

# **Informatik-Projektentwicklung**

## **– Lecture 3 –**

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Software Component Technology

Wintersemester 04/05



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# Project Lifecycle

Which of the following is a common characteristic of most project lifecycle descriptions?

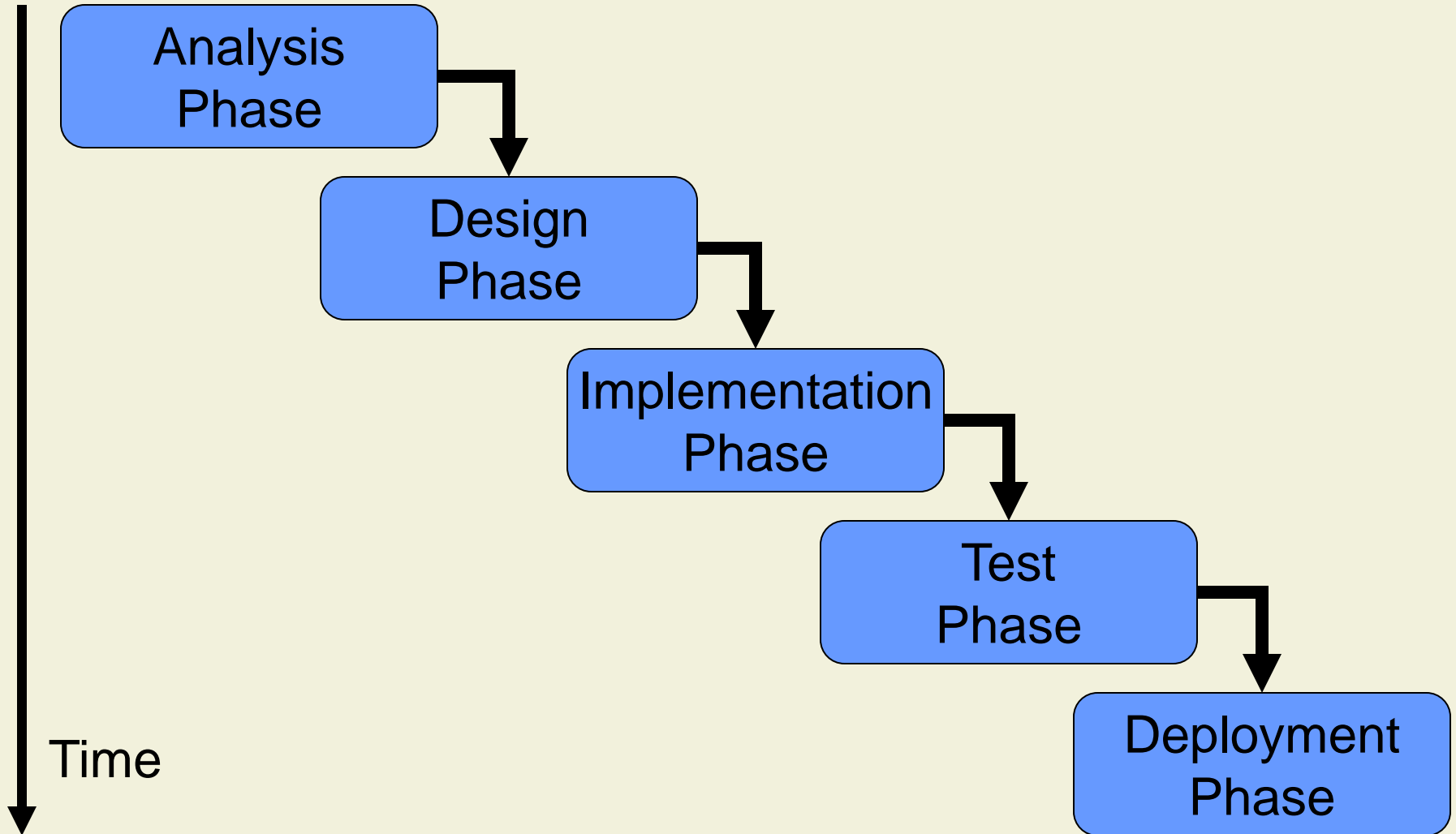
- a. Cost and staffing are low at the start, higher towards the end of implementation, and drop rapidly as the project nears completion
- b. The probability of successfully completing the project is highest at the start of the project
- c. Stakeholders have the most influence on the final characteristics of the product at the end of the project
- d. Risk and uncertainty are lowest at the start of the project

# Project Lifecycle

Which of the following is NOT true about project lifecycles and project phases?

- a. Project phases within a project cycle are always sequential
- b. Project phases are marked by the completion of one or more deliverables
- c. The project lifecycle definition serves to define the beginning and end of a project
- d. The project lifecycle definition will determine whether the feasibility study is treated as the first project phase or as a separate, stand-alone project

# Waterfall Model of Project Life Cycle

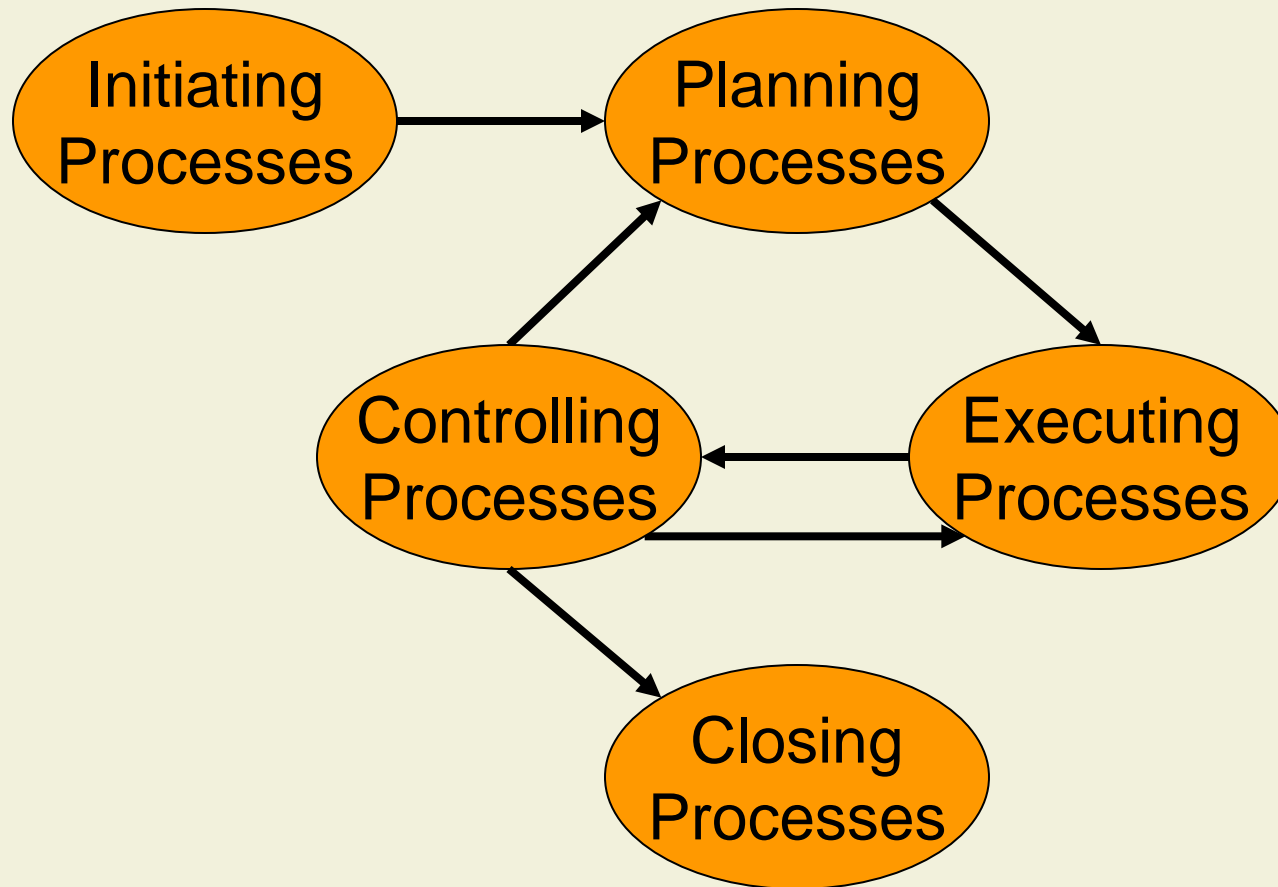


# Project Management Lifecycle

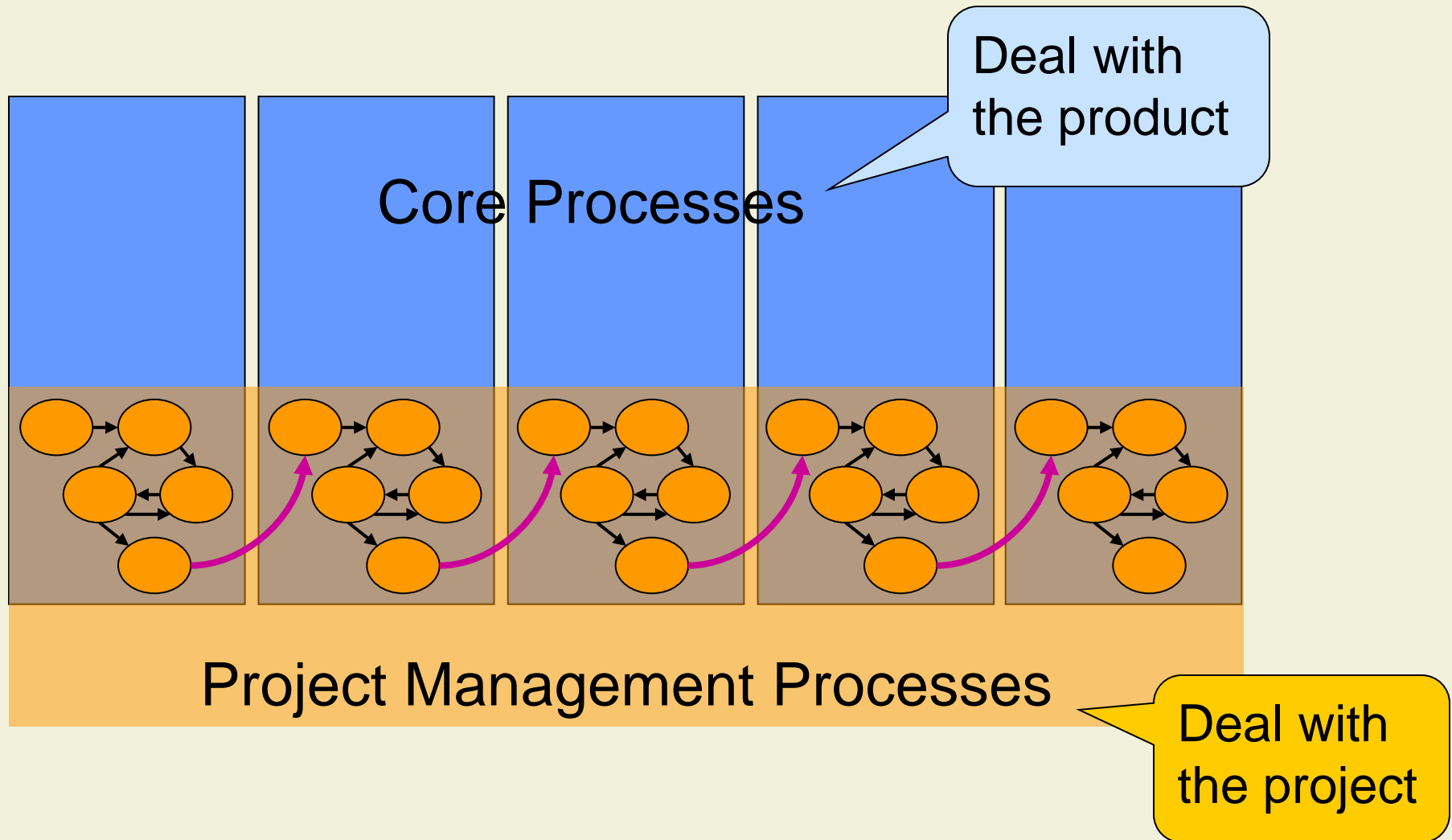
When should the project manager be assigned?

- a. As early in the project as feasible
- b. Preferably before much project planning has been done
- c. At least prior to the start of project plan execution
- d. All of the above

# Project Management Life Cycle



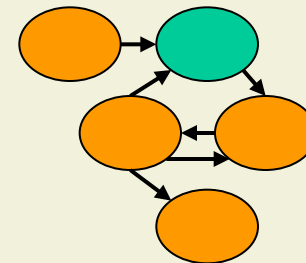
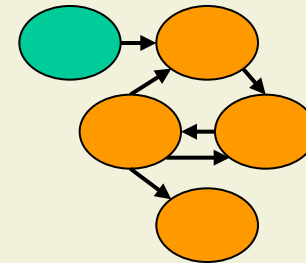
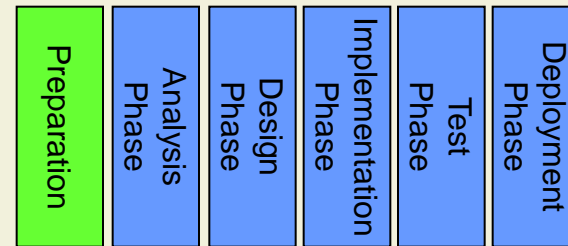
# Core and Project Management Processes



# Agenda for Today

## 3. Project Initiation and Planning

- Preparation
- Project Initiation
- Planning



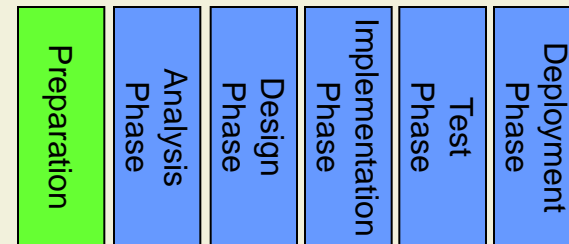


# 3. Project Initiation and Planning

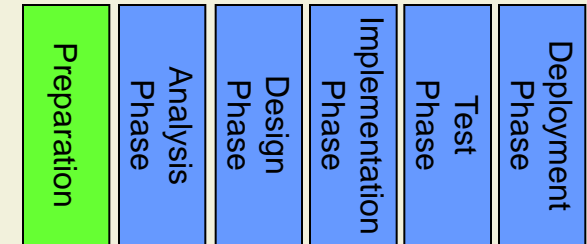
## 3.1 Preparation

## 3.2 Project Initiation

## 3.3 Planning

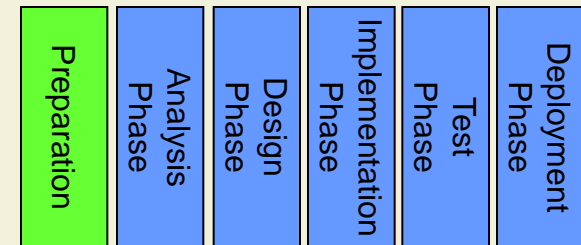


# Product Sketch



- Questions to ask
  - What should the product do?
  - How should the product work?
  - Who is affected by the product and which tasks are performed by these people?
- Level of detail
  - To assess technical feasibility
  - To enable a first cost estimate
- The product sketch is written for non-specialists (management)

# Preparation: Summary



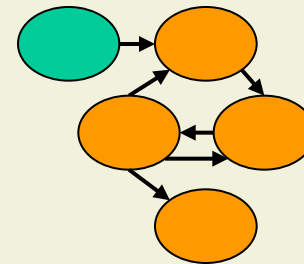
- The preparation is NOT part of the project
- Purpose
  - To develop concrete objectives from vague ideas
- Major deliverables
  - Product sketch for decision paper
- Main actors
  - Clients, project manager, business analysts
- Tools and techniques
  - Communication
  - Preparatory studies, e.g., impact analyses

# 3. Project Initiation and Planning

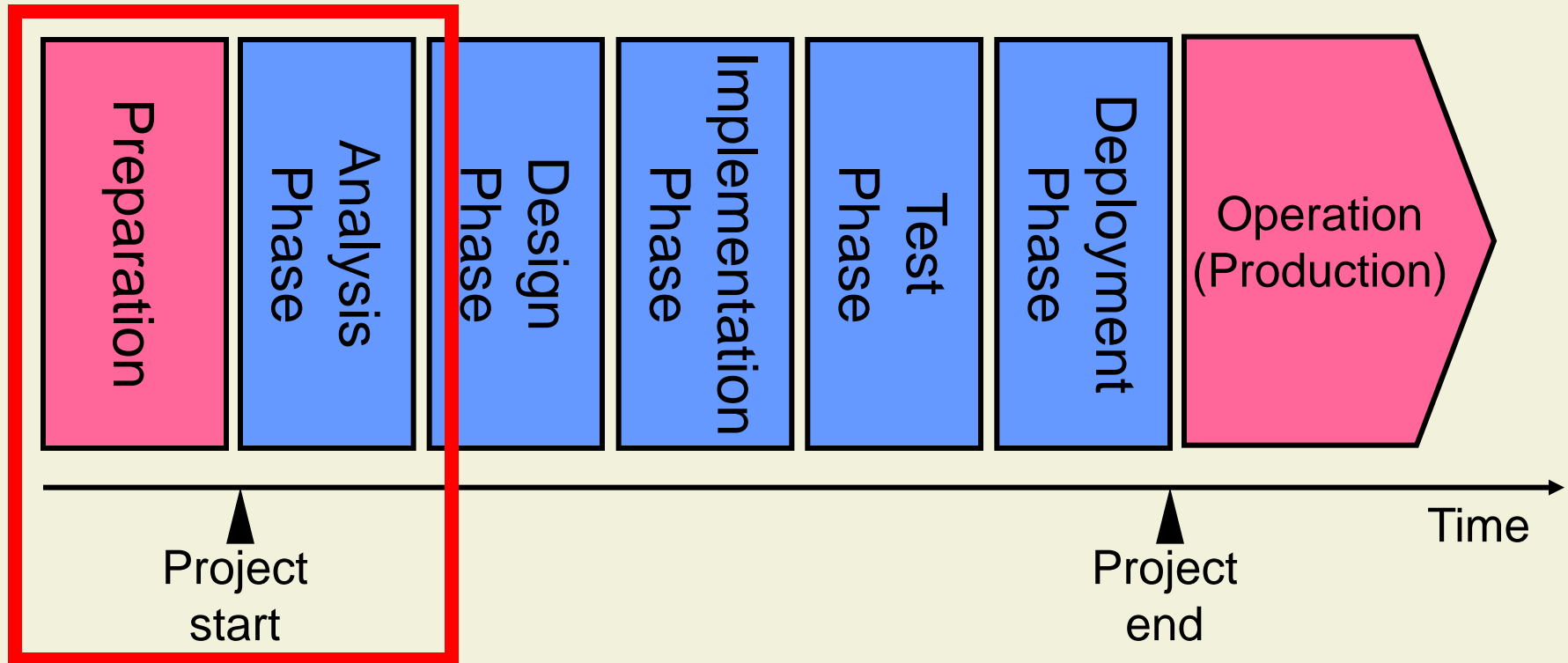
3.1 Preparation

**3.2 Project Initiation**

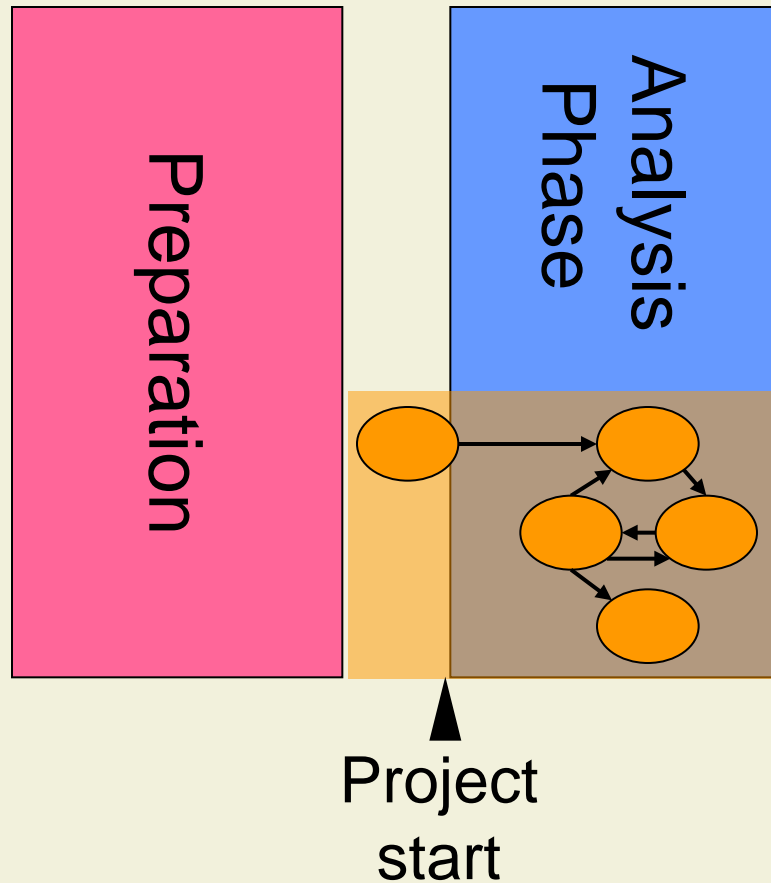
3.3 Planning



# Starting a Project

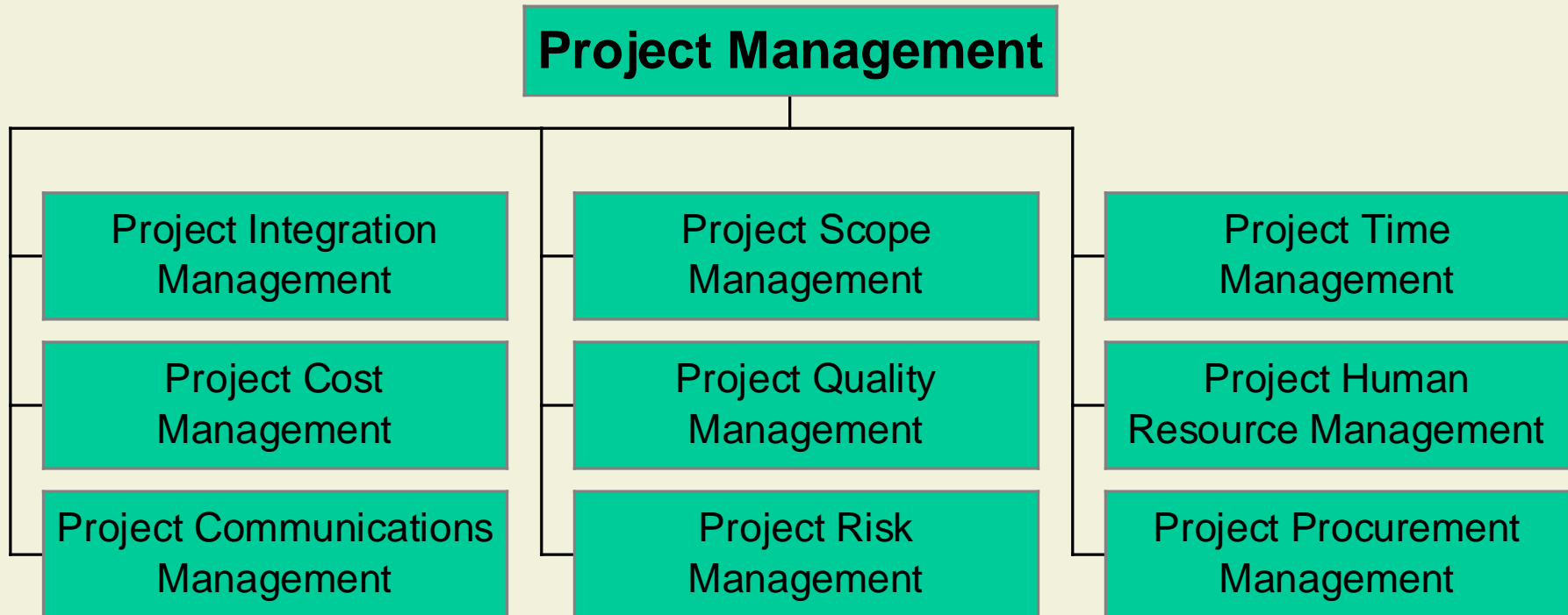


# Starting a Project

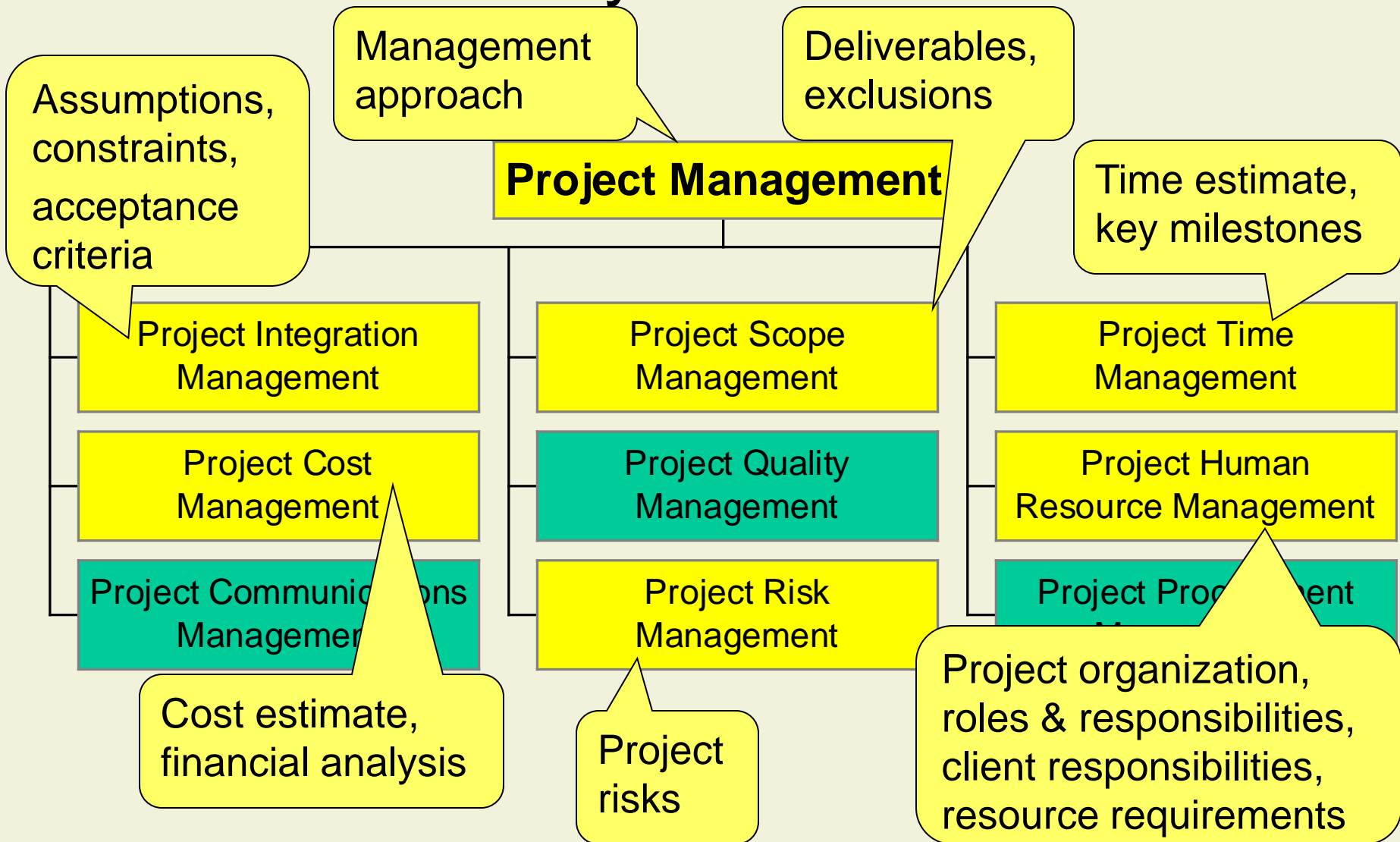


- Starting a project is mainly a project management activity
- Initiation prepares a decision by clients and management

# What is Necessary to Take a Decision?

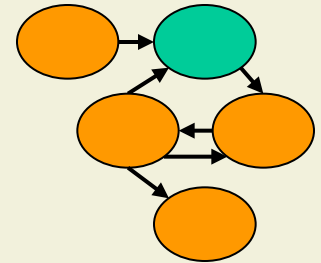


# What is Necessary to Take a Decision?





# Assumptions



- Definition:  
*Assumptions are factors that, for planning purposes, are considered to be true, real, or certain*
- Assumptions affect all aspects of project planning, and are part of the progressive elaboration of the project
- Project teams frequently identify, document, and validate assumptions as part of their planning process
- Assumptions generally involve a degree of risk

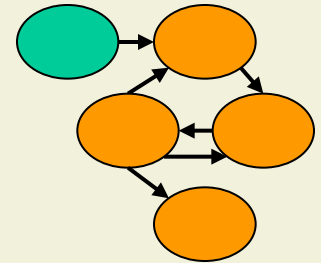
# Constraints

- Definition:

*Constraints are factors that limit the project team's options*

- A single project may contain cost, time, human resource, technical, and other constraints
- Examples
  - External deadlines (e.g., Y2K, Euro)
  - Fixed upper limits for budget
  - Dependencies on other projects, etc.

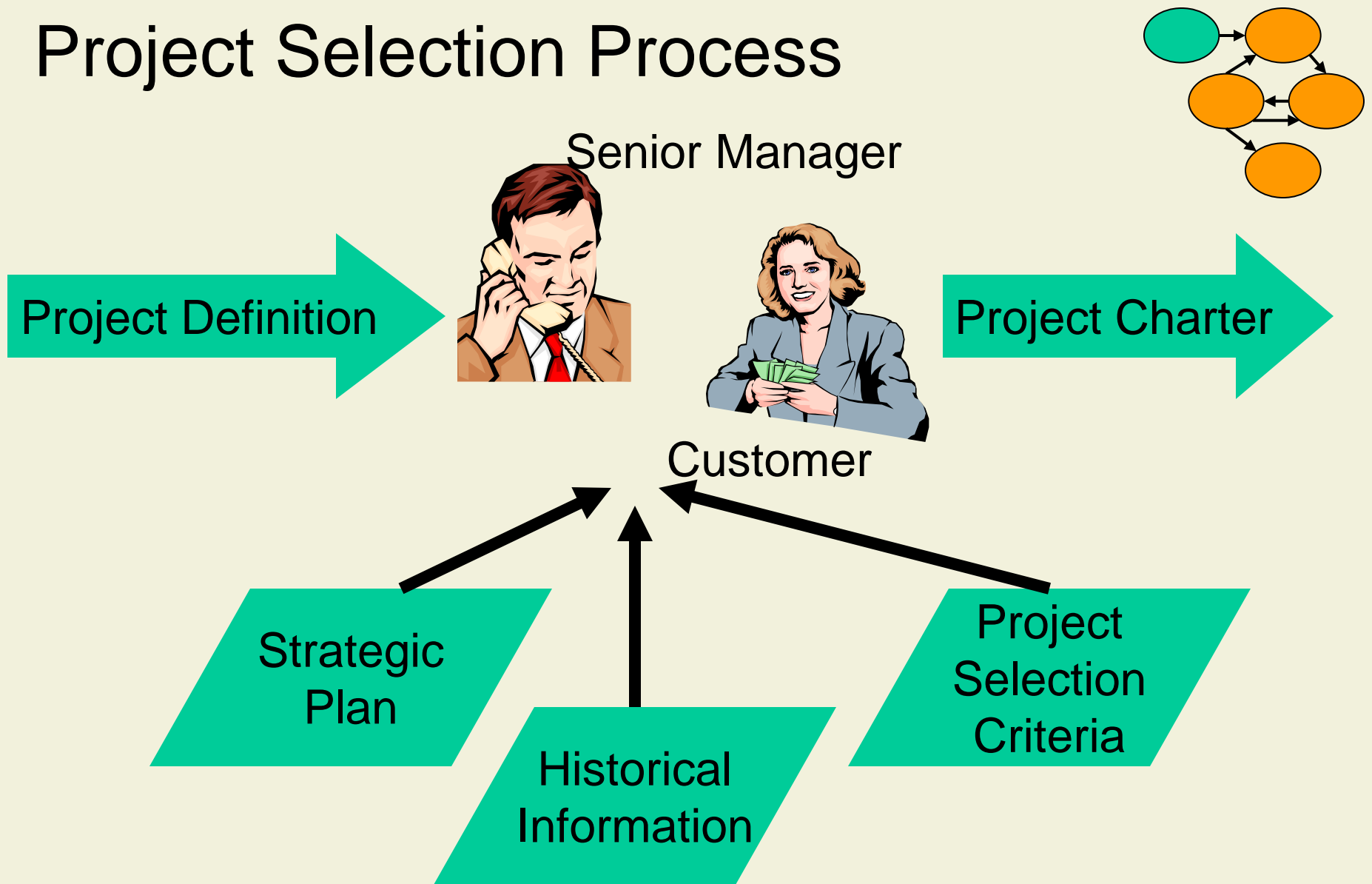
# Project Definition



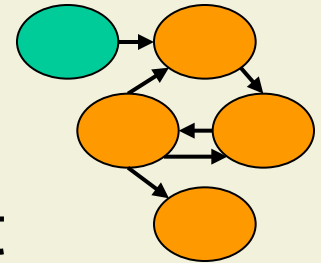
- The project definition is an overview document that sets the bounds of the project
- It is the basis for a decision by clients and management
- Example: ISIN03 Project Definition



# Project Selection Process

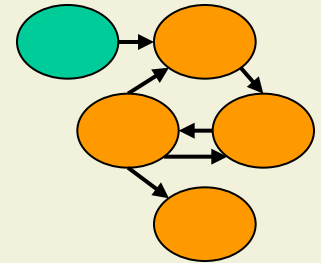


# Project Charter



- A document issued by senior management that formally authorizes the existence of a project
- Assigns the project manager
- Gives the project manager authority
- Contains
  - Project description
  - Project objectives
  - Business case
  - Product description, high-level deliverables
- For projects under contract, the signed contract may serve as project charter

# Initiation Process: Summary



## ■ Purpose

- To formally authorize a new project or that an existing project should continue into its next phase
- Repeating the initiation process at the start of each phase helps to keep the project focused on the business need

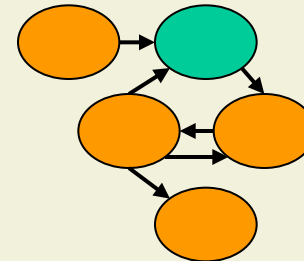
Inputs	Tools & Techniques	Outputs
<ol style="list-style-type: none"><li>1. Product description</li><li>2. Strategic plan</li><li>3. Project selection criteria</li><li>4. Historical information</li></ol>	<ol style="list-style-type: none"><li>1. Project selection methods</li><li>2. Expert judgment</li></ol>	<ol style="list-style-type: none"><li>1. Project definition</li><li>2. Project charter</li><li>3. Project manager assigned</li></ol>

# 3. Project Initiation and Planning

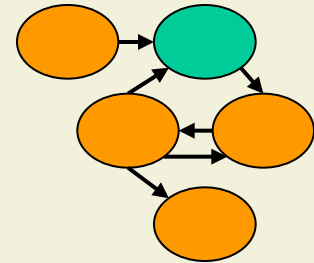
3.1 Preparation

3.2 Project Initiation

**3.3 Planning**



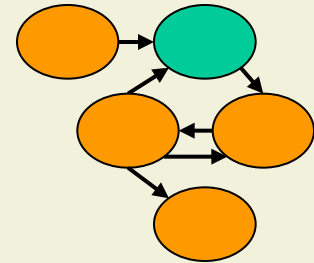
# Why Do We Need a Project Plan?



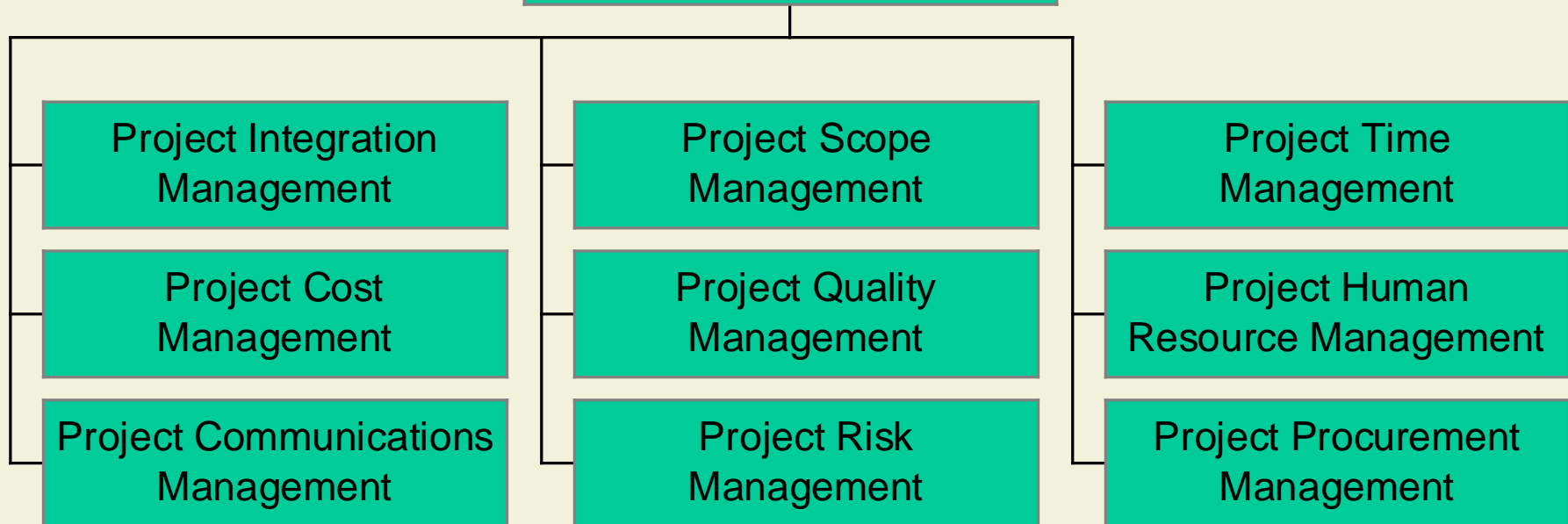
- Unique product or service
- Guide project execution
- Document project planning assumptions
- Document planning decisions regarding alternatives chosen
- Facilitate communication among stakeholders
- Provide baseline for progress measurement and project control



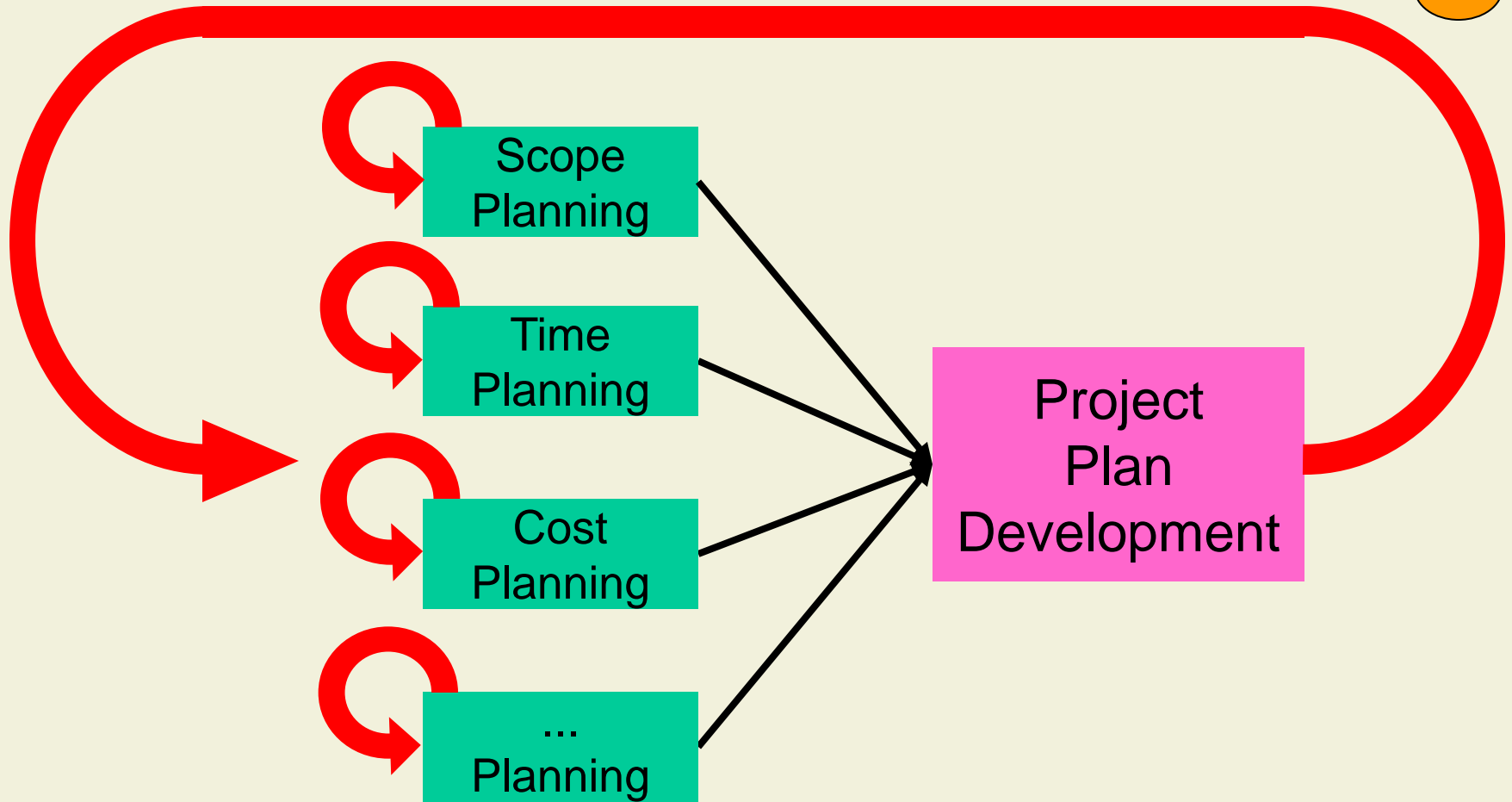
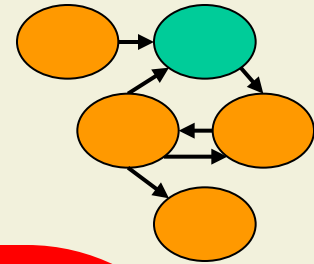
# Aspects of Project Planning



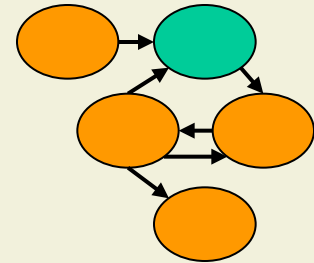
## Project Management



# Planning Iterations

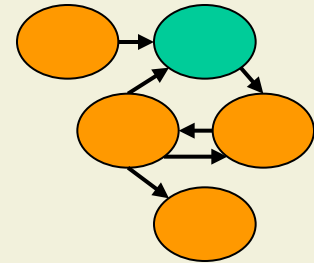


# Project Plan Document



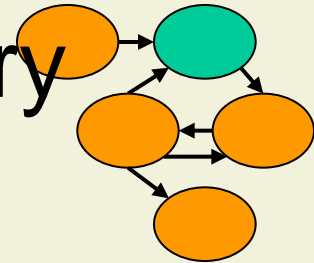
- A formal, approved document
- A project plan is not just a schedule!
- Contains
  - Project management approach
  - Scope, schedule, cost estimates, resources, responsibilities
  - Subsidiary management plans for scope, schedule, cost, quality, etc.
  - Performance measurement baselines for scope, schedule, and cost
  - Open issues and pending decisions

# Baseline



- Definition:  
*The originally approved plan plus or minus approved changes.*
- Baselines are used to compare the actual performance and forecasts of the project with the original plan

# Project Plan Development: Summary



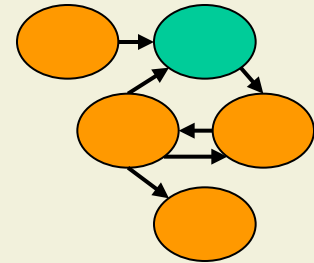
## ■ Purpose

- To create a consistent document that can be used to guide both project execution and project control

## ■ Plan your work and work your plan!

Inputs	Tools & Techniques	Outputs
<ol style="list-style-type: none"><li>1. Other planning outputs</li><li>2. Constraints</li><li>3. Assumptions</li></ol>	<ol style="list-style-type: none"><li>1. Project planning methodology</li><li>2. Stakeholder skills and knowledge</li></ol>	<ol style="list-style-type: none"><li>1. Project plan</li></ol>

# Scope Planning: Summary

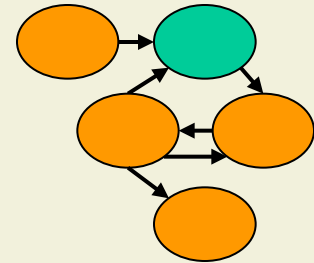


## ■ Purpose

- To progressively elaborate and document the project scope

Inputs	Tools & Techniques	Outputs
<ol style="list-style-type: none"><li>1. Product description</li><li>2. Project charter</li></ol>	<ol style="list-style-type: none"><li>1. Product analysis</li><li>2. Benefit/cost analysis</li><li>3. Alternatives identification</li><li>4. Expert judgment</li></ol>	<ol style="list-style-type: none"><li>1. Scope Statement</li><li>2. Scope management plan</li></ol>

# Decomposition of Deliverables



Identify the major deliverables of the project, including project management

Adequate cost and duration estimates possible at this level?

Yes

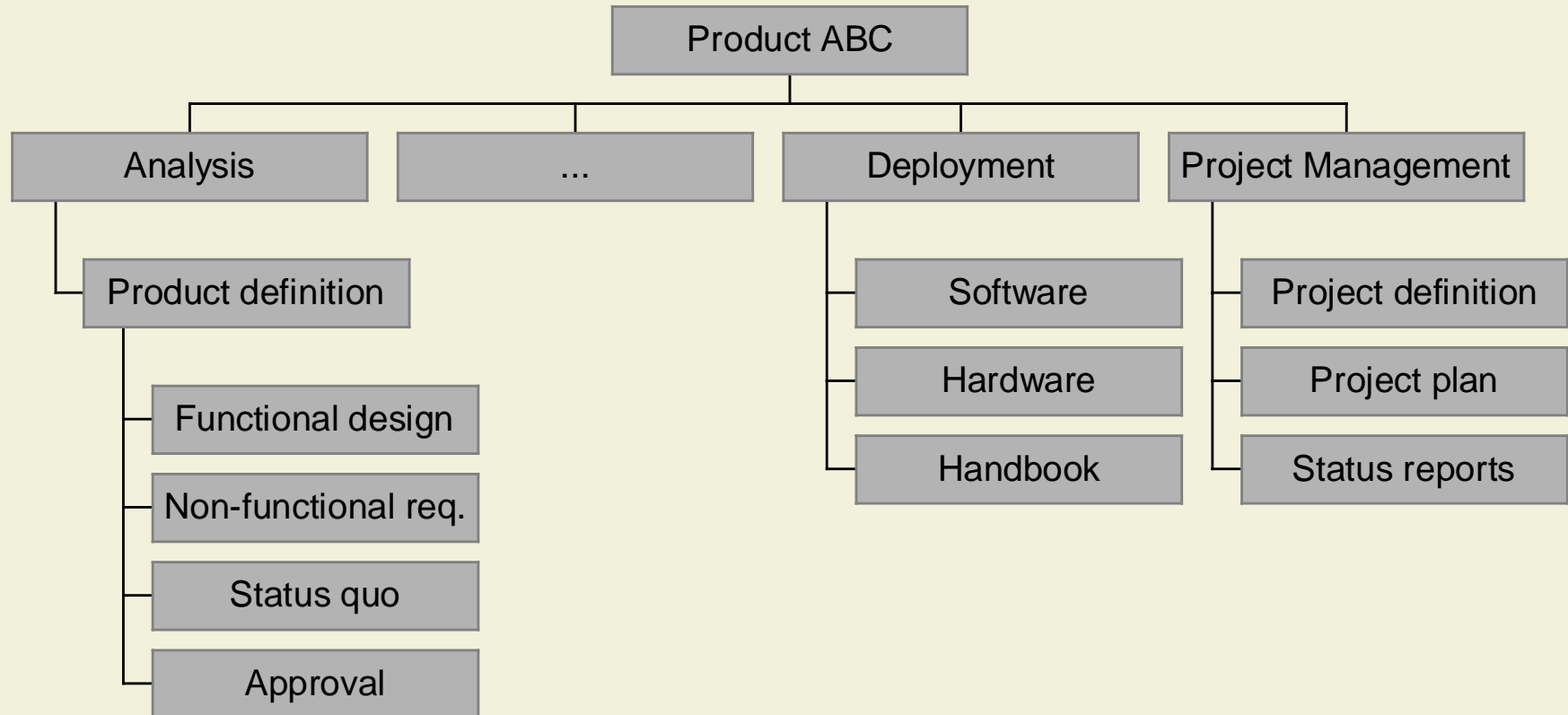
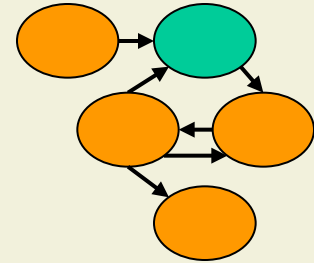
Validate decomposition:

- Are items necessary and sufficient?
- Is each item clearly and completely defined?
- Can each item be scheduled and budgeted?

No

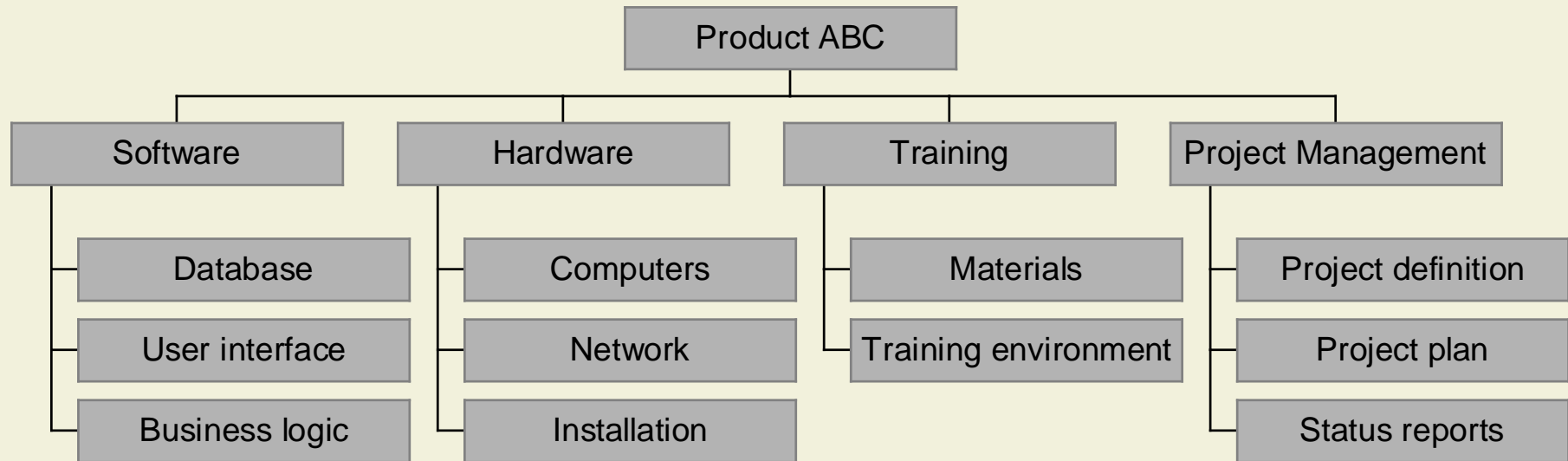
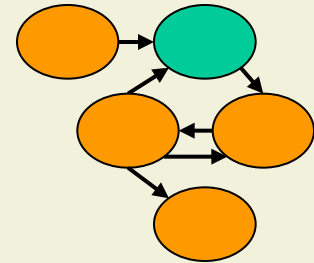
Identify constituent components of the deliverable

# Decomposition Example 1

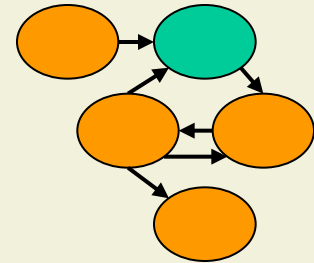




# Decomposition Example 2



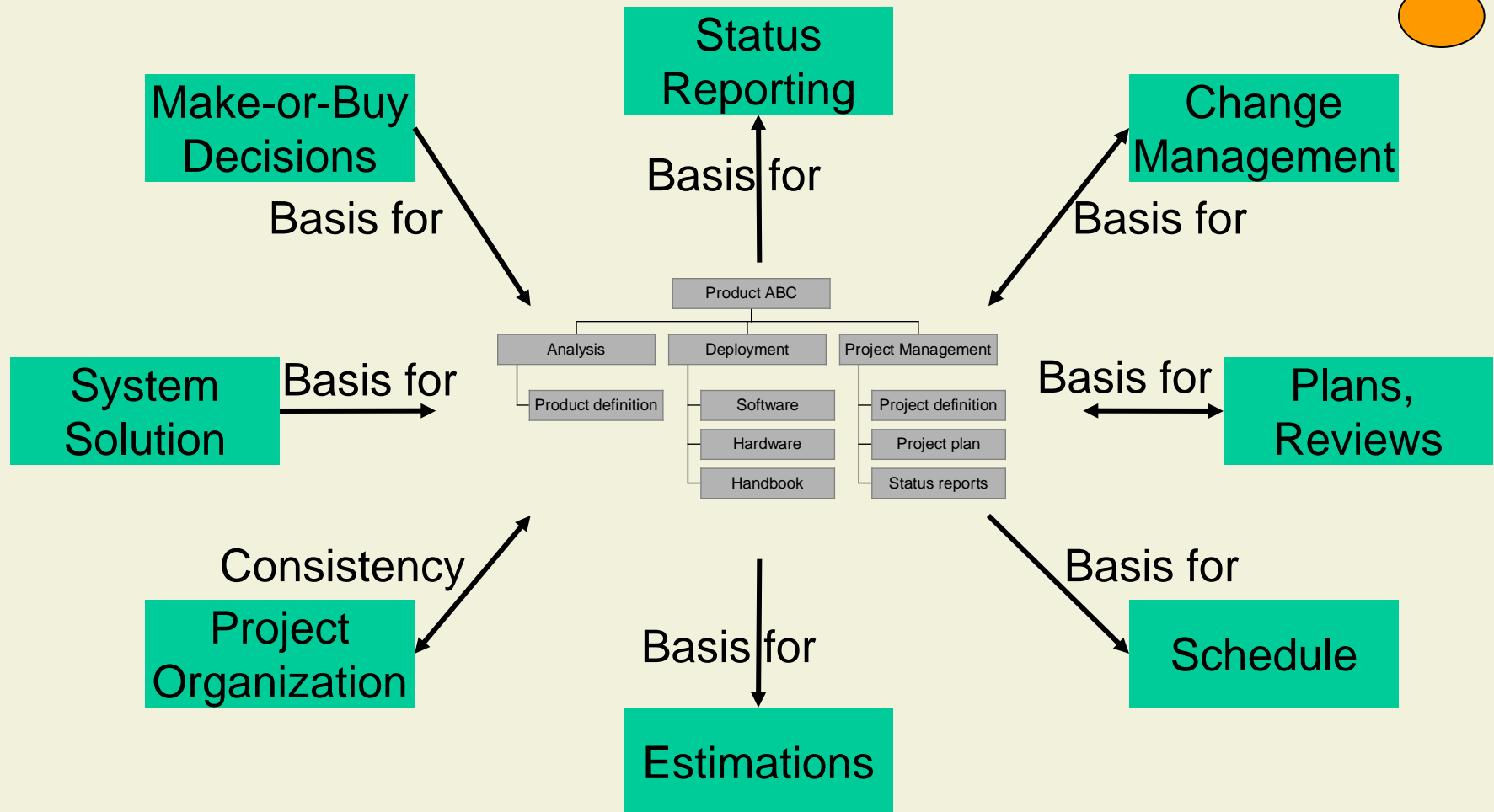
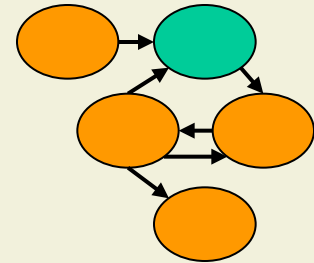
# Work Breakdown Structure (WBS)



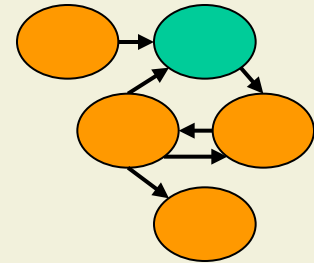
- Definition:

*A deliverable-oriented, hierarchical grouping of project elements that organizes and defines the total work scope of the project. Each descending level represents an increasingly detailed definition of the project*

# WBS Relationships



# Scope Definition: Summary



## ■ Purpose

- To subdivide the major project deliverables into smaller, more manageable components

Inputs	Tools & Techniques	Outputs
1. Scope statement	1. Decomposition 2. WBS templates	1. Work breakdown structure 2. Scope statement updates

# Systematics of Processes

	Initiating	Planning	Executing	Controlling	Closing
Integration		Project Plan Dev.	Project Plan Execution	Integr. Change Control	
Scope	Initiation	Scope Planning Scope Definition			
Time					
Cost					
Quality					
HR					
Comm.					
Risk					
Procurement					