
PROJECT SCOPE MANAGEMENT
Plan Scope Management
Collect Requirements
Define Scope
Create WBS
Validate Scope
Control Scope

# What is Project Scope Management?

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

# Project Scope Management Processes

- **Planning Scope Management**
- **Collecting requirements**
- Defining Scope
- Creating the WBS
- Validating Scope
- Controlling Scope

# 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**

# Planning Scope Management

## A Scope Management Plan's Informations:

1. How to prepare a detailed project scope statement
2. How to create a WBS
3. How to maintain and approve the WBS
4. How to obtain formal acceptance of the completed project deliverables
5. How to control requests for changes to the project scope

# Requirements

- IEEE Standard Glossary of Software Engineering Terminology, ***Requirements is***:
  1. A condition or capability needed by a user to solve a problem or achieve an objective.
  2. A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed document.
  3. A documented representation of a condition or capability as in 1 or 2.
- The PMBOK® Guide, Fifth Edition: ***requirements*** as “conditions or capabilities that must be met by the project or present in the product, service, or result to satisfy an agreement or other formally imposed specification

# The 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

# Collecting Requirements

- Interview
- Workshop
- Using group creativity and Decision making technique
- Questionnaires and surveys
- Observation
- Prototyping and document analysis
- Benchmarking

# Documenting Requirements

- Review the project charter
- Review the stakeholders registers and stakeholder management plan
- Requirements document are generated by software
- Requirements are broken down into different categories

# Requirements Traceability Matrix (RTM)

- Is a table that lists requirements, their various attributes, and the status of the requirements to ensure that all are addressed.
- the main purpose of an RTM is to maintain the linkage from the source of each requirement through its decomposition to implementation and validation

| Requirement No. | Name | Category | Source | Status |
|---|---|---|---|---|
| R32 | Laptop memory | Hardware | Project charter and corporate laptop specifications | Complete. Laptops ordered meet requirement by having 16 GB of memory. |

# Defining Scope

- **Key inputs:**
  - Project charter
  - Scope management plan
  - Requirements documentation
- **Project Scope Statement, include:**
  - A product scope description
  - Product user acceptance criteria
  - Detailed information on all project deliverables

# Project Charter

Project Title: Information Technology (IT) Upgrade Project

Project Start Date: March 4 Projected Finish Date: December 4

Key Schedule Milestones:

- Inventory update completed April 15
- Hardware and software acquired August 1
- Installation completed October 1
- Testing completed November 15

Budget Information: Budgeted $1,000,000 for hardware and software costs and $500,000 for labor costs.

Project Manager: Kim Nguyen, (310) 555–2784, knguyen@course.com

Project Objectives: Upgrade hardware and software for all employees (approximately 2,000) within nine months based on new corporate standards. See attached sheet describing the new standards. Upgrades may affect servers as well as associated network hardware and software.

Main Project Success Criteria: The hardware, software, and network upgrades must meet all written specifications, be thoroughly tested, and be completed in nine months. Employee work disruptions will be minimal.

# Project Charter

Approach:

- Update the IT inventory database to determine upgrade needs
- Develop detailed cost estimate for project and report to CIO
- Issue a request for quote to obtain hardware and software
- Use internal staff as much as possible for planning, analysis, and installation

ROLES AND RESPONSIBILITIES

| Name | Role | Responsibility |
|---|---|---|
| Walter Schmidt | CEO | Project sponsor, monitor project |
| Mike Zwack | CIO | Monitor project, provide staff |
| Kim Nguyen | Project Manager | Plan and execute project |
| Jeff Johnson | Director of IT Operations | Mentor Kim |
| Nancy Reynolds | VP, Human Resources | Provide staff, issue memo to all employees about project |
| Steve McCann | Director of Purchasing | Assist in purchasing hardware and software |

Sign-off: (Signatures of all the above stakeholders)

# Defining Project Scope

Project Charter:

Upgrades may affect servers ... (listed under Project Objectives)

Project Scope Statement, Version 1:

Servers: If additional servers are required to support this project, they must be compatible with existing servers. If it is more economical to enhance existing servers, a detailed description of enhancements must be submitted to the CIO for approval. See current server specifications provided in Attachment 6. The CEO must approve a detailed plan describing the servers and their location at least two weeks before installation.

Project Scope Statement, Version 2:

Servers: This project will require purchasing 10 new servers to support Web, network, database, application, and printing functions. Virtualization will be used to maximize efficiency. Detailed descriptions of the servers are provided in a product brochure in Attachment 8, along with a plan describing where they will be located.

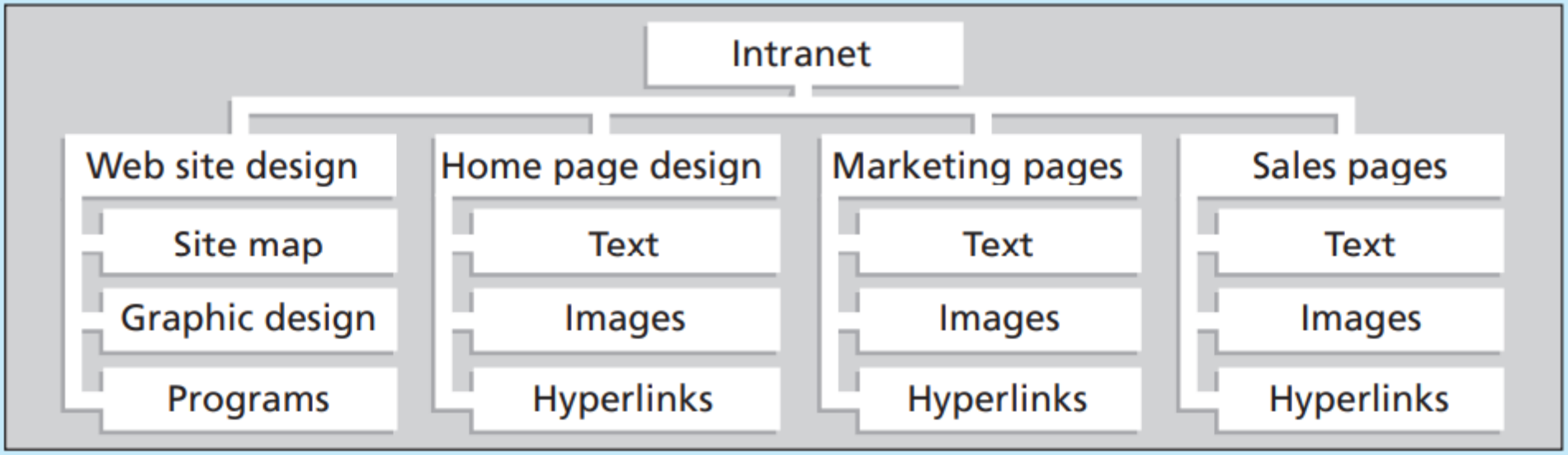
# Creating Work Breakdown Structure (WBS)

a deliverable-oriented grouping of the work involved in a project that defines the total scope of the project

**The main tool or technique :** **decomposition**

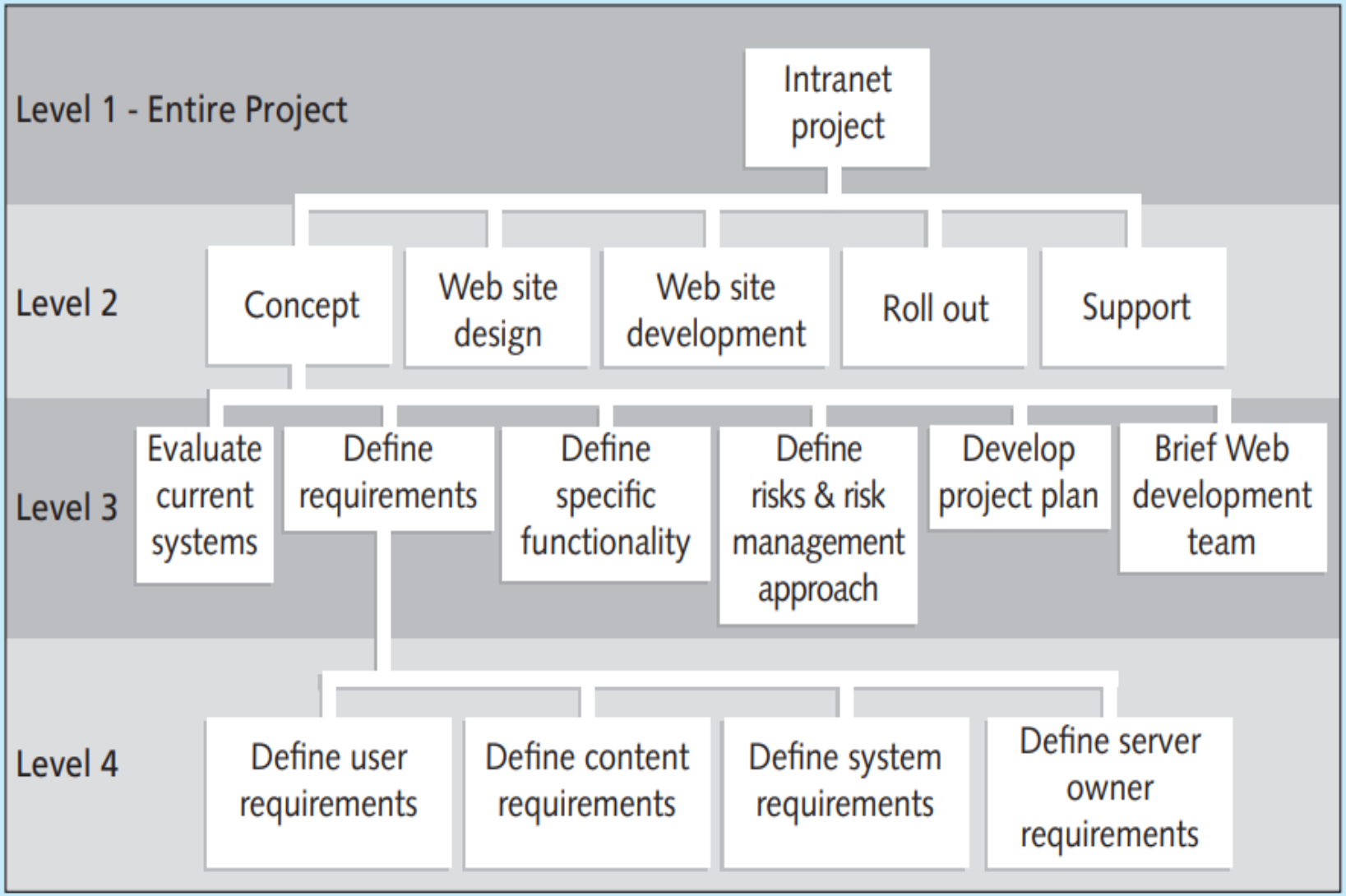
**The outputs :** the scope baseline and project documents updates

# Sample Intranet WBS Organized by Product




# Sample Intranet WBS Organized by Phase

Chart form →



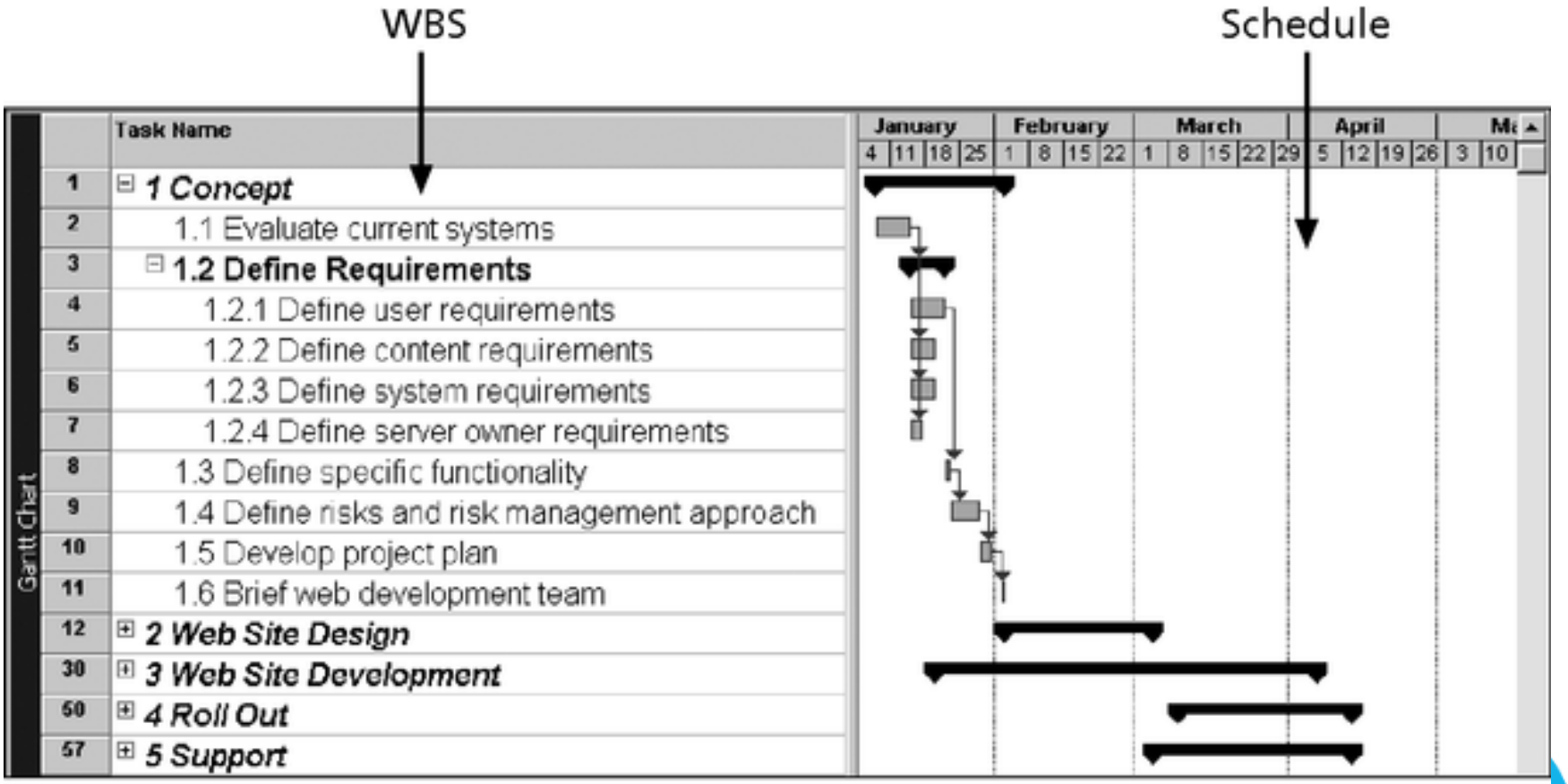
# Intranet WBS in Tabular Form

**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

# Intranet WBS and Gantt Chart in Microsoft Project



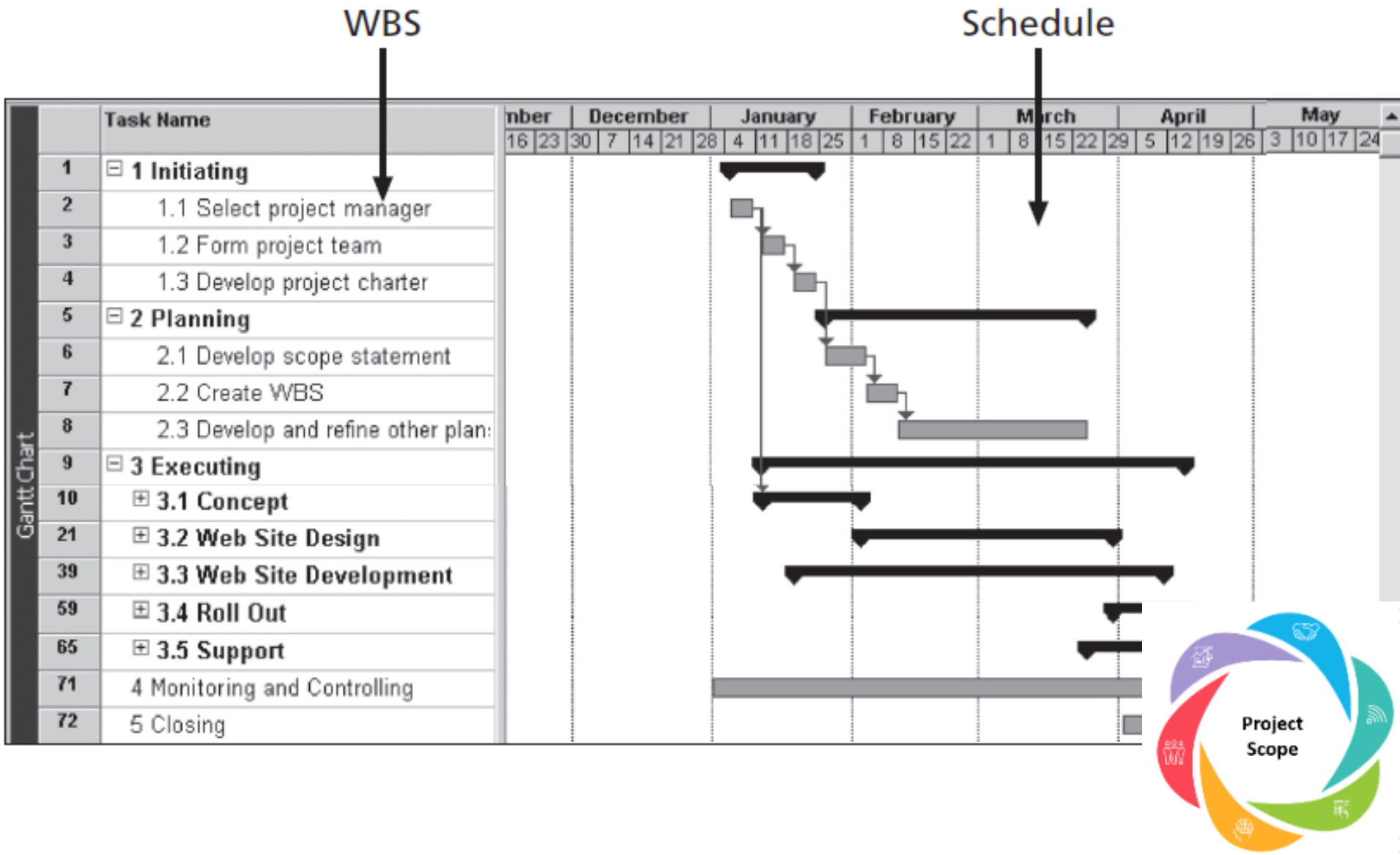

Project Scope

# Executing Tasks for JWD Consulting's WBS

3.0 Executing

- 3.1 Survey
- 3.2 User inputs
- 3.3 Intranet site content
  - 3.3.1 Templates and Tools
  - 3.3.2 Articles
  - 3.3.3 Links
  - 3.3.4 Ask the Expert
  - 3.3.5 User requests feature
- 3.4 Intranet site design
- 3.5 Intranet site construction
- 3.6 Site testing
- 3.7 Site promotion
- 3.8 Site roll out
- 3.9 Project benefits measurement

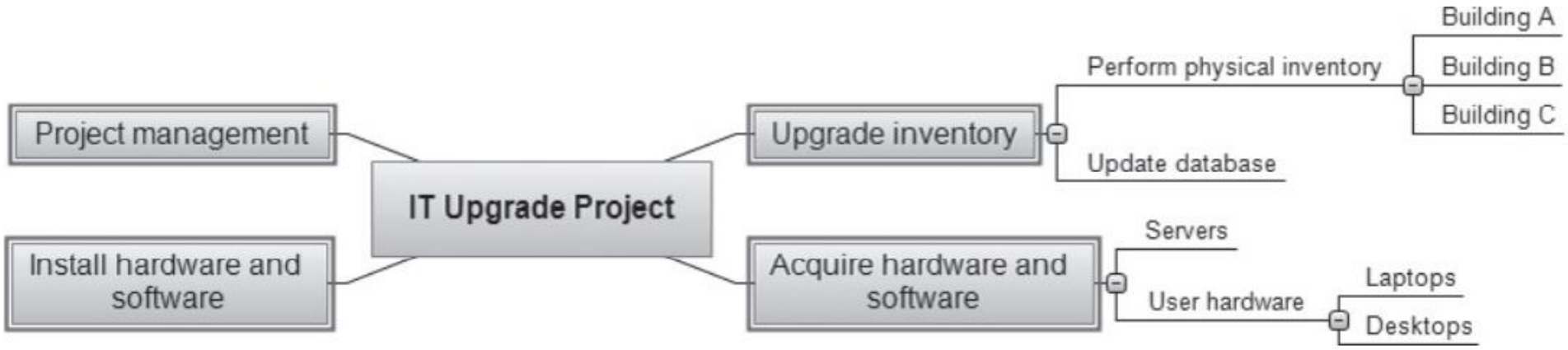
# Intranet project Gantt chart organized by project management process groups



# Approaches to Developing WBSs

1. The Guidelines
2. The analogy approach
3. The top-down approach
4. The bottom-up approach
5. Mind-mapping approach

# Sample Mind-Mapping Approach for Creating a WBS




Source: MatchWare's MindView 4 Business Edition

# The WBS Dictionary

A **WBS dictionary** is a document that describes detailed information about each WBS item

# WBS Dictionary

Project Title: Information Technology (IT) Upgrade Project

WBS Item Number: 2.2

WBS Item Name: Update Database

Description: The IT department maintains an online database of hardware and software on the corporate intranet. However, 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, Perform Physical Inventory, and must precede WBS Item Number 3.0, Acquire Hardware and Software.

# Advice for Creating a WBS and WBS Dictionary* (continued)

**A unit of work should appear at only one place in the WBS.**

**The work content of a WBS item is the sum of the WBS items below it.**

**A WBS item is the responsibility of only one person, even though many people might be working on it.**

**The WBS must be consistent with the way work actually will be performed**

**Project team members should be involved in developing the WBS**

**Each WBS item must be documented in a WBS dictionary**

**The WBS must be a flexible tool**

# Validating Scope

- **Scope validation** involves formal acceptance of the completed project deliverables.
- This acceptance is often achieved by a customer inspection and then sign-off on key deliverables
- The main inputs for scope validation:
  - The scope management plan,
  - scope baseline,
  - requirements documentation,
  - Requirements traceability matrix,
  - validated deliverables,
  - Work performance data

# 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
  - Manage changes when they occur
- **Variance** is the difference between planned and actual performance

# Best Practices for Avoiding Scope Problems

1. Keep the scope realistic: Don't make projects so large that they can't be completed; break large projects down into a series of smaller ones
2. Involve users in project scope management: Assign key users to the project team and give them ownership of requirements definition and scope verification
3. Use off-the-shelf hardware and software whenever possible: Many IT people enjoy using the latest and greatest technology, but business needs, not technology trends, must take priority
4. Follow good project management processes: As described in this chapter and others, there are well-defined processes for managing project scope and others aspects of projects