



Everyone's Smart
University

Project Scope Management

Chapter 7

Presented by/ Dr. Walaa Mohamed

PMG101

Foundations of Project Management

Did your project ask for this?



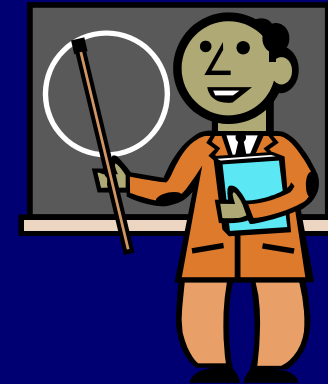
...And end up building this instead?



Why does it happen?

Project scope management

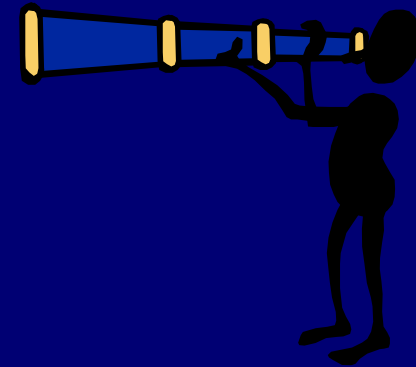
- Definitions of scope management
- Why scope management is important
- Elements of scope management
- 'Concept development'
- 'Detailed definition'
- WBS
- Change control



Project scope management

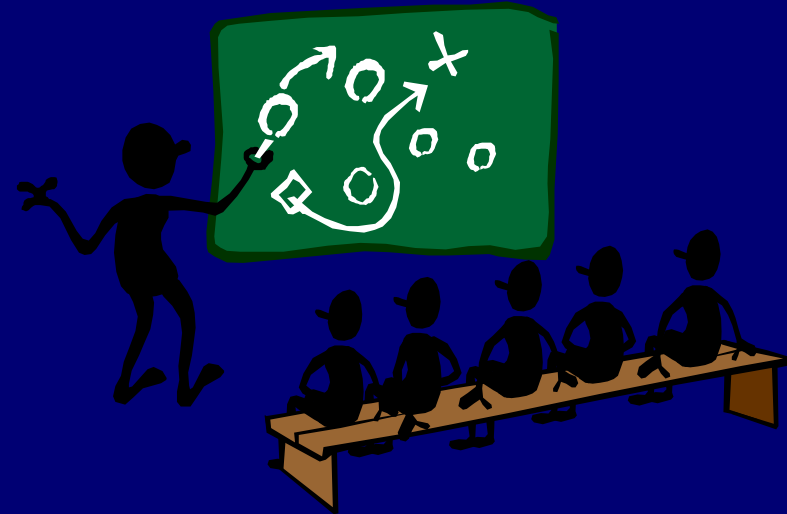
“Defining and controlling **what is** and **what is not** included in the project”.

“Project scope helps transform the idea of the project into a working concept”.



A change management perspective

- Why do we need to manage scope?
- Changes in the scope of a project affect all the other project management functions and are therefore important to all parties involved



Changes in scope may affect:

- the schedule (more work or less work)
- the cost (more or less resources needed, spec changes)
- the quality (changes may be unacceptable to customer)
- the human resources (more or less staff)
- Communication management (need for simple v sophisticated system)
- the risk exposure (might increase or decrease)



Scope Management cuts across all Phases of the Project Life cycle

Project Initiation	Project Planning	Project execution and control	Project closing
Scope identification Team set up Project definition	WBS OBS Scheduling	Network diagrams Reporting	Hand over Commission

← Project life cycle →

Scope Management comprises:

- project initiation
 - scope planning
 - scope definition
 - scope verification
 - scope change control
- Concept development**
- Getting the detail sorted**

Let's look at what each of these terms means.....

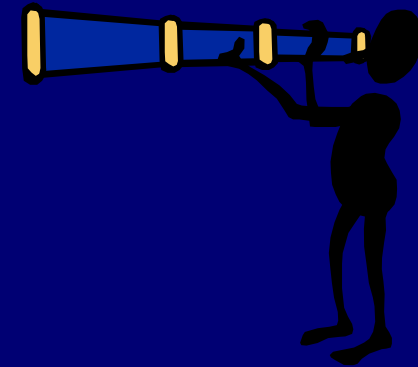


Scope Management

Project initiation	committing the organization to begin the next phase of the project
scope planning	developing a written scope statement as the basis for future project decisions
scope definition	– subdividing the major project deliverables into smaller more manageable deliverables
scope verification	formalizing acceptance of the project scope
scope change control	controlling changes to the project scope

Project scope management

- Initiation and planning are about developing the concept of the project
- Entails يستلزم the identifying and defining the projects objectives and goals, as provided by the project sponsor or owner



Project Initiation

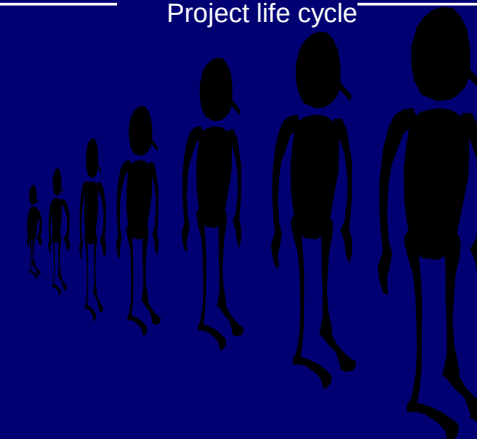
Project initiation	committing the organization to begin the next phase of the project
scope planning	developing a written scope statement as the basis for future project decisions
scope definition	subdividing the major project deliverables into smaller more manageable deliverables
scope verification	formalising acceptance of the project scope
scope change control	controlling changes to the project scope

Project Initiation – step 1

- One of the most important parts of project initiation is to **define the project**
- Determines the time, cost, quality and resource requirements
- Determines the scope of the project (what's in/out)
- Usually only happens after feasibility study completed
- Typical *inputs* to project initiation:
 - the product/service description
 - the strategic plan of the organization
 - relevant historical information about similar projects

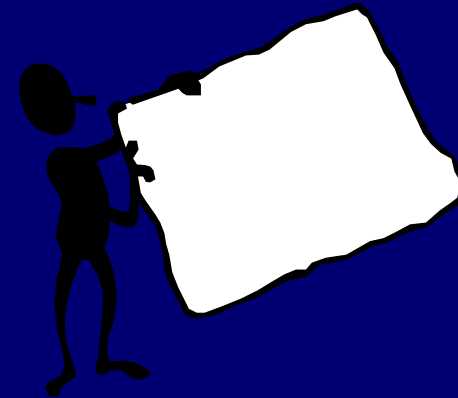
Project Initiation	Project Planning	Project execution and control	Project closing
Scope identification Team set up Project definition	WBS OBS Scheduling	Network diagrams Reporting	Hand over Commission

← Project life cycle →



Project Initiation – step 2

- Once the project definition has been completed and the scope identified, **documenting and getting approval** of the scope is the next stage



Tools and techniques

Tools and techniques for **project initiation** can be in the form of decision models such as:

- a) benefit measurement methods
(comparative, scoring models)
- b) constrained optimization methods
(mathematical models)
- c) expert judgement

Outputs from Project Initiation

The *outputs* from project initiation are:

- the project charter
- Final product description
- list of assumptions and constraints
- the appointment of a project manager



What is a Project Charter?

- Document that formally recognizes the project. Includes:
 - references to other relevant documents
 - problem/ business needs statement
 - description of the project to be undertaken
 - project objectives
 - constraints and assumptions

Creating a Project Charter



A project charter is a document that formally recognizes the existence of a project and provides a summary of the project objectives and management. It authorizes the project manager to use organizational resources to complete the project.

Contents of a Project Charter

- ❧ Contents of a project charter will vary to meet individual project needs. Let's look at the typical information that is included in a project charter;
- ❧ Project title and date of authorization
- ❧ Project start date

Contents of a Project Charter



- ❧ Project finish date
- ❧ Other schedule information (if available)
- ❧ Budget information
- ❧ Project manager (name and contact information)
- ❧ Project objectives (brief description of what the main objectives are for a project)
- ❧ Approach (description of how the project objectives are met, list of important assumptions, and often references to related documents).
- ❧ Roles and responsibilities (names, roles, positions and contact information).
- ❧ Sign-off
- ❧ Comments (allows stakeholders to document important information they want to add)

Project Charter Example?



Project Charter

This **Project Charter** template will help you to define the scope of your project.

Writing the *Project Charter* is typically one of the most challenging steps in the Project Life Cycle, as it defines the parameters within which the project must be delivered.

Its sets out the project vision, objectives, scope and implementation, thereby giving the team clear boundaries within which the project must be delivered.

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:

- n Update the information technology inventory database to determine upgrade needs
- n Develop detailed cost estimate for project and report to CIO
- n Issue a request for quote to obtain hardware and software
- n 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

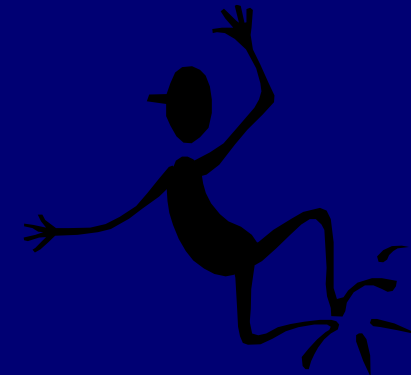
Scope Planning

Project initiation	committing the organisation to begin the next phase of the project
scope planning	developing a written scope statement as the basis for future project decisions
scope definition	– subdividing the major project deliverables into smaller more manageable deliverables
scope verification	formalising acceptance of the project scope
scope change control	controlling changes to the project scope

Scope Planning

Inputs to this stage are the outputs from the project initiation process

- the project charter
- the product description
- list of assumptions and constraints
- the appointment of a project manager



Tools & Techniques for Scope Planning

Product analysis: developing a better understanding of the product you want at the end of the project.

- It involves examining product features, costs, availability, quality, appearance and other aspects. Product analysis is conducted by potential buyers, by product managers attempting to understand competitors and by third party reviewers.
- It can also be used as part of product design to convert a high-level product description into project deliverables and requirements. It involves all facts of the product, its purpose, its operation, and its characteristics.

Tools & Techniques for Scope Planning

Alternatives identification – generating alternative ways of getting the solution.

Cost-benefit analysis – estimating tangible and intangible costs of the various alternatives.

Expert judgement – to assess the inputs.

Outputs from Scope Planning

2 main outputs

- Scope statement
- Scope management plan

Definition: *Project Scope Statement*

The narrative description of the project scope, including major deliverables, project objectives, project assumptions, project constraints, and a statement of work, that provides a documented basis for making future project decisions and for confirming or developing a common understanding of project scope among the stakeholders.

Scope Management

There will always be change in a project,
and factors that you have no control over.

*In a dynamic world, and a dynamic
industry...*

*...**Change** is unavoidable.*

Scope Management

**Change Control is a huge responsibility of
a Project Manager.**

**You must control changes to the project's
Schedule, Scope, and the impact on its
Resources**

Scope Management

Scope Creep is the tendency for the requirements of a project to grow past the initial Scope Statement and Verification

According to the Standish Group, it is the ***third*** most common Project Problem!

Scope Management

Scope Creep is one of the reasons why you must:

- spend the necessary time in the definition of the project's scope
- verify the scope with the stakeholders.

Outputs from Scope Planning

A scope statement includes/refers to:

Project justification – the business need

Project product – the product that the project is expected to produce

Project deliverables – a list of the sub products at each of the stages in the project life cycle

Project objectives – quantifiable criteria that must be met for the project to be considered successful – cost, quality, delivery as a minimum

In many companies this is part of the project charter

Deliverables and milestones

Project deliverables: a list of the sub products at each of the stages in the project life cycle.

Milestones often coincide with the start or completion of project phases (such as initiation, planning, execution, and closure). A project phase may take weeks or months to complete, involving multiple tasks and team members; a milestone is a zero-time “checkmark” of major progress that is important to acknowledge and report on.

A project deliverable is a product or result, whereas a milestone is a moment in time. Deliverables are sometimes evidence of the completion of a milestone.

Example about difference between deliverables, milestones and tasks

Example: For a rebranding project, the initiation phase will cover many tasks, such as focus groups to gather ideas on the new branding and creative brainstorming sessions. A milestone at the end of the initiation phase would mark the team's readiness to move to the planning phase.

Deliverables for the rebranding project could include the updated style guide PDF and associated logo files. The completion of these projects is worth noting (and even celebrating!), so the marketing manager could add a milestone denoting that achievement.

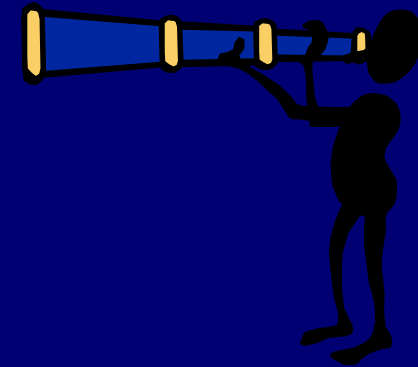
Outputs from Scope Planning

- Scope management plan – part of the overall project plan
 - Describes how the scope will be managed and how scope changes will be integrated into the project
 - May be formal or informal

Scope Planning

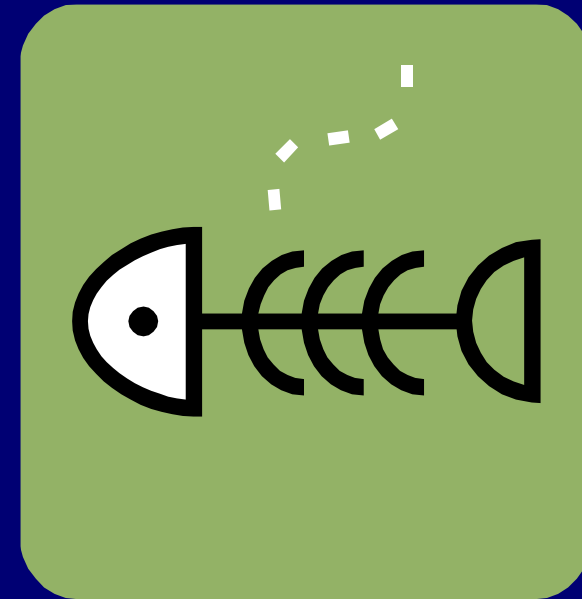
Scope statement

- Once the definition has been completed and the scope has been established, the documentation and approval of the project parameters are necessary.
- This will serve as a control document for the duration of the project.



Next stage in Scope Management

Once the concept has been developed and agreed, the next stage is to put the meat on the bone....

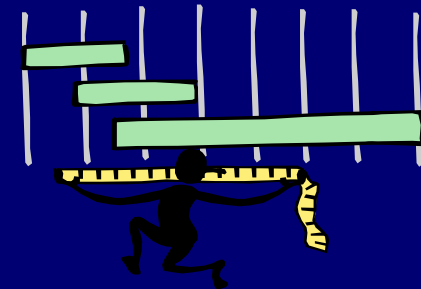


Scope Definition

Project initiation	committing the organisation to begin the next phase of the project
scope planning	developing a written scope statement as the basis for future project decisions
scope definition	– subdividing the major project deliverables into smaller more manageable deliverables
scope verification	formalising acceptance of the project scope
scope change control	controlling changes to the project scope

Scope Definition

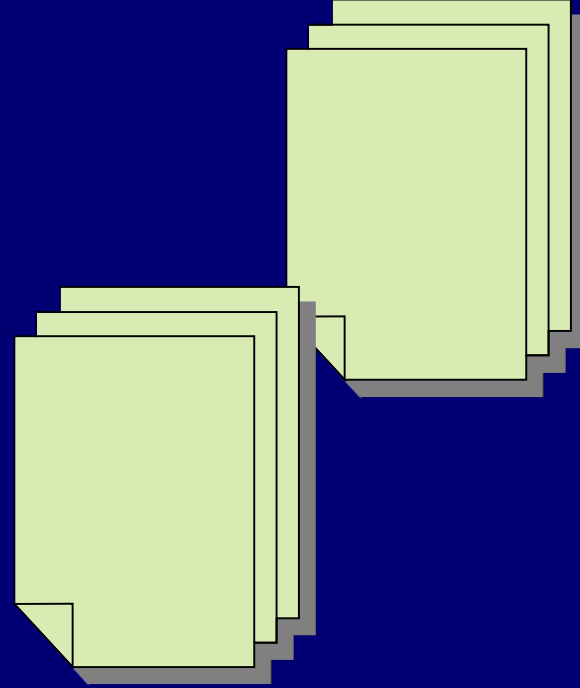
- **Scope definition** involves subdividing the deliverables into smaller, more manageable components, in order to improve accuracy, controls and to allocate responsibilities
- *Inputs* would be the scope statement, planning outputs and historical information on lessons learnt .



Scope Definition

– Tools & Techniques

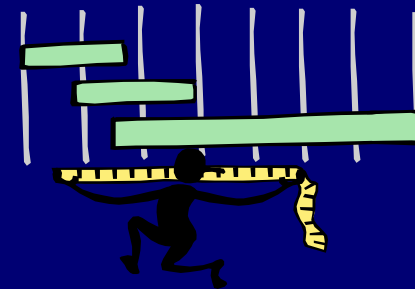
- Work breakdown structure (WBS)
- Bill of Materials



Work Breakdown Structure

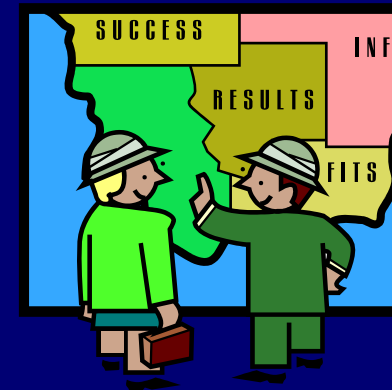
WBS = breaking down the project into a cohesive set of concurrent and specific tasks

Often you can use WBS templates from previous projects.

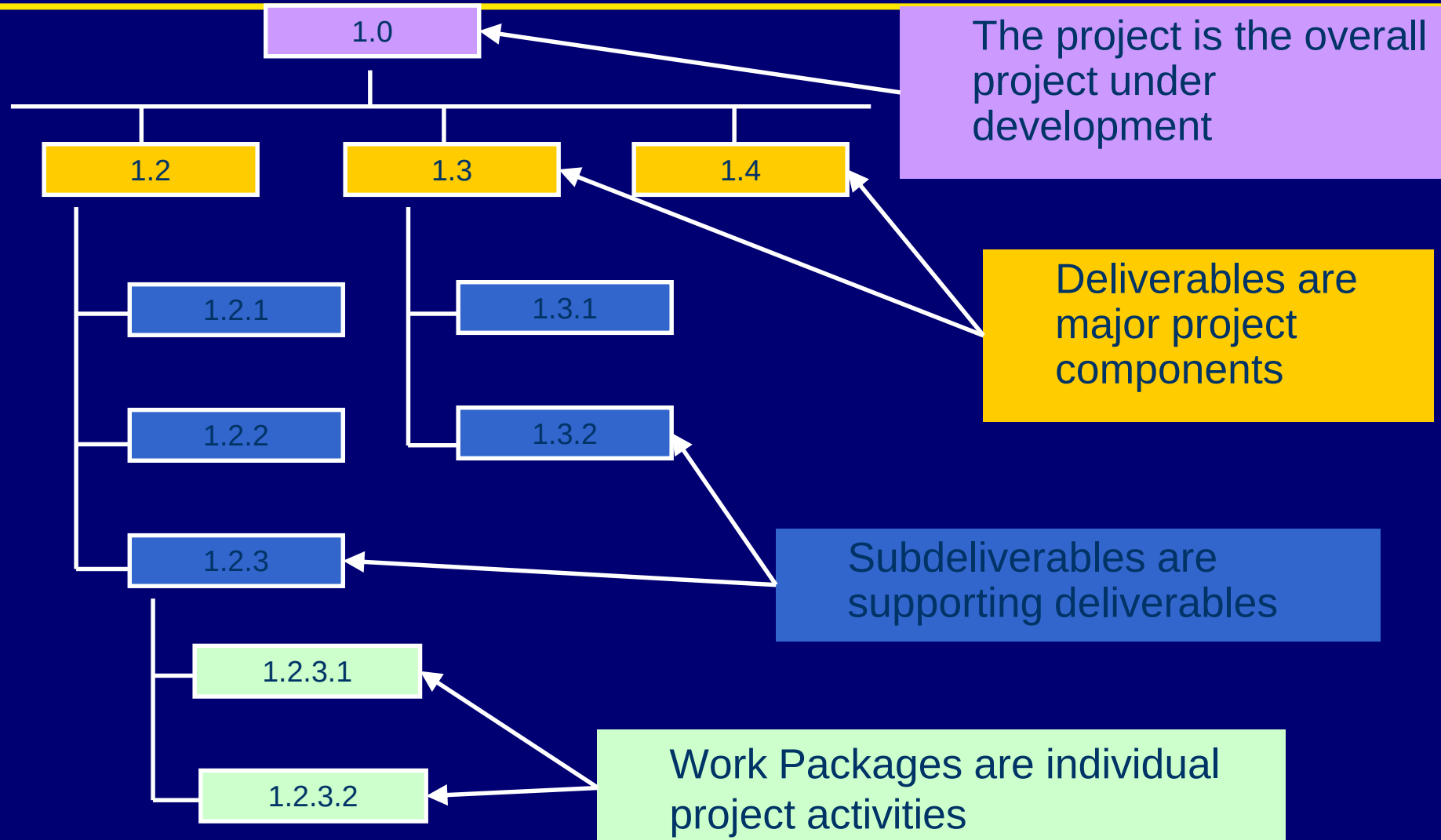


WBS

- Through the use of the work breakdown structure (WBS) the project can be structured into controllable segments



WBS Illustrated



Example of “Having a Party”

Imagine your project is having a party

The top level is having a party

This may break down into several elements or sub-projects - including sorting out the food, sorting out the venue, inviting the guests etc

Let's take one of these elements – sorting out the food

It can be broken down into several tasks – including baking a cake

Baking a cake can be broken down into several activities, including finding suitable dishes for baking, measuring out the ingredients, baking in the oven, removing and leaving to cool.....



WBS benefits

- it defines and organizes the work required
- it facilitates the quick development of a schedule by allocating effort estimates to specific sections of the WBS
- it can be used to identify potential scope risks if it has a branch that is not well defined
- it provides a visual of entire scope
- it can be used to identify communication points
- it can be used to show and assign accountabilities and responsibilities
- it can show control points and milestones
- it provides a way to estimates project costs
- it ensures no important deliverables are forgotten
- it can assist with resource allocation
- it provides a proven and repeatable approach to planning projects
- it provides a tool for team brainstorming and collaboration
- it provides an opportunity to engage the team and make them feel invested in the planning

Your chance now.....

In groups, produce a WBS for
'producing a group assignment for
the Project management class'

Assume the output for this is an
assignment that meets
requirements

Bill of materials

- A bill of materials (BOM) is a formal and complete hierarchal documentation of the specific items that need to be included in a finished product. This list can include specific components, assemblies, and subassemblies. Bills of materials can be drafted at the onset of a project as part of the estimating and budgeting process and can also be used in the determination of scheduling. Bills of materials are used in a number of different industries.

Bill of materials

- One rather simplistic example of a bill of material would be the following. In a plant devoted to the manufacture and packaging of a billiards set for retail sale, the bill of materials would include all components required to be in the final box for sale (billiards cues, billiards balls, chalk, billiards table), all of the assemblies required (assembling the pool cues, assembling the billiards table), and all subassemblies (attaching the felt surface to the billiards table, etc.). The bill of materials is typically one of the first items drafted upon project inception.



Example of a bill of materials

Bill of Materials – Home Linux Server			
Components	Model	Details	Price
Case	SX1040	Easy access	R654.00
Power supply	PP412X	Included with case	R0.00
CPU	2.4GHz	533 MH2 F88	R1400.00
Motherboard	IT7	Onboard LAN	R910.00
System memory	512 MBPC2700 DDR		R950.00
Graphics card	GeForce 4MX 420		R490.00
Network card	3C805-TX		R175.00
CD burner	SD-R1002	DVD, CD-RW, CD-R	R1050.00
Hard drive	WD1200JB	120GB drive for data volume	R980.00
Display	Q41Opliquet	14" Monitor	R950.00
Keyboard	PS2		R195.00
Mouse	Wheel Mouse		R110.00
Distribution	SUSE8.0Pro		R560.00
Total			R8424.00

Scope Verification

Project initiation	committing the organisation to begin the next phase of the project
scope planning	developing a written scope statement as the basis for future project decisions
scope definition	– subdividing the major project deliverables into smaller more manageable deliverables
scope verification	formalising acceptance of the project scope
scope change control	controlling changes to the project scope

Scope Verification

- Formalising acceptance by stakeholders
- Requires the outputs from the previous stages of the scope management



Scope Change Control

Project initiation	committing the organisation to begin the next phase of the project
scope planning	developing a written scope statement as the basis for future project decisions
scope definition	– subdividing the major project deliverables into smaller more manageable deliverables
scope verification	formalising acceptance of the project scope
scope change control	controlling changes to the project scope

Scope Change Control

- A very important part of project management
- Determine and manage any changes that occur
- Normally a change request is submitted to the project office

Exercise 1

1. Name some things in a project that could be affected by changes in scope
2. Name and describe the 2 elements of scope management that deal with concept development?
3. Name and describe the 2 elements that deal with providing the detail?
4. What is the most common tool for helping define the detail?

Answers

1. Name some things in a project that could be affected by changes in scope
 - the schedule (more work or less work)
 - the cost (more or less resources needed, spec changes)
 - the quality (changes may be unacceptable to customer)
 - the human resources (more or less staff)
 - Communication management (need for simple v sophisticated system)
 - the risk exposure (might increase or decrease)
2. Name the 2 elements of scope management that deal with concept development?
 - Project initiation – committing the organisation to begin the next phase of the project
 - Scope planning – developing a written scope statement as the basis for future project decisions

Answers

3. Name the 2 elements that deal with providing the detail?

- scope definition – subdividing the major project deliverables into smaller more manageable deliverables
- scope verification – formalising acceptance of the project scope

4. What is the most common tool for helping define the detail?

Work breakdown structure (WBS)

Exercise 2

- Imagine you have a project which is 'producing a group assignment for Project Management'
- Outline what would be in the **Project Charter** including:
 - references to other relevant documents
 - problem/ business needs statement
 - description of the project to be undertaken
 - project objectives
 - constraints and assumptions



Thank you for your
attention!