

# Chapter 5:

# Project Scope Management

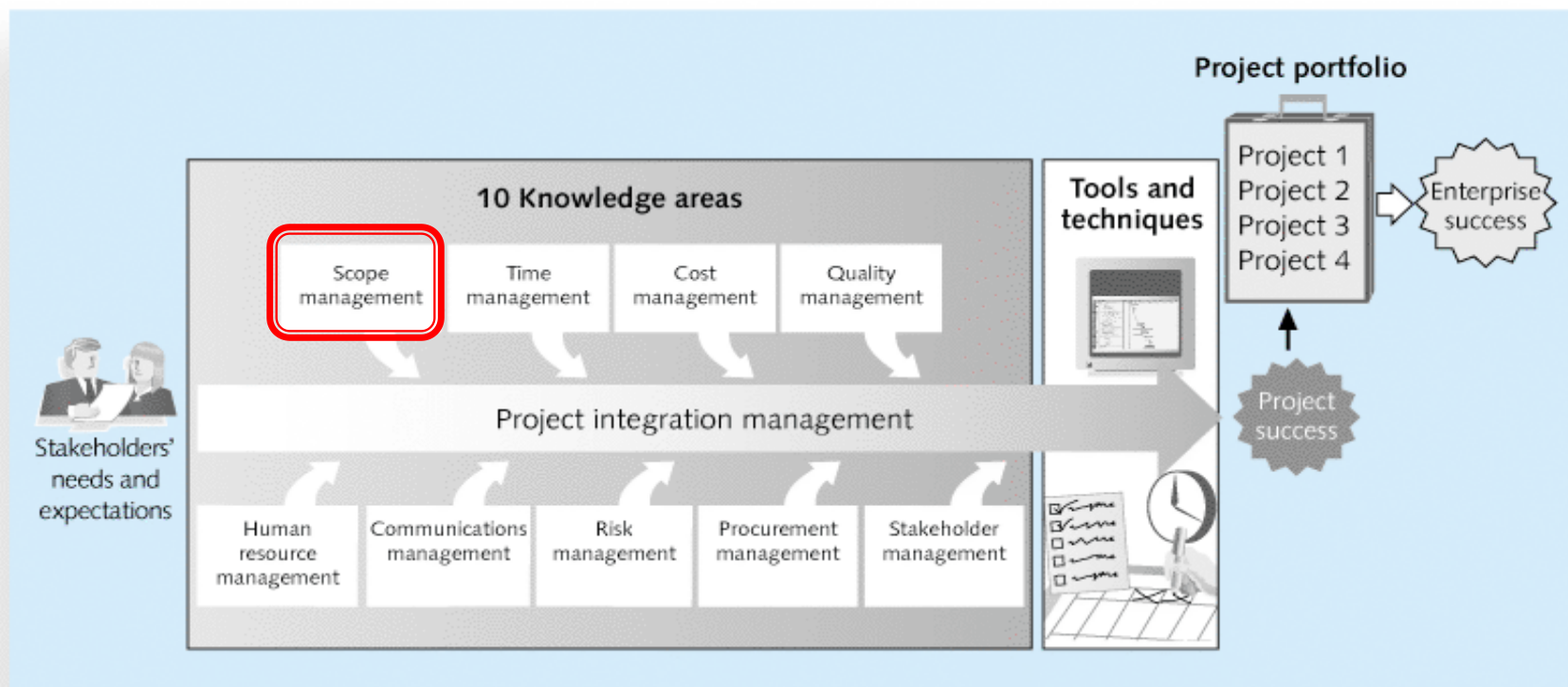
Information Technology Project  
Management, Seventh Edition



Information Technology  
PROJECT MANAGEMENT | 7e

Kathy Schwalbe

ĐẶNG THỊ THU HÀ – SE  
[dtthuha79@gmail.com](mailto:dtthuha79@gmail.com)  
<https://lms.iuh.edu.vn>



# Learning Objectives

- ▶ Describe the process of planning scope management
- ▶ Explain the scope definition process and describe the contents of a project scope statement
- ▶ Discuss the process for creating a work breakdown structure (WBS) using the analogy, top-down, bottom-up, and mind-mapping approaches
- ▶ Explain the importance of validating scope and how it relates to defining and controlling scope

# What is Project Scope Management?

- ▶ **Scope** refers to *all* the work involved in creating the products of the project and the processes used to create them
- ▶ A **deliverable** is a product produced as part of a project, such as hardware or software, planning documents, or meeting minutes
- ▶ Project scope management includes the processes involved in defining and controlling what is or is not included in a project

# Project Scope Management Processes

- ▶ **5.1.Planning scope:** determining how the project's scope and requirements will be managed
- ▶ **5.2.Collecting requirements:** defining and documenting the features and functions of the products produced during the project as well as the processes used for creating them
- ▶ **5.3.Defining scope:** reviewing the project charter, requirements documents, and organizational process assets to create a scope statement

# Project Scope Management Processes

- ▶ **5.4.Creating the WBS:** subdividing the major project deliverables into smaller, more manageable components
- ▶ **5.5.Validating scope:** formalizing acceptance of the project deliverables
- ▶ **5.6.Controlling scope:** controlling changes to project scope throughout the life of the project



# Figure 5-1. Project Scope Management Summary

## Planning

Process: **Plan scope management**

Outputs: Scope management plan, requirements management plan

Process: **Collect requirements**

Outputs: Requirements documentation, requirements traceability matrix

Process: **Define scope**

Outputs: Project scope statement, project documents updates

Process: **Create WBS**

Outputs: Scope baseline, project documents updates



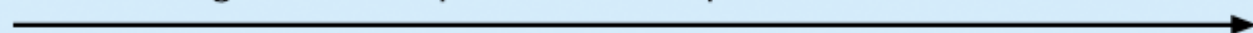
## Monitoring and Controlling

Process: **Validate scope**

Outputs: Accepted deliverables, change requests, work performance information, project documents updates

Process: **Control scope**

Outputs: Work performance information, change requests, project management plan updates, project documents updates, organizational process assets updates



Project Start

Project Finish



# 5.1.Planning Scope Management

- ▶ The project team uses expert judgment and meetings to develop two important outputs: the scope management plan and the requirements management plan
- ▶ The scope management plan is a subsidiary part of the project management plan



# Scope Management Plan Contents

- ▶ How to prepare a detailed project scope statement
- ▶ How to create a WBS
- ▶ How to maintain and approve the WBS
- ▶ How to obtain formal acceptance of the completed project deliverables
- ▶ How to control requests for changes to the project scope

## 5.2. Collecting Requirements

- ▶ For some IT projects, it is helpful to divide requirements development into categories called elicitation, analysis, specification, and validation
- ▶ It is important to use an iterative approach to defining requirements since they are often unclear early in a project

# Methods for Collecting Requirements

- ▶ Interviewing
- ▶ Focus groups and facilitated workshops
- ▶ Using group creativity and decision-making techniques
- ▶ Questionnaires and surveys
- ▶ Observation
- ▶ Prototyping
- ▶ **Benchmarking**, or generating ideas by comparing specific project practices or product characteristics to those of other projects or products inside or outside the performing organization, can also be used to collect requirements

# Requirements Traceability Matrix

- ▶ A **requirements traceability matrix (RTM)** is a table that lists requirements, various attributes of each requirement, and the status of the requirements to ensure that all requirements are addressed
- ▶ Table 5-1. Sample entry in an RTM

Requirement No.	Name	Category	Source	Status
R32	Laptop memory	Hardware	Project charter and corporate laptop specifications	Complete. Laptops ordered meet requirement by having 4GB of memory.

## 5.3. Defining Scope

- ▶ **Project scope statements** should include at least a product scope description, product user acceptance criteria, and detailed information on all project deliverables. It is also helpful to document other scope-related information, such as the project boundaries, constraints, and assumptions. The project scope statement should also reference supporting documents, such as product specifications
- ▶ As time progresses, the scope of a project should become more clear and specific which bases on the project charter (*Chapter 4*).

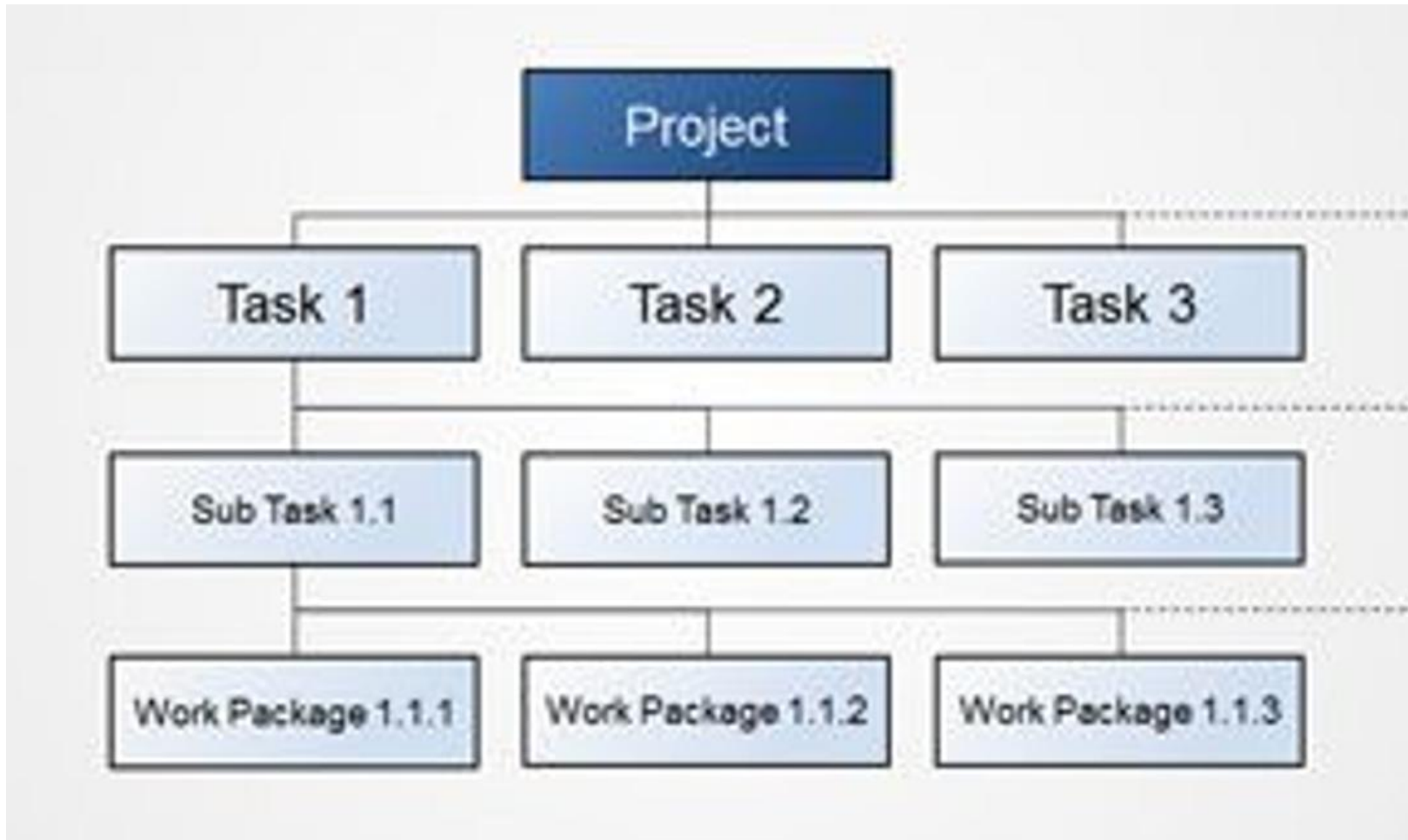
## 5.4.Creating the Work Breakdown Structure (WBS)

- ▶ A **WBS** is a deliverable-oriented grouping of the work involved in a project that defines the total scope of the project
- ▶ 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



## 5.4.Creating the Work Breakdown Structure (WBS) (cont)

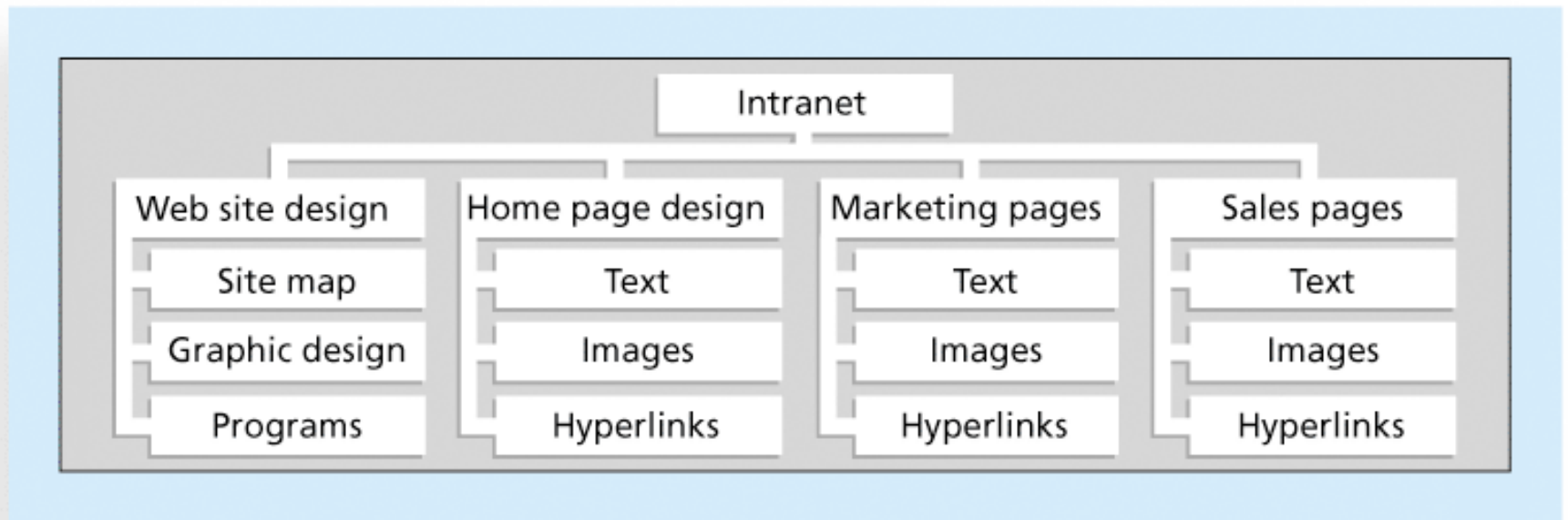
- ▶ A **work package** is a task at the lowest level of the WBS
- ▶ The **scope baseline** includes the approved project scope statement and its associated WBS and WBS dictionary
- ▶ A **WBS** is a deliverable-oriented grouping of the work involved in a project that defines the total scope of the project



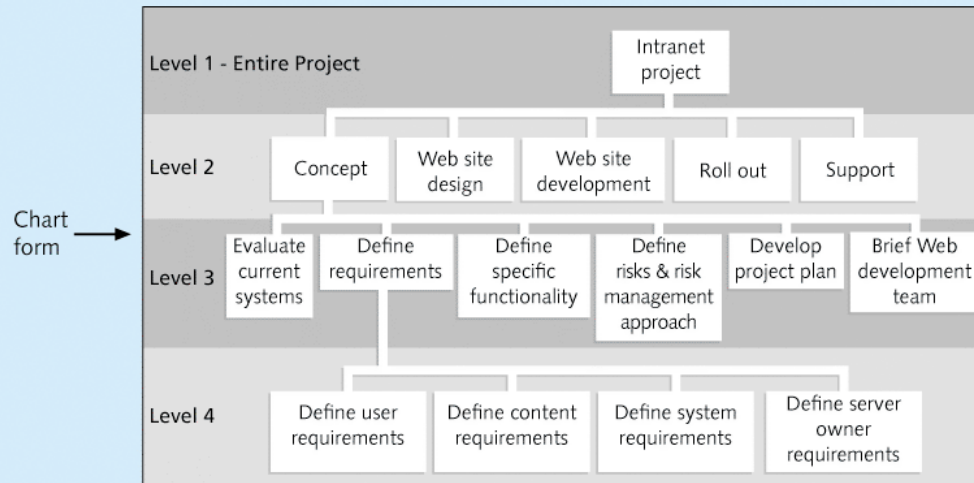
# Approaches to Developing WBSs

- ▶ 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 (large)
- ▶ The **bottom-up approach**: Start with the specific tasks and roll them up (small)
- ▶ **Mind-mapping approach**: **Mind mapping** is a technique that uses branches radiating out from a core idea to structure thoughts and ideas (both)

# Figure 5-3. Sample Intranet WBS Organized by Product



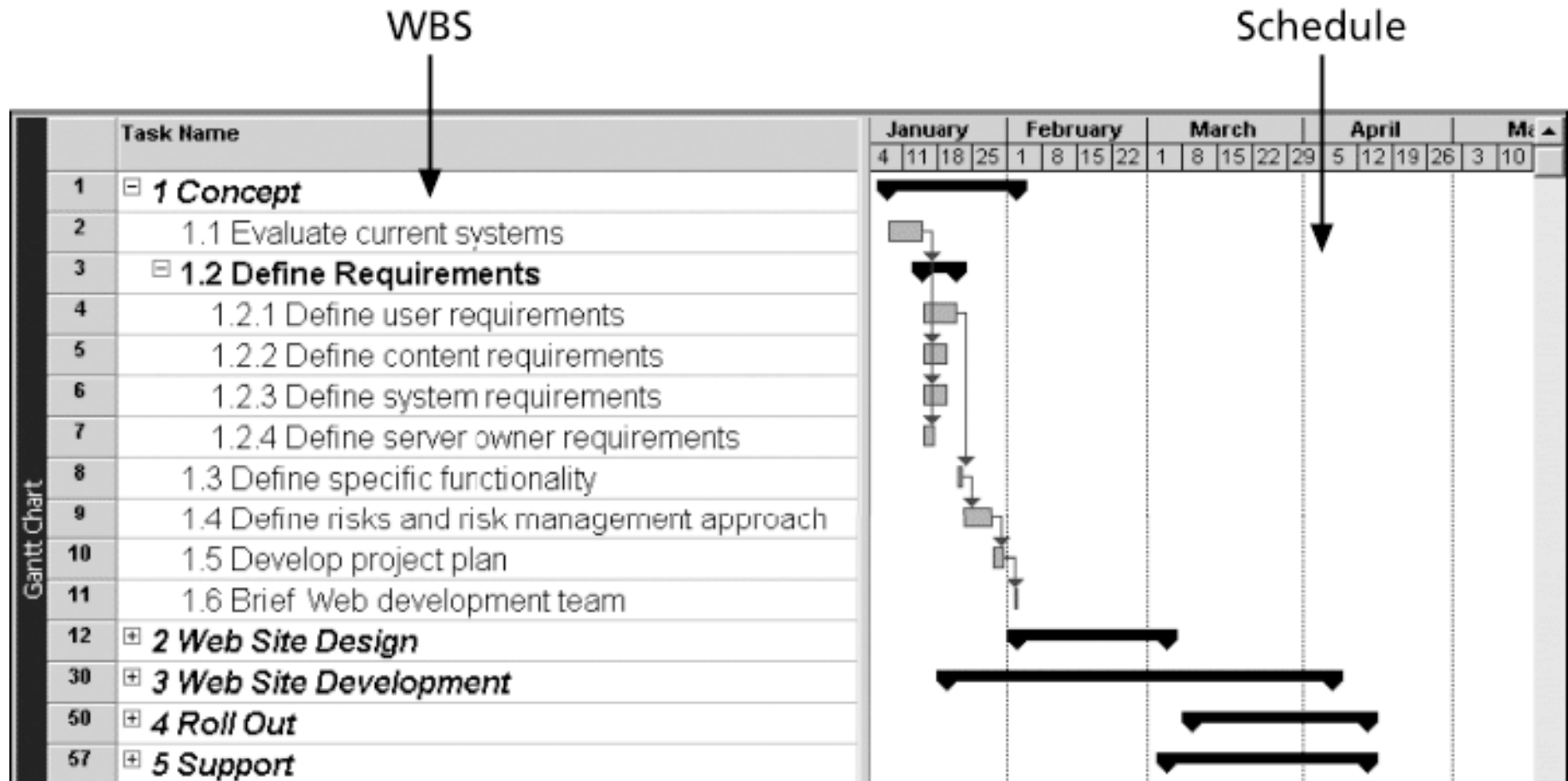
# Figure 5-4. Sample Intranet WBS Organized by Phase



## Tabular form with PMI numbering

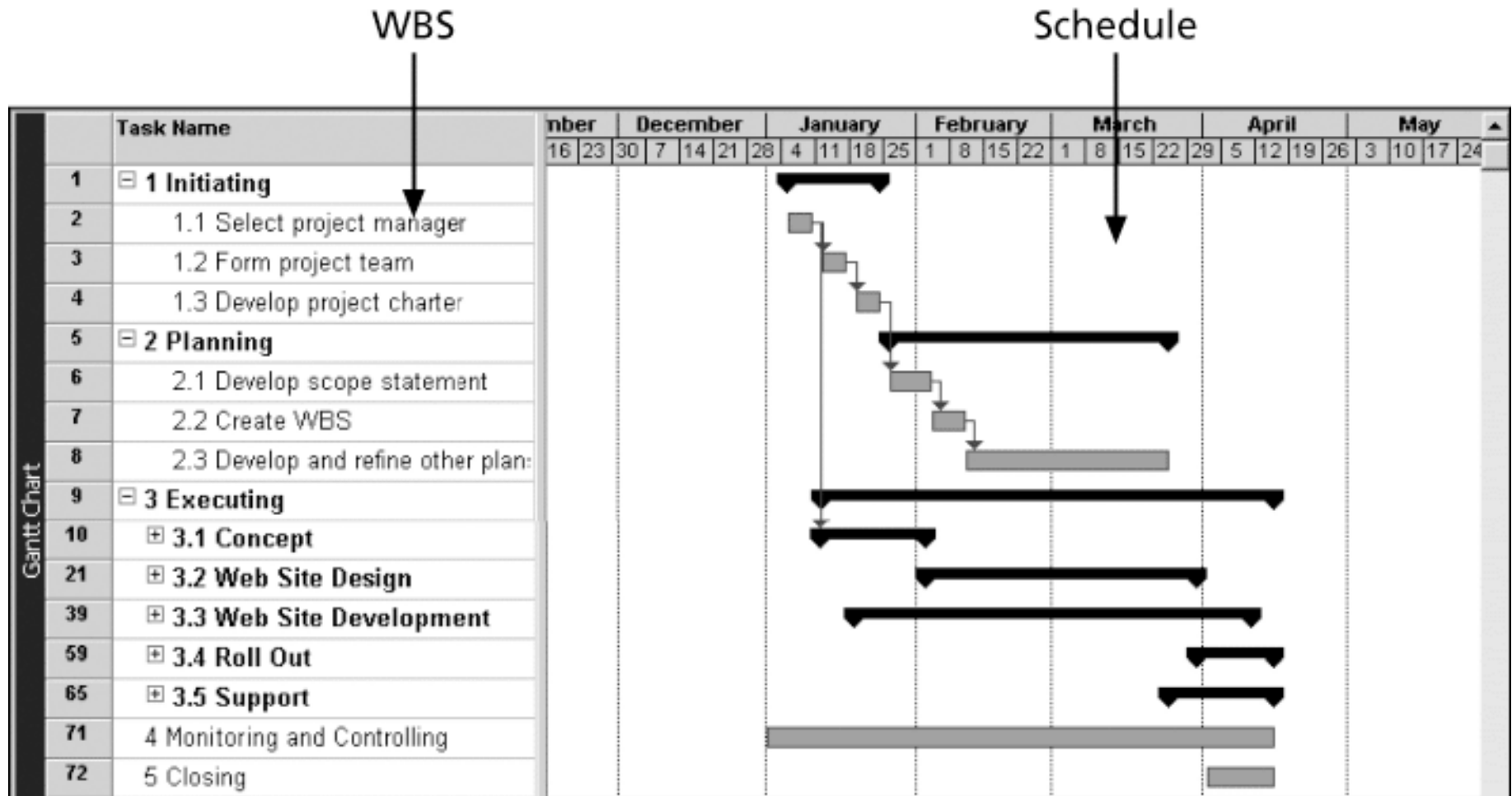
- 1.1 Concept
  - 1.1.1 Evaluate current systems
  - 1.1.2 Define requirements
    - 1.1.2.1 Define user requirements
    - 1.1.2.2 Define content requirements
    - 1.1.2.3 Define system requirements
    - 1.1.2.4 Define server owner requirements
  - 1.1.3 Define specific functionality
  - 1.1.4 Define risks and risk management approach
  - 1.1.5 Develop project plan
  - 1.1.6 Brief Web development team
- 1.2 Web site design
- 1.3 Web site development
- 1.4 Roll out
- 1.5 Support

# Figure 5-5. Intranet WBS and Gantt Chart in Microsoft Project

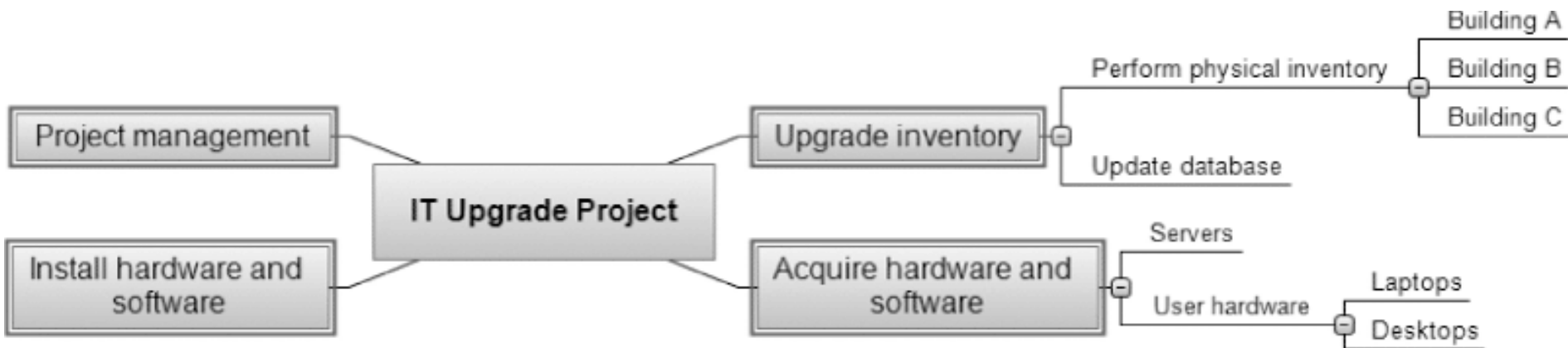




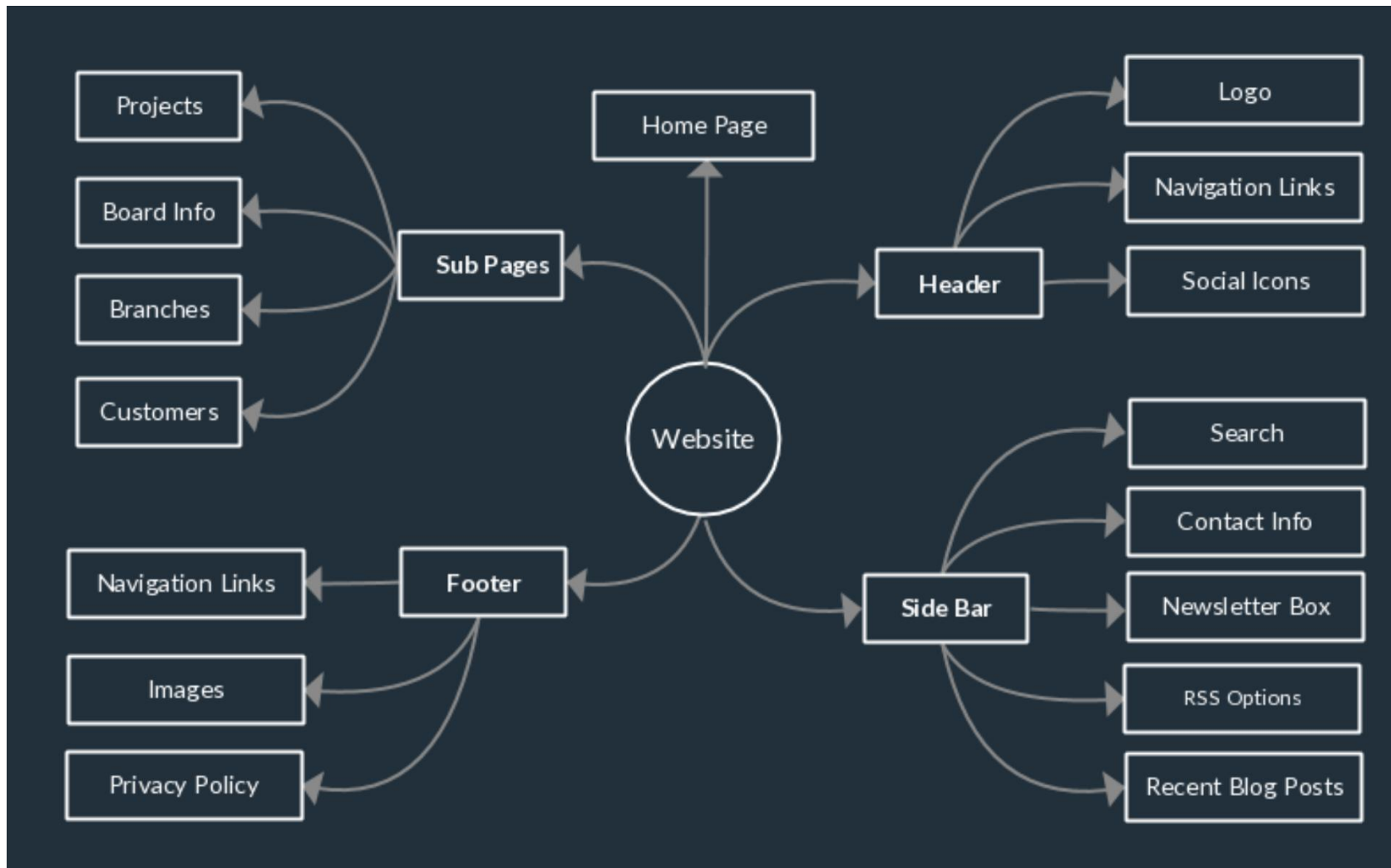
## Figure 5-6. Intranet Gantt Chart Organized by Project Management Process Groups



# Figure 5-7. Sample Mind-Mapping Approach for Creating a WBS



Source: MatchWare's MindView 4 Business Edition



# The WBS Dictionary and Scope Baseline

- ▶ Many WBS tasks are vague and must be explained more so people know what to do and can estimate how long it will take and what it will cost to do the work
- ▶ A **WBS dictionary** is a document that describes detailed information about each WBS item

# Creating a WBS Dictionary

- ▶ Microsoft Word
- ▶ Microsoft Project
- ▶ Microsoft Excel
- ▶ It is one of the most effective ways because it provides context-relevant information and ensures synchronization with the project WBS.

# Creating a WBS Dictionary (cont.)

<b>Project: Intranet Project</b>
<b>Work Package Id: 1.1.3</b>
<b>Work Package Name:</b> Design specific functionality
<b>Work Package Description:</b> Indentify some detailed functions of system.
<b>Assigned To:</b> John Abraham.
<b>Department:</b> Dept.
<b>Date Assigned:</b> 15/08/2023 <b>Date Due:</b> 02/09/2023
<b>Estimated Cost:</b> \$ 1500.00 <b>Accounting Code :</b> SIMPIT- 020



## 5.5. Validating Scope

- ▶ It is very difficult to create a good scope statement and WBS for a project
- ▶ It is even more difficult to verify project scope and minimize scope changes
- ▶ **Scope validation** involves formal acceptance of the completed project deliverables
- ▶ Acceptance is often achieved by a customer inspection and then sign-off on key deliverables

# 5.6. Controlling Scope

- ▶ Scope control involves controlling changes to the project scope
- ▶ Goals of scope control are to
  - influence the factors that cause scope changes
  - assure changes are processed according to procedures developed as part of integrated change control, and
  - manage changes when they occur
- ▶ **Variance** is the difference between planned and actual performance

# Suggestions for Reducing Incomplete and Changing Requirements

- ▶ Develop and follow a requirements management process
- ▶ Use techniques such as prototyping, use case modeling.
- ▶ Put requirements in writing and keep them current
- ▶ Create a requirements management database for documenting and controlling requirements

# Suggestions for Reducing Incomplete and Changing Requirements (cont'd)

- ▶ Provide adequate testing and conduct testing throughout the project life cycle
- ▶ Review changes from a systems perspective
- ▶ Emphasize completion dates to help focus on what's most important

# Using Software to Assist in Project Scope Management

- ▶ Word-processing software helps create several scope-related documents
- ▶ Spreadsheets help to perform financial calculations, weighed scoring models, and develop charts and graphs
- ▶ Communication software like e-mail and the Web help clarify and communicate scope information
- ▶ Project management software helps in creating a WBS, the basis for tasks on a Gantt chart

# Chapter Summary

- ▶ Project scope management includes the processes required to ensure that the project addresses all the work required, and only the work required, to complete the project successfully
- ▶ Main processes include
  - Define scope management
  - Collect requirements
  - Define scope
  - Create WBS
  - Validate scope
  - Control scope

## ▶ BT tuần 3:

- Làm đề tài theo nhóm về (QL tích hợp, QL Phạm vi)  
Tóm tắt lý thuyết (học bài)  
Ứng dụng vào đề tài
- File: **STTNhom\_BT tuan3**
  - DS Nhóm:
    - STT\_MSSV\_Hoten
    - STT\_MSSV\_Hoten
    - STT\_MSSV\_Hoten