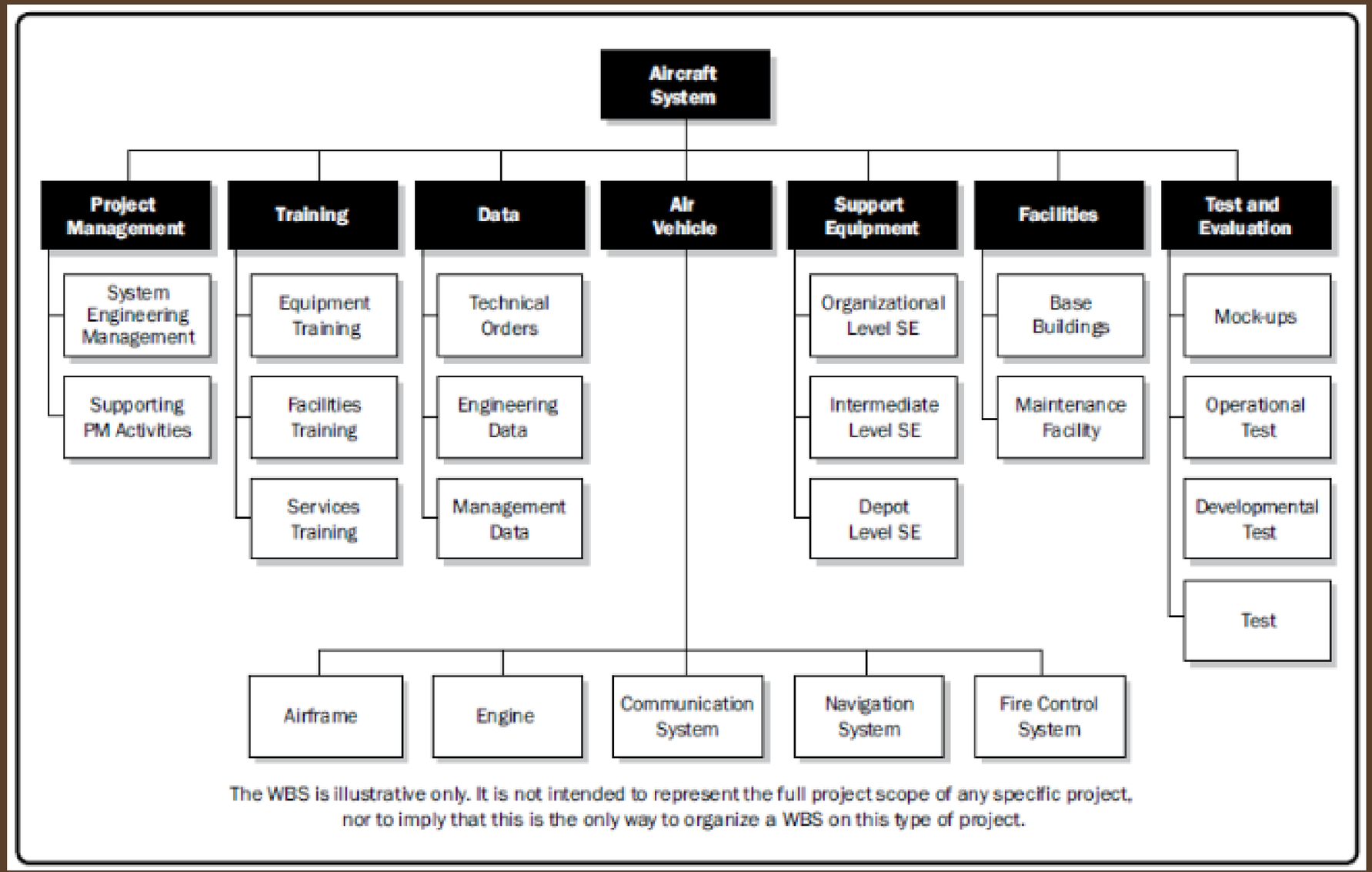



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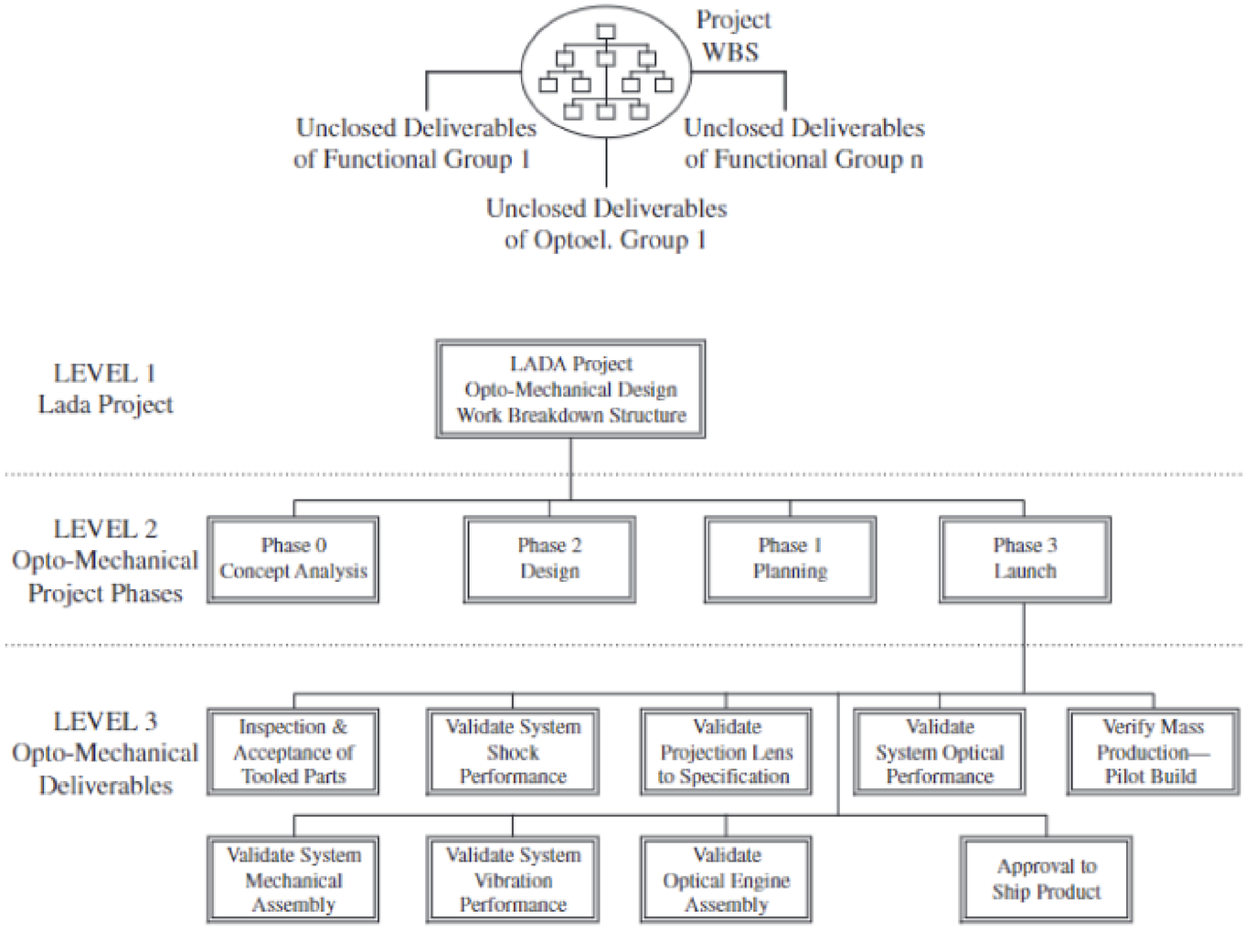
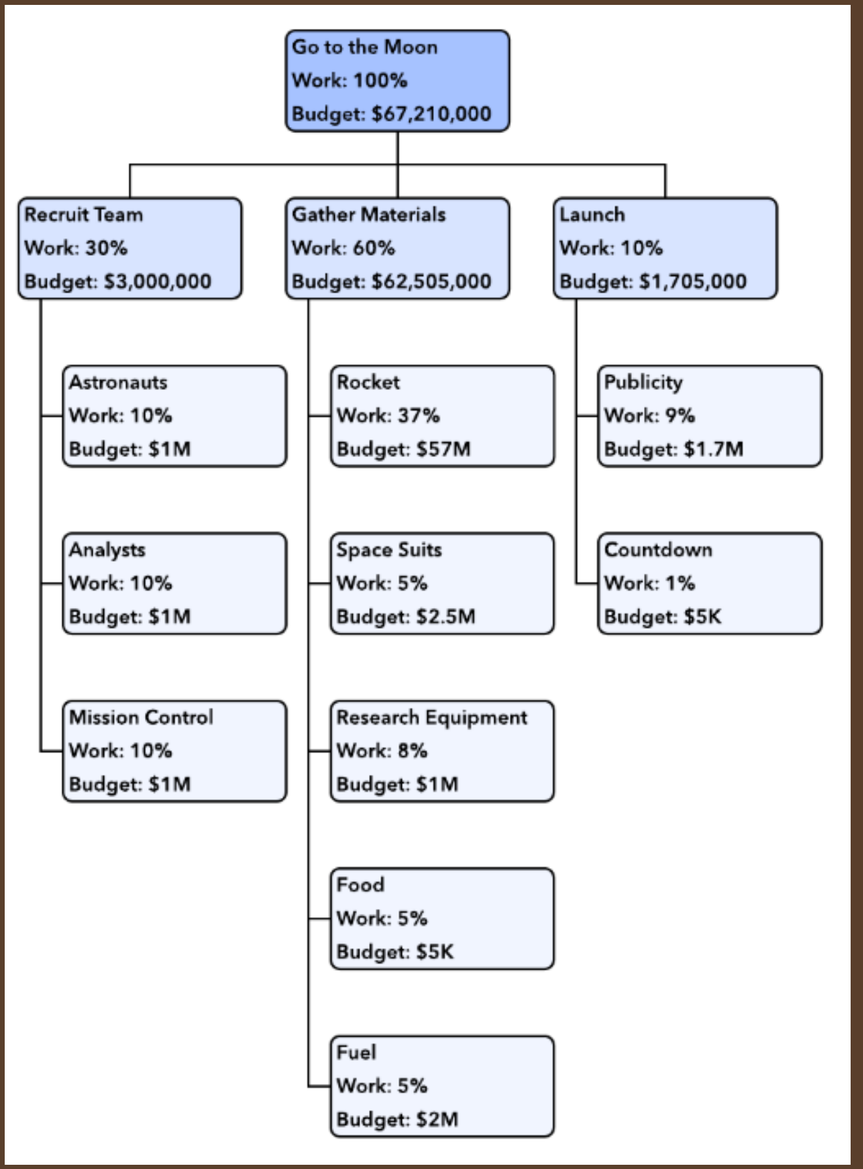
***Figure 5.2 Project Lada WBS for the Opto-Mechanical Group***

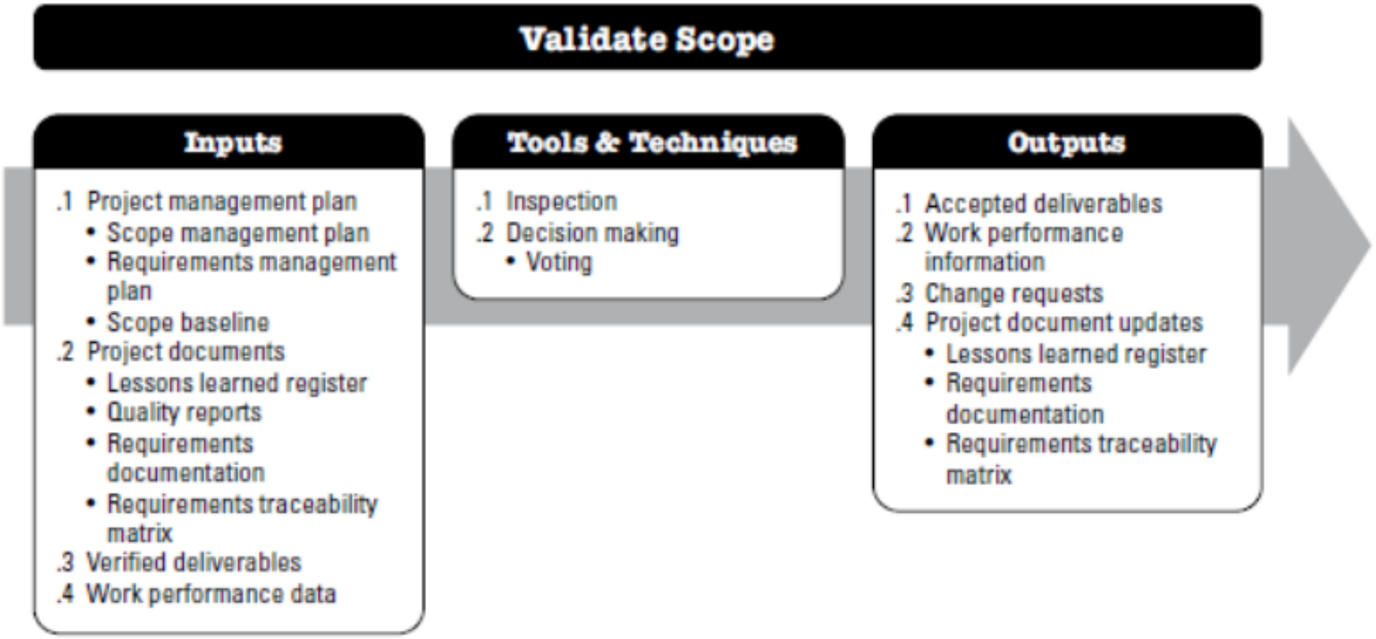



Go to the Moon
Work: 100%
Budget: $67,210,000
Recruit Team
Work: 30%
Budget: $3,000,000
Gather Materials
Work: 60%
Budget: $62,505,000
Launch
Work: 10%
Budget: $1,705,000
Astronauts
Work: 10%
Budget: $1M
Analysts
Work: 10%
Budget: $1M
Mission Control
Work: 10%
Budget: $1M
Rocket
Work: 37%
Budget: $57M
Space Suits
Work: 5%
Budget: $2.5M
Research Equipment
Work: 8%
Budget: $1M
Food
Work: 5%
Budget: $5K
Fuel
Work: 5%
Budget: $2M
Publicity
Work: 9%
Budget: $1.7M
Countdown
Work: 1%
Budget: $5K

Initiation | Planning | Execution | Monitoring & Controlling | Closing

# 4. VALIDATING SCOPE

*Develop a process for scope validation that meets unique project needs*

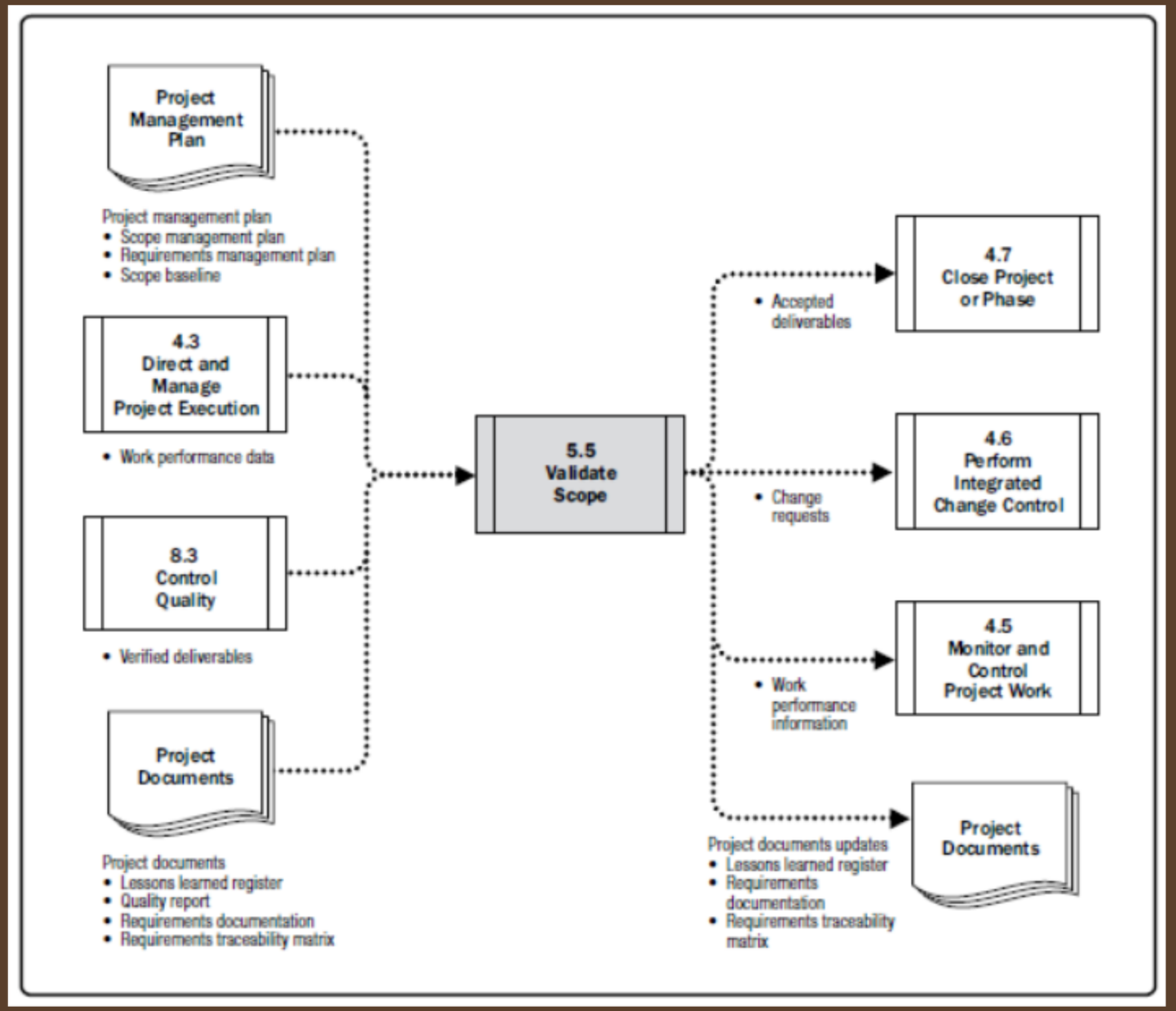


## Scope Validation

- involves formal acceptance of the completed project deliverables

## Scope Creep

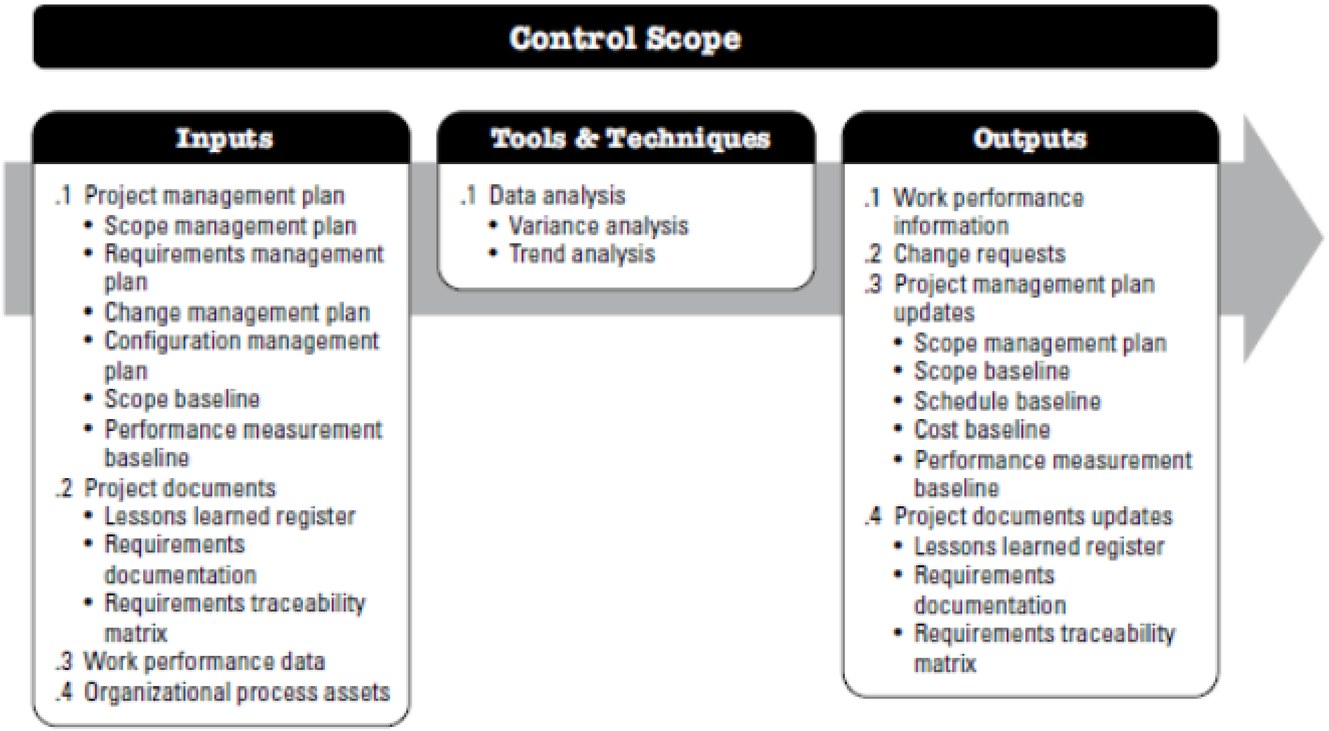
- occurs when unforeseen changes in scope alter the project plan without a formal request

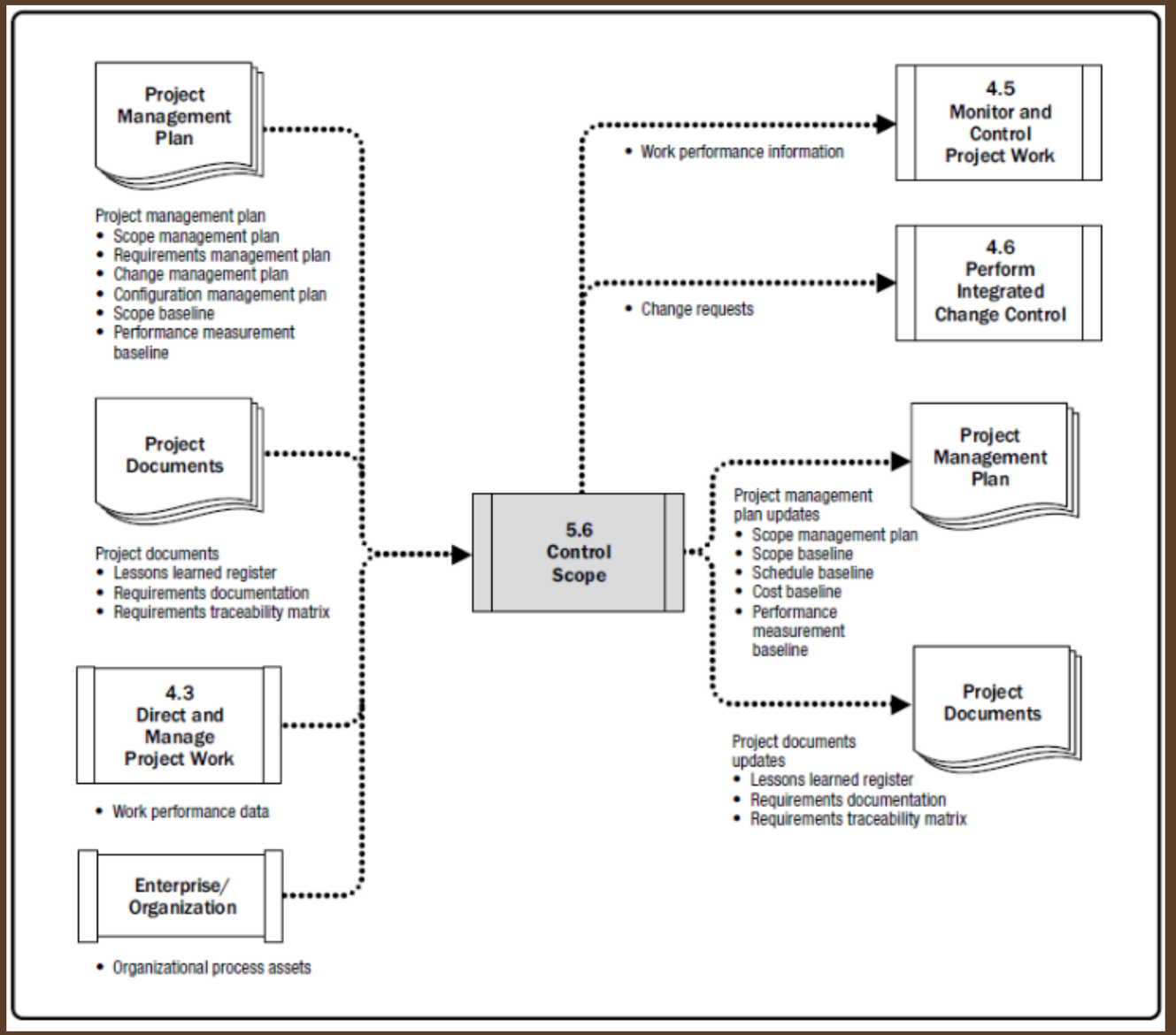

Project Management Plan
Project management plan
• Scope management plan
• Requirements management plan
• Scope baseline
4.3 Direct and Manage Project Execution
• Work performance data
8.3 Control Quality
• Verified deliverables
Project Documents
Project documents
• Lessons learned register
• Quality report
• Requirements documentation
• Requirements traceability matrix
5.5 Validate Scope
• Accepted deliverables
4.7 Close Project or Phase
• Change requests
4.6 Perform Integrated Change Control
• Work performance information
4.5 Monitor and Control Project Work
Project documents updates
• Lessons learned register
• Requirements documentation
• Requirements traceability matrix
Project Documents

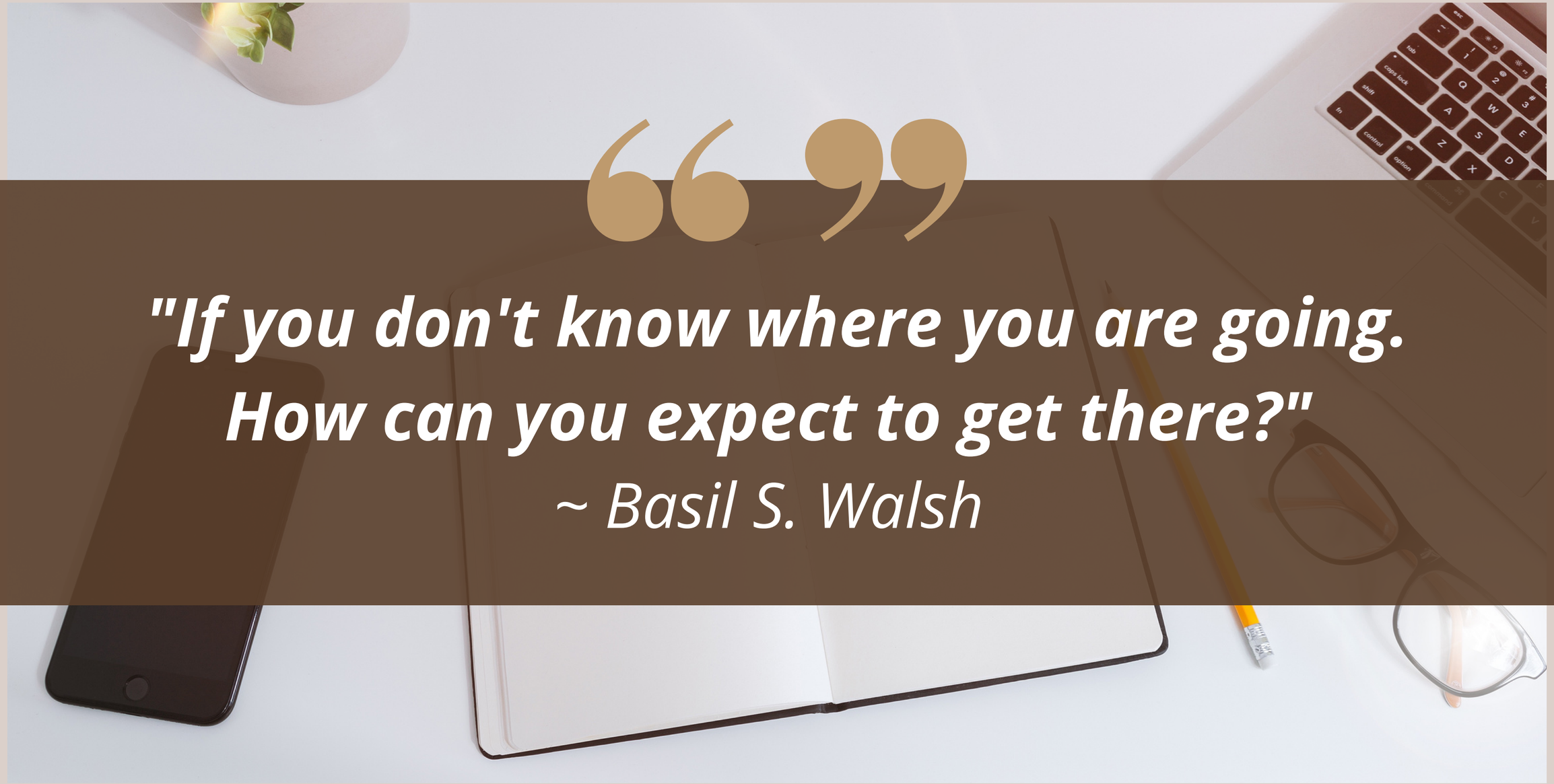
Initiation | Planning | Execution | Monitoring & Controlling | Closing

# 4. CONTROLLING SCOPE

*Managing changes to the project scope while keeping project goals and business strategy in mind.*




Project Management Plan
Project management plan
• Scope management plan
• Requirements management plan
• Change management plan
• Configuration management plan
• Scope baseline
• Performance measurement baseline
Project Documents
Project documents
• Lessons learned register
• Requirements documentation
• Requirements traceability matrix
4.3 Direct and Manage Project Work
• Work performance data
Enterprise/ Organization
• Organizational process assets
5.6 Control Scope
• Work performance information
4.5 Monitor and Control Project Work
• Change requests
4.6 Perform Integrated Change Control
Project Management Plan
Project management plan updates
• Scope management plan
• Scope baseline
• Schedule baseline
• Cost baseline
• Performance measurement baseline
Project Documents
Project documents updates
• Lessons learned register
• Requirements documentation
• Requirements traceability matrix



***"If you don't know where you are going. How can you expect to get there?"***

*~ Basil S. Walsh*

# THANK YOU