



# Unit 6 – Managing a Successful Computing Project

## Lecture 2: Project Scope Management

# 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 by key project stakeholders
- **Scope control:** controlling changes to project scope which impact project cost and time goals

# Project Scope Management Summary

## Planning

Process: **Scope planning**

Output: Project scope management plan

Process: **Scope definition**

Output: Project scope statement, requested changes to the project, updates to the project scope management plan

Process: **Create WBS**

Output: WBS, WBS dictionary, scope baseline, requested changes to the project, updates to the project scope statement and project scope management plan

## Monitoring and Controlling

Process: **Scope verification**

Outputs: Accepted deliverables, requested changes, recommended corrective actions

Process: **Scope control**

Outputs: Requested changes, recommended corrective actions, updates to the project scope statement, WBS and WBS dictionary, scope baseline, project management plan, and organizational process assets

Project Start

Project Finish

# 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
- It should be reviewed with the project sponsor to make sure the approach meets expectations





# Scope Definition and the Project Scope Statement

The project team develops a preliminary scope statement in initiating a project as part of the project integration management knowledge area

The preliminary scope statement, project charter, organizational process assets, and approved change requests provide a basis for creating the more specific **project scope statement**

# Scope Definition and the Project Scope Statement

Project scope statements should contain at a minimum:

- Description of the project – overall objectives, justification

- Detailed descriptions of all project deliverables

- Characteristics and requirements of products and services produced as part of the project

Other helpful information:

- Project success criteria

- Project boundaries

- Product acceptance criteria

- Schedule milestones

- Order of magnitude costs estimates...



# Further Defining Project Scope

## **Project Charter:**

Upgrades may affect servers...

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## **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.

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## **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.

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# 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

# Sample WBS Dictionary Entry

**Table 5-6: Sample WBS Dictionary Entry**

## **WBS Dictionary Entry**

**March 20, 2008**

**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 out 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.



# Creating a WBS and WBS Dictionary \*

Project team members should be involved in developing the WBS to ensure consistency and buy-in

Each WBS item must be documented in a WBS dictionary to ensure accurate understanding of the scope of work included and not included in that item

The WBS must be a flexible tool to accommodate inevitable changes while properly maintaining control of the work content in the project according to the scope statement



# 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

Tools for performing scope control include a change control system and configuration management

**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 all requirements in writing, keep them current and readily available

Create a requirements management database for documenting and controlling



# Suggestions for Reducing Incomplete and Changing Requirements

Provide adequate testing and conduct testing throughout the project life cycle

Review changes from a systems perspective

Project scope changes must include associated cost and schedule changes

Focus on approved scope goals and don't get side tracked

Emphasize completion dates to help focus on what's most important

What should we drop in order to add something new?

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