Project Scope Management

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CPIS 334

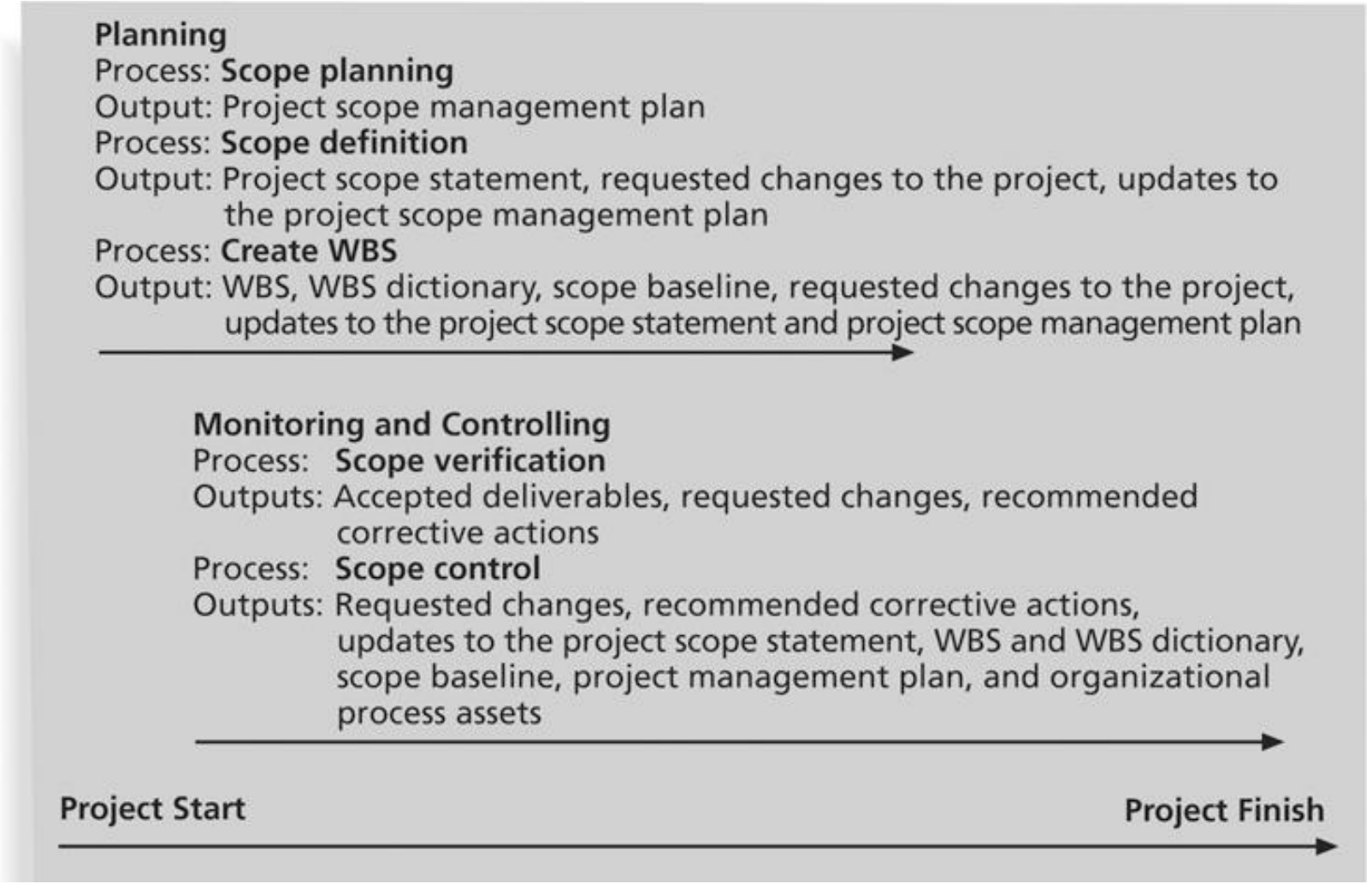
What is Project Scope Management?

- **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

- **Scope planning**: deciding how the scope will be defined, verified, and controlled
- **Scope definition**: reviewing the project charter and preliminary scope statement and adding more information as requirements are developed and change requests are approved
- **Creating the WBS**: subdividing the major project deliverables into smaller, more manageable components
- **Scope verification**: formalizing acceptance of the project scope
- **Scope control**: controlling changes to project scope

Project Scope Management Summary



Scope Planning and the Scope Management Plan

- The **scope management plan** is a document that includes descriptions of how the team will prepare the project scope statement, create the WBS, verify completion of the project deliverables, and control requests for changes to the project scope
- Key inputs include the project charter, preliminary scope statement, and project management plan

Sample Scope Management Plan

Project Name: Information Technology (IT) Upgrade Project

Introduction

The purpose of this document is to provide suggestions and guidance for preparing several important scope management documents related to this project.

Preparing the Scope Statement

The preliminary scope statement will provide the basis for preparing more detailed scope statements. The scope statement needs to be reviewed with key stakeholders, especially the project sponsor, potential suppliers, and users of the project deliverables. Follow corporate templates when available, and be sure to have expert input in defining the scope. Since the scope statement becomes more detailed and therefore longer as the project progresses, limit the length and complexity of the scope statement by placing details in attachments, such as product descriptions, specifications, corporate standards, etc. Each version of the scope statement must be clearly labeled and dated to ensure that everyone uses the most recent version. Changes and additions will be highlighted and communicated to the appropriate personnel. The scope statement will be available on the password-protected project Web site.

Creating the Work Breakdown Structure (WBS)

The project team will work together to create the WBS. The project sponsor and steering committee will review the WBS to ensure that all of the work required to complete the project is included in the WBS. The project team will review WBSs of similar projects, review the company's corporate guidelines for creating WBSs, and focus on determining all of the deliverables required for the project. The project team will determine the tasks required to complete each deliverable, which will be reviewed and agreed to by the project manager, sponsor, and steering committee. These tasks should include product- and process-related tasks. A general guideline to follow for determining the level of detail is that the lowest level of the WBS should normally take no longer than two weeks to complete. The WBS can be revised as needed, and the sponsor and steering committee must approve these revisions.

Verifying Completion of Project Deliverables

The project manager will work with the sponsor and steering committee to develop a process for verifying successful completion of project deliverables. In general, the project sponsor will be responsible for verifying the completion of major deliverables. The contract administrator will also be involved in verifying successful completion of deliverables received from outside sources. Contracts will include clauses describing the scope verification process.

Managing Requests for Changes to Project Scope

All requests for changes to project scope that may have a significant effect on meetings and project requirements must follow the formal change control procedures specified in Attachment 1. A change request form will be completed and reviewed by the designated group. It is crucial to follow these procedures to prevent scope creep.

Sample Project Charter

Project Title: Information Technology (IT) Upgrade Project

Project Start Date: March 4, 2008 **Projected Finish Date:** December 4, 2008

Project Manager: Kim Nguyen, 691-2784, *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. Budgeted $1,000,000 for hardware and software costs and $500,000 for labor costs.

Approach:

- Update the information technology 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 Information Technology 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)

Walter Schmidt *Steve McCann*

Mike Zwack *Nancy Reynolds*

Kim Nguyen *Jeff Johnson*

Comments: (Handwritten or typed comments from above stakeholders, if applicable)

"This project must be done within ten months at the absolute latest." Mike Zwack, CIO

"We are assuming that adequate staff will be available and committed to supporting this project. Some work must be done after hours to avoid work disruptions, and overtime will be provided." Jeff Johnson and Kim Nguyen, Information Technology department

Scope Definition and the Project Scope Statement

- The preliminary scope statement, project charter, organizational process assets, and approved change requests provide a basis for creating the project scope statement
- As time progresses, the scope of a project should become more clear and specific

Further Defining Project Scope

Project Charter:

Upgrades may affect servers…

Preliminary Scope Statement:

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.

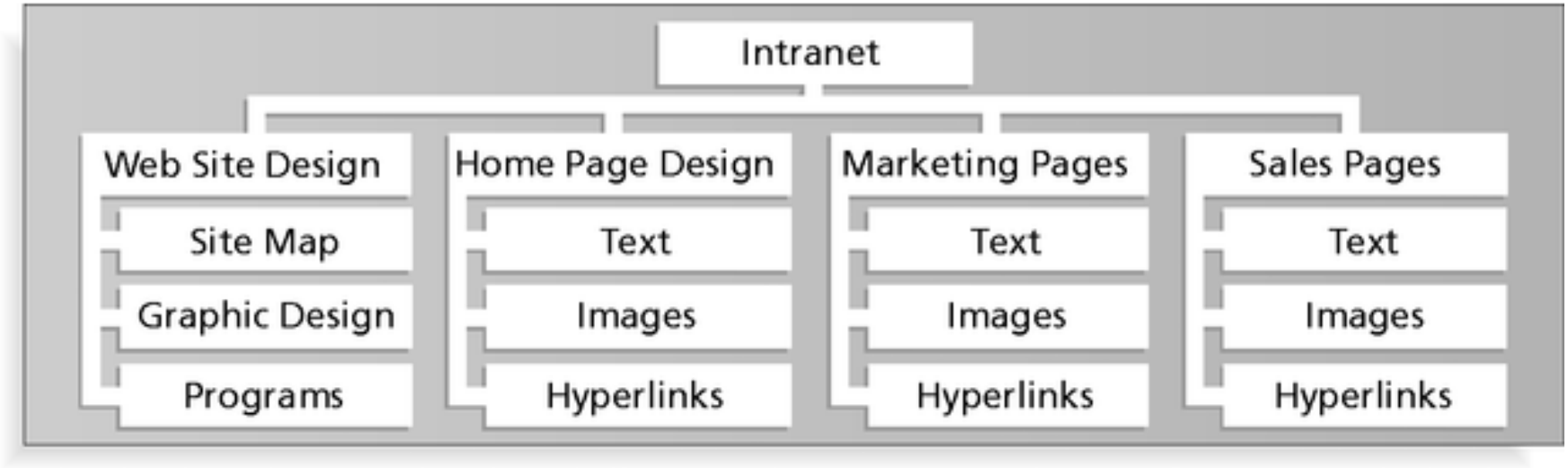
Project Scope Statement, Version 1:

Servers: This project will require purchasing 10 new servers to support Web, network, database, application, and printing functions. Two of each type of server will be purchased and dedicated to this project. Detailed descriptions of the servers are provided in a product brochure in Appendix 8 along with a plan describing where they will be located.

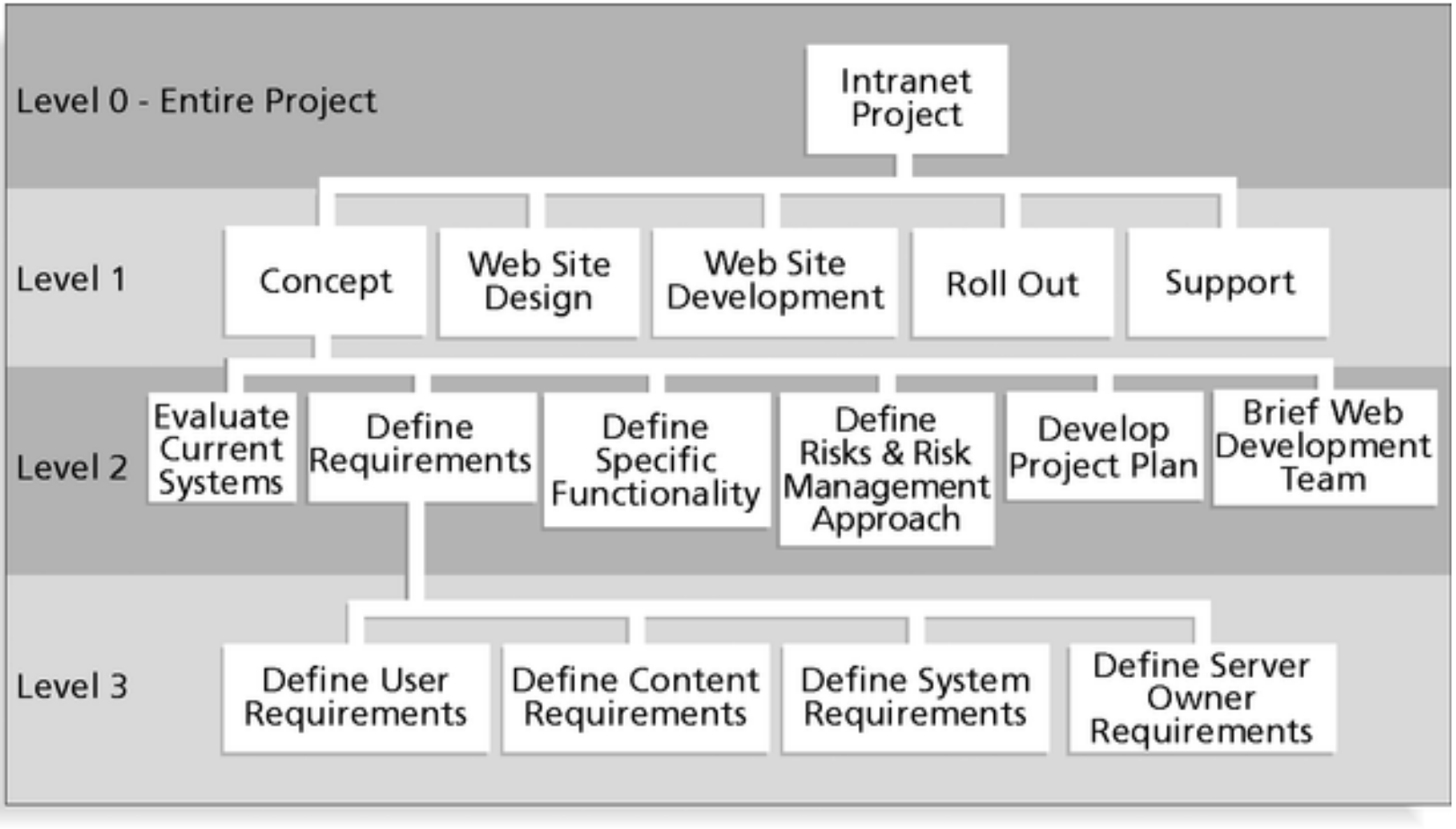
Creating the Work Breakdown Structure (WBS)

- 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
- A **work package** is a task at the lowest level of the WBS

Sample Intranet WBS Organized by Product



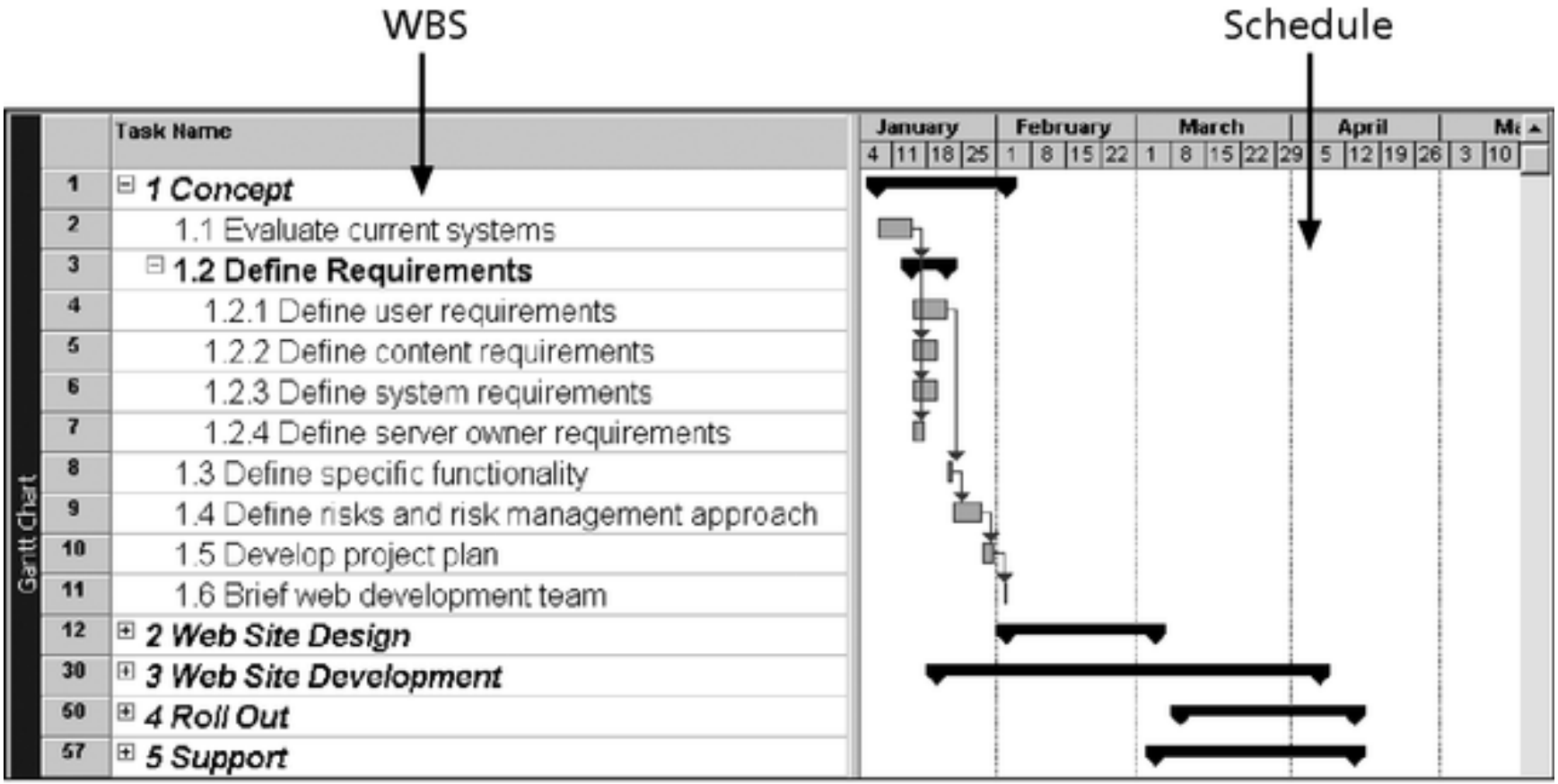
Sample Intranet WBS Organized by Phase



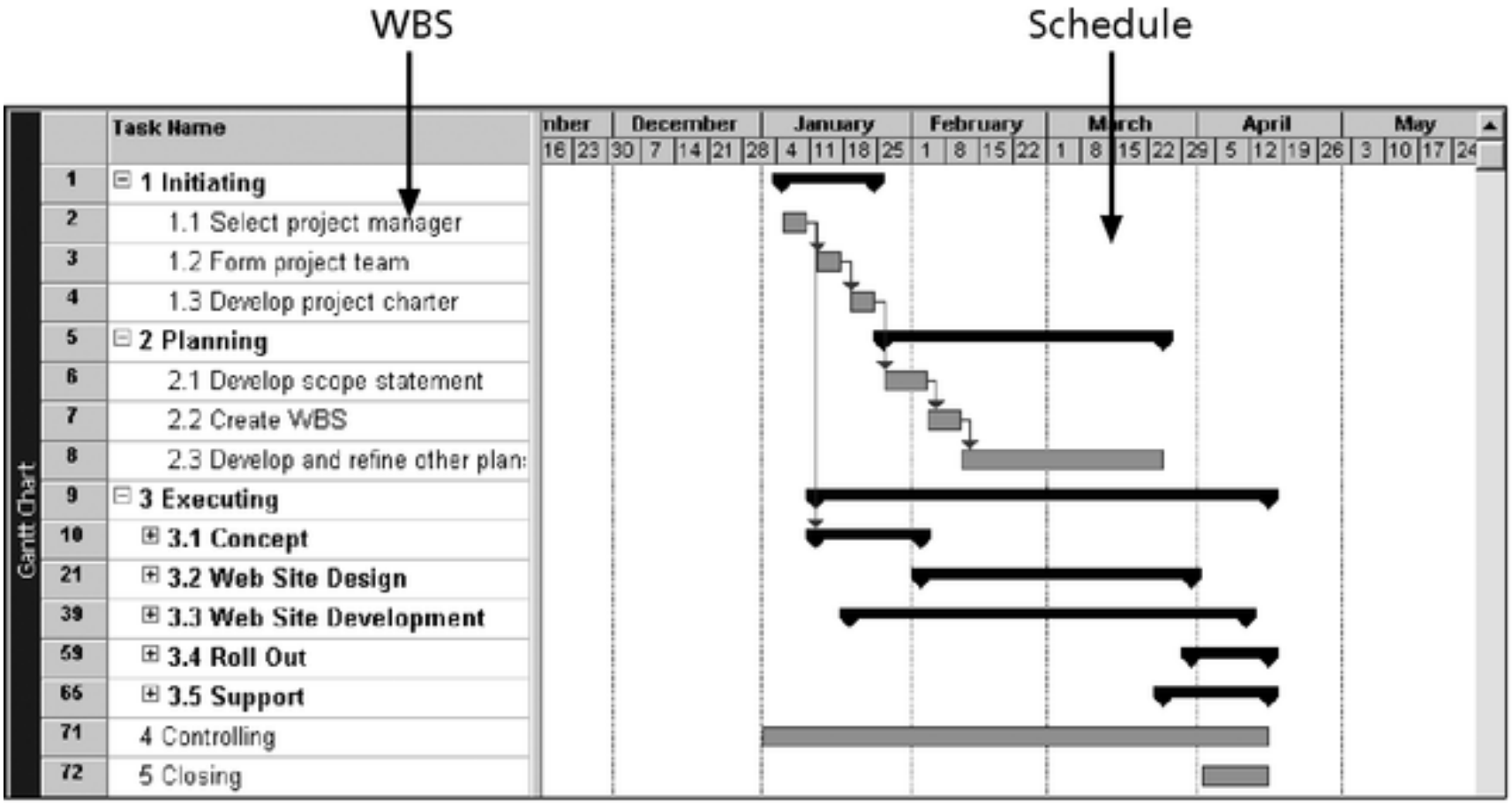
Intranet WBS in Tabular Form

- 1.0 Concept
  - 1.1 Evaluate current systems
  - 1.2 Define Requirements
    - 1.2.1 Define user requirements
    - 1.2.2 Define content requirements
    - 1.2.3 Define system requirements
    - 1.2.4 Define server owner requirements
  - 1.3 Define specific functionality
  - 1.4 Define risks and risk management approach
  - 1.5 Develop project plan
  - 1.6 Brief Web development team
- 2.0 Web Site Design
- 3.0 Web Site Development
- 4.0 Roll Out
- 5.0 Support

Intranet WBS and Gantt Chart in Microsoft Project



Intranet Gantt Chart Organized by Project Management Process Groups



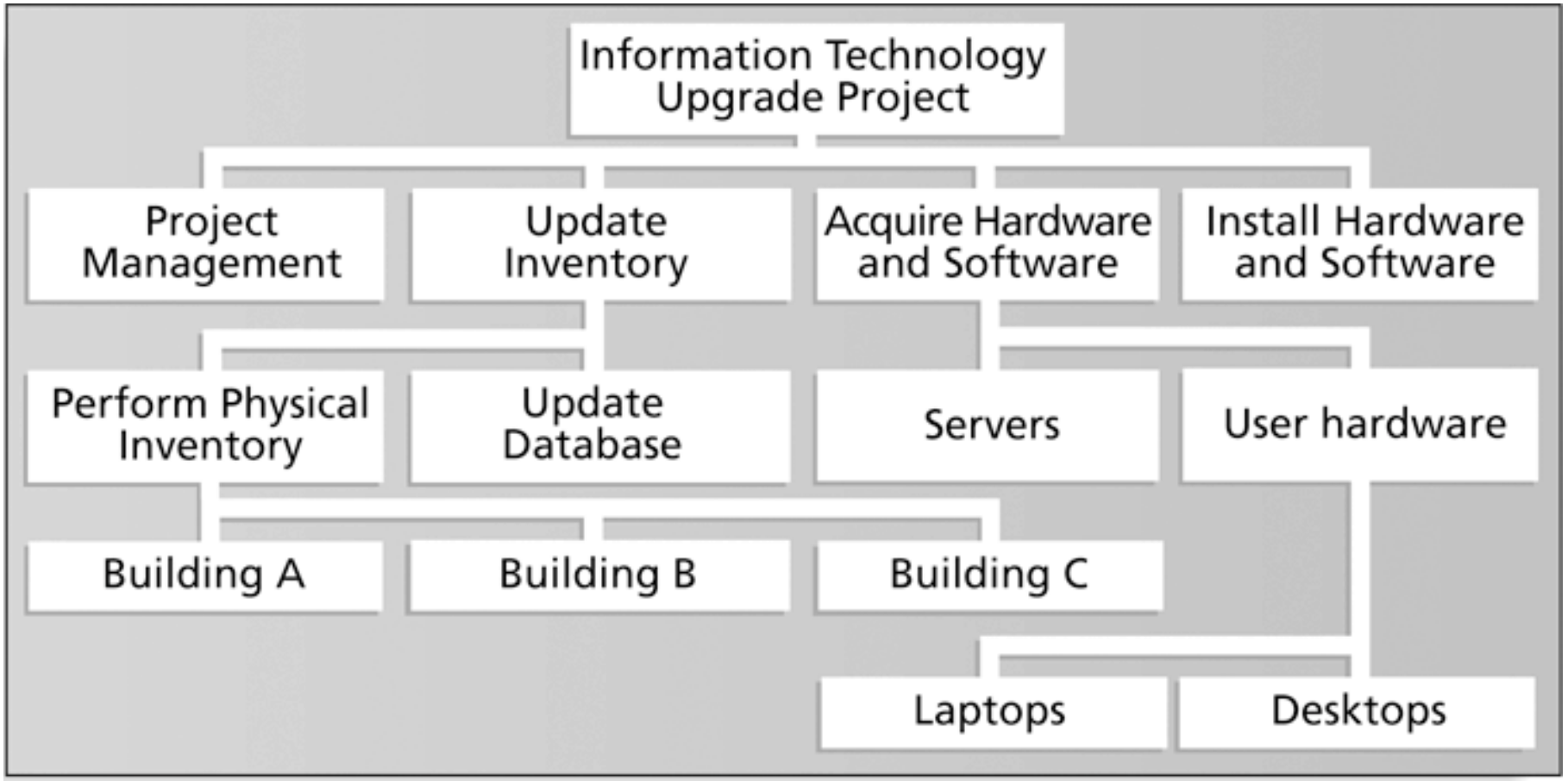
Executing Tasks for JWD Consulting WBS

- 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

Approaches to Developing WBSs

- Using guidelines: some organizations, like the DOD, 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

Resulting WBS in Chart Form



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
- The approved project scope statement and its WBS and WBS dictionary form the **scope baseline**, which is used to measure performance in meeting project scope goals

Scope Verification

- 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 verification** involves formal acceptance of the completed project scope by the stakeholders
- Acceptance is often achieved by a customer inspection and then sign-off on key deliverables

Scope Control

- **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

Suggestions for Improving User Input

- Develop a good project selection process and insist that sponsors are from the user organization
- Have users on the project team in important roles
- Have regular meetings with defined agendas, and have users sign off on key deliverables presented at meetings
- Deliver something to users and sponsors on a regular basis
- Don’t promise to deliver when you know you can’t
- Co-locate users with developers

Suggestions for Reducing Incomplete and Changing Requirements

- Develop and follow a requirements management process
- Use techniques such as prototyping, use case modeling, and JAD to get more user involvement
- 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 (continued)

- 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
- Allocate resources specifically for handling change requests/enhancements like NWA did with ResNet

Using Software to Assist in Project Scope Management

- Word-processing software helps create several scope-related documents
- Spreadsheets help to perform financial calculations and 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
- Specialized software is available to assist in project scope management

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:
  - Scope planning
  - Scope definition
  - Creating the WBS
  - Scope verification
  - Scope control