

Chapter 5

# Scope Management

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## Definition of Scope Management

- ❖ It includes the processes required to ensure that the project includes all the work and only the work required to complete the project successfully.
- ❖ Its primarily concerned with controlling what is and what is not in the project.

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## Scope Management means:

- ❖ Processes required to ensure that the project include all the work required, and only the work required, to complete the project successfully.
- ❖ Constantly checking to make sure you are completing all the work.
- ❖ Saying no to additional work not included in the project or not part of the project charter
- ❖ Preventing extra work or gold plating

***You should give the customer what they asked for, no more and no less giving any extras is a waste of time and adds no benefit to the project***

## Product Scope Vs. Project Scope

- ❖ ***Product Scope***: the features and functions that are to be included in a product or a service.
- ❖ ***Project Scope***: the work that must be done in order to deliver a product with the specified features and functions.
- ❖ Successful completion of ***Product Scope*** is measured against the ***Product Requirement***.
- ❖ ***Project Scope*** completion is measured against the ***Project Plan***.

## Processes

- ❖ **Collect Requirements:** Collecting the requirements of the project using appropriate techniques and developing requirements management plan
- ❖ **Define Scope:** developing a detailed project scope statement as the basis for future project decisions.
- ❖ **Create WBS:** subdividing the major project deliverables and project work into smaller, more manageable components.
- ❖ **Verify Scope:** formalizing acceptance of the completed project scope.
- ❖ **Control Scope:** controlling changes to the project scope.

## Project Charter

The PMBOK says that a contract may serve as a project charter for projects under contract, although this may not be as clear or effective as a separate project charter.

## Determining Project Metrics

Among the outputs of scope planning is the scope statement. The scope statement describes the *product deliverables* and the *project objectives*.

- **Product Deliverables:** A list of features that the product or service will have. Delivering these features makes the project successful.
- **Project Objectives:** Quantifiable criteria (metrics) to meet for the project to be considered successful. These criteria must include performance metrics for judging project success such as cost, schedule and quality.

***NB: Metrics may be broadly defined in the preliminary phase of the project but as the project progress, metrics become more precise. This concept is called Progressive Elaboration.***

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## Metrics to Track

- Performance: Basic operating characteristics
- Features: The basic characteristics and functions that affect the marketability of a product
- Reliability: The probability of how the system operates over a period of time
- Conformance: The degree of compliance with established requirements. This term also relates to quality
- Durability: The useful product life span before replacement is needed.
- Serviceability: The ease of repairs, updates and maintenance
- Aesthetics: Product qualities about the look, feel, sound, smell or taste

## Project Charter

- Sample -

- ❖ Project Title: **Information Technology (IT) Upgrade Project**
- ❖ Project Start Date: **March 4, 1999**
- ❖ Projected Finish Date: **December 4, 1999**
- ❖ Project Manager: **Kim Nguyen, 691-2784, [knguyen@abc.com](mailto:knguyen@abc.com)**
- ❖ Project Objectives: **Upgrade hardware and software for all employees (approximately 2,000) within 9 months based on new corporate standards. See attached sheet describing the new standards. Upgrades may affect servers and midrange computers as well as network hardware and software.**
- ❖ Budgeted **\$1,000,000** for hardware and software costs and **\$500,000** for labor costs.
- ❖ Approach:
  - ❖ Update the IT inventory database to determine upgrade needs
  - ❖ Develop detailed cost estimate for project and report to CIO
  - ❖ Issue a request for quotes to obtain hardware and software
  - ❖ Use internal staff as much as possible to do the planning, analysis, and installation

## Delphi technique

- ❖ The Delphi technique is a way to reach a consensus of experts.
- ❖ Experts participate in this technique anonymously.
- ❖ A facilitator uses a questionnaire to solicit ideas about the project scope.
- ❖ The responses are summarized and are then re-circulated to the experts for further comment.
- ❖ Consensus may be reached in a few rounds of this process.
- ❖ The Delphi technique helps reduce bias in the data and keeps any person from having undue influence on the outcome.

## *Scope management plan*

- ❖ The project scope management plan provides guidance on how project scope will be defined, documented, verified, managed and controlled by the project management team.
- ❖ The components of a project scope management plan include:
  - ✓ A process to prepare a detailed project scope statement based upon the requirements collected
  - ✓ A process that enables the creation of the WBS from the detailed project scope statement, and establishes how the WBS will be maintained and approved
  - ✓ A process that specifies how formal verification and acceptance of the completed project deliverables will be obtained.
  - ✓ A process to control how requests for changes to the detailed project scope statement will be processed.
- ❖ This process is directly linked to the integrated change control process

## *Scope Definition Tools & Techniques*

### ❖ **Product Analysis**

Each application area has one or more generally accepted methods for translating project objectives into tangible deliverables and requirements. Product analysis includes techniques such as product breakdown, systems analysis, systems engineering, value engineering, value analysis, and functional analysis.

### ❖ **Alternatives Identification**

Identifying alternatives is a technique used to generate different approaches to execute and perform the work of the project. A variety of general management techniques is often used here, the most common of which are brainstorming and lateral thinking.

## *Scope Definition Tools & Techniques (cont'd)*

### ❖ **Expert Judgment**

### ❖ **Stakeholder Analysis**

Stakeholder analysis identifies the influence and interests of the various stakeholders and documents their needs, wants, and expectations. The analysis then selects, prioritizes, and quantifies the needs, wants, and expectations to create requirements. Unquantifiable expectations, such as customer satisfaction, are subjective and entail a high risk of being successfully accomplished. Stakeholders' interests may be positively or negatively affected by execution or completion of the project and they may also exert influence over the project and its deliverables.

## *Scope statement*

- ❖ Provides a basis for a common understanding of the scope among the stakeholders.
- ❖ Project and Scope Objectives
- ❖ Project Boundaries
- ❖ Project Deliverables
- ❖ Product Acceptance Criteria
- ❖ Project Constraints
- ❖ Project Assumptions

## Constraints

- ❖ They are factors that limit the team's options such as:
  - ✓ Resources
  - ✓ Budget
  - ✓ Schedule
  - ✓ Scope.

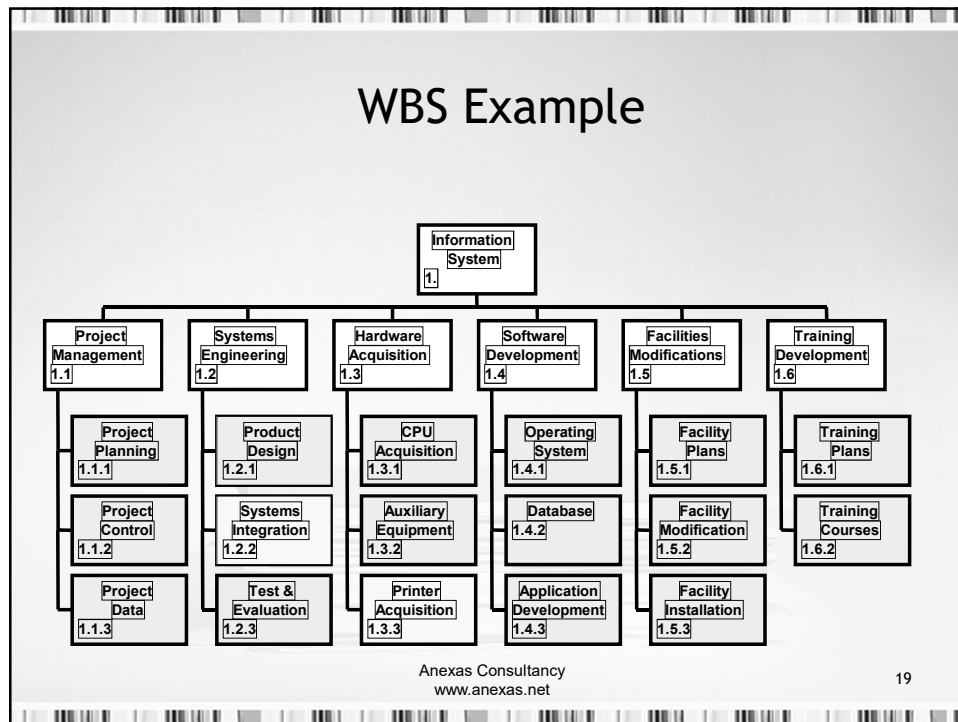


## Decomposition

- ❖ Decomposition is the subdivision of project deliverables into smaller, more manageable components until the deliverables are defined to the work package level. The work package level is the point at which cost and schedule can be reliably estimated, and will support managing activities throughout the project life cycle.
- ❖ The decomposition is useful to:
  - ✓ Subdivide the project into more manageable components
  - ✓ Improve the accuracy of cost, time and resources estimates.
  - ✓ Provide a baseline
  - ✓ Assign responsibilities.

## Work Breakdown Structure - WBS

It is a deliverable oriented grouping of project components that organizes and defines the total scope of the project.



## Work Breakdown Structure - WBS

- ❖ **Code of accounts** - Uniquely identifies each element of the WBS
- ❖ **Work packages** - A deliverable at the lowest level of the WBS
- ❖ **WBS dictionary** - Includes work-package descriptions

## Verify Scope

- ❖ The process of **formalizing acceptance** of the project scope by the stakeholders ”
- ❖ ***Verify Scope** differs from quality control in that it is primarily concerned with **acceptance** of the work results while **quality control** is primarily concerned with the **correctness** of the work results.*

## Inspection

- ❖ Inspection includes activities such as measuring, examining, and verifying to determine whether results meet stakeholder needs and expectations.
- ❖ Inspections are variously called reviews, product reviews, audits and walkthroughs; in some application areas, these different terms have narrow and specific meanings.

## Change control system

- ❖ A scope change control methodology, documented in the scope management plan, defines the procedures by which the project scope can be changed.
- ❖ The plan includes
  - ❖ the documentation,
  - ❖ tracking systems,
  - ❖ approval levels necessary for authorizing changes

## Configuration management system

Formal configuration management systems provide procedures for providing the status of the deliverables and that proposed changes are thoroughly considered and documented before approving a change to the project.

## Some Definitions

- ❖ **Management by objectives (MBO):**  
A management philosophy that says an organization should be managed by objectives.

## Question 1

- ❖ **A work breakdown structure numbering system allows project staff to:**
  - a. Systematically estimate costs of work breakdown structure elements.
  - b. Provide project justification.
  - c. Identify the level at which individual elements are found.
  - d. Use in project management software.

## Answer C

- The numbering system allows you to quickly identify the level in the work breakdown structure where the specific element is found. It also helps to locate the element in the WBS dictionary.

## Question 2

- ❖ **The work breakdown structure can BEST be thought of as an effective aid for \_\_\_\_\_ communications.**
  - a. Team
  - b. Project manager
  - c. Customer
  - d. stakeholder

## Answer D

- The term stakeholder encompasses all the other choices. In this case, it is the best answer since the WBS can be used (but does not need to be used) as a communications tools for all stakeholders to “see” what is included in the project.

## Question 3

❖ Which of the following is a KEY output of Verify Scope?

- a. More complete scope management plan
- b. Customer acceptance of project deliverables
- c. Improved schedule estimates
- d. An improved project management information system

## Answer B

- The output of scope verification is customer acceptance of project deliverables. The other choices all happen during project planning, well before the time that scope verification takes place.

## Question 4

- ❖ **During project execution, a team member comes to the project manager because he is not sure of what work he needs to accomplish on the project. Which of the following documents contain detailed descriptions of work packages?**
  - a. A work breakdown structure (WBS) dictionary
  - b. Activity list
  - c. Preliminary project scope statement
  - d. Project scope management plan



## Answer A

- Activity lists (choice B) may list the work package they relate to, but they do not contain detailed descriptions of work packages. The preliminary project scope statement (choice C) may contain project scope, but does not describe the work a team member is assigned. The project scope management plan (choice D) describes how scope will be planned, managed and controlled. It does not include a description of each work package. The WBS dictionary defines each element in the WBS. Therefore, descriptions of the work packages are in the WBS dictionary.

## Question 5

- ❖ **During what part of the project management process is the project scope statement created?**
  - a. Initiating
  - b. Planning
  - c. Executing
  - d. Monitoring and controlling

## Answer B

- Scope statement is created in planning phase