Module 3: The Project Planning Stage
Module 3: The Project Planning Stage

Overview

- Once you've initiated the project and gathered all relevant information, you'll then begin planning your project.
- The planning stage depends on the size of your project, how much information you have to organize and how large your team is.
- The end result of planning is a clear project plan or schedule, from which everyone will follow their assigned tasks.
- Different tools, techniques and planning programs may be used by the project manager for planning the project implementation.
Overview

The planning process:

- Identifies specific work to be performed and the goals that define the project
- Provides documented estimates regarding schedule, resources and cost for planning, tracking, and controlling the project
- Obtains organizational commitments that are planned, documented, and agreed upon
- Continues the development and documentation of project alternatives, assumptions, and constraints
- Establishes a baseline of the plan from which the project will be managed.
Module 3: The Project Planning Stage

The Project Planning Stage
**PM Knowledge Areas – Relevant Processes**

- **Project Integration Management**
  - Develop Project Charter
  - Develop Project Management Plan
  - Direct and Manage Project Execution
  - Monitor and Control Project Work
  - Perform Integrated Change Control
  - Close Project or Phase

- **Project Scope Management**
  - Collect Requirements
  - Define Scope
  - Create WBS
  - Verify Project Scope
  - Control Project Scope

- **Project Time Management**
  - Define Activities
  - Sequence Activities
  - Estimate Activity Resources
  - Estimate Activity Durations
  - Develop Schedule
  - Control Schedule

- **Project Cost Management**
  - Estimate Costs
  - Determine Budget
  - Control Costs

- **Project Quality Management**
  - Plan Quality
  - Perform Quality Assurance
  - Perform Quality Control
The Project Planning Stage

PM Knowledge Areas – Relevant Processes

- Develop Human Resource Plan
- Acquire Project Team
- Develop Project Team
- Manage Project Team
- Plan Risk Management
- Identify Risks
- Perform Qualitative Risk Analysis
- Perform Quantitative Risk Analysis
- Plan Risk Responses
- Monitor and Control Risks
- Identify Stakeholders
- Plan Communications
- Manage Communication
- Manage Stakeholder Expectations
- Report Performance
Module 3: The Project Planning Stage

Understanding the nature of projects

Project Planning Stage

1. Collect Requirements
2. Define Scope
3. Create WBS
4. Define Activities
5. Sequence Activities
6. Estimate Activity Resources
7. Estimate Activity Durations
8. Develop Schedule
What is Project Management Plan?
A project plan, according to the Project Management Body of Knowledge (PMBOK), is:

"a formal, approved document used to guide both project execution and project control. The primary uses of the project plan are to document planning assumptions and decisions, facilitate communication among stakeholders, and document approved scope, cost, and schedule baselines. A project plan may be summarized or detailed."
A **project charter** is a short document that lists the scope, objectives, deliverables, and stakeholders of a project, and delineates roles and responsibilities of each member of the project team.

The project charter is the **first deliverable** of the project, used to secure stakeholder approval for the project goals and terms, and **establish authority for the project manager**.

A **project plan** is a formal, approved document that guides project execution and control. It explains in detail how and when to fulfill the project objectives by showing the major products, milestones, activities, and resources required on the project.

Once the top management **approves the project charter**, the project manager prepares the project plan that **shows how to achieve the approved project goals and objectives**.
**Project Planning**

**Develop Project Management Plan**

This project planning stage includes the processes to:

- Define, integrate, and coordinate all subsidiary plans into one plan
- Revise and update the plan throughout the project lifecycle by Integrated Change Control Process
- Define how the project is: executed, monitored, controlled, and closed

**How is the project management plan developed?**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Tools &amp; Techniques</th>
<th>Outputs</th>
</tr>
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<tr>
<td>.1 Project charter</td>
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<td>.4 Organizational process assets</td>
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</table>
Project Planning

*Develop Project Management Plan*

Project Management Plan determines:

- Project life cycle and processes applied at each phase
- Tailoring results:
  - project management processes
  - Level of implementation for each process
  - Description of the tools and techniques
  - How the selected processes will interact
- How work will be executed
- Change management plan
- How to maintain the integrity of the baseline
- Needs/techniques for communicating among stakeholders
- Key management reviews for open issues and pending decisions

**Uses of Project Management Plan**

- Guide project execution
- Document project planning assumptions
- Document project planning decisions
- Facilitate communication among stakeholders
- Define key management reviews
- Provide a baseline for progress measurement and project control
Module 3: The Project Planning Stage

Project Planning

Components of Project Management Plan

So what does a project management plan include?

- Scope management plan
- Schedule management plan
- Cost management plan
- Quality management plan
- Process management plan
- Staffing management plan
- Communication management plan
- Risk management plan
- Procurement management plan
- Baselines of cost, quality and schedule
- Risk Register
- Resource Calendar
- Project Milestones
Module 3: The Project Planning Stage

**Project Planning**

*Characteristics of Project Management Plan*

- Comprehensive
- Unique
- Unambiguous
- Always Current
- Authoritative

Diagram:

- Project management plan
  - Scope management plan
  - Schedule management plan
  - Cost management plan
  - Quality management plan
  - Process management plan
  - Staffing management plan
  - Communication management plan
  - Risk management plan
  - Procurement management plan
  - Baselines of cost, quality and Schedule
  - Risk Register
  - Resource Calendar
  - Project Milestones
Module 3: The Project Planning Stage

Understanding the nature of projects

Project Planning Stage

Integration Management

1. Develop Project Management Plan

Scope Management

2. Collect Requirements
3. Define Scope
4. Create WBS

Time Management

5. Define Activities
6. Sequence Activities
7. Estimate Activity Resources
8. Estimate Activity Durations
9. Develop Schedule
Collect Requirements

Requirements collection is part of Scope Management Knowledge Area, which includes the processes required to ensure that the project includes all the work, and only all the work required to complete the project successfully.

It is primarily concerned with controlling what is and what is not in the scope and serves as input to defining the WBS (Work Breakdown Structure)
Collect Requirements

Collect Requirements process involves documenting stakeholders needs to meet project objectives.

How are the project requirements collected?

<table>
<thead>
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<th>Inputs</th>
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<td></td>
<td>.8 Prototypes</td>
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</table>
**Collect Requirements**

**Stakeholder Expectations, Wants and Needs**

*Needs*: the things required by stakeholders to sustain their work  
*Wants*: additional goods and services that go beyond the sustenance – features and added benefits  
*Expectations*: what is in the mind of the stakeholders

**Requirements**

*Requirements*: what shall the project achieve to meet the stakeholders expectations

**Specifications**

*Specifications*: what are the specifics of the solution that can fulfill the requirements
Collect Requirements
Consequences of bad requirements collection

Why is it essential for a project success to properly collect, document and confirm user requirements and expectations?
Collect Requirements

Consequences of bad requirements collection

Why is it essential for a project success to properly collect, document and confirm user requirements and expectations?
Define Scope

- Once the requirements are collected, they are then documented thoroughly in a scope statement, which include:
  - **Justification**: A brief statement regarding the business need your project addresses. This is just to link the requirements back to the project charter.
  - **Scope description**: The characteristics of the products, services, and/or results your project will produce. This must be detailed and unambiguous.
  - **Acceptance criteria**: The conditions that must be met before project deliverables are accepted.
  - **Deliverables**: The products, services, and/or results your project will produce.
  - **Project Exclusions**: Statements about what the project will not accomplish or produce.
  - **Constraints**: Restrictions that limit what you can achieve, how and when you can achieve it, and how much achieving it can cost.
  - **Assumptions**: Statements about how you will address uncertain information as you conceive, plan, and perform your project.
Module 3: The Project Planning Stage

Define Scope
A GCAA Example …
Create WBS (Work Breakdown Structure)

What is a project's Work Breakdown Structure (WBS)?

It is to subdivide the project’s deliverables and the project’s work into smaller, more manageable components.

- WBS defines particularly and exactly "What to do"
- A deliverable-oriented hierarchy
- More breaking down, more detailed definition and information
- Agreed upon WBS Work packages and WBS Dictionary form the project baseline
Create WBS (Work Breakdown Structure)

- Collect Requirements process involves documenting stakeholders needs to meet project objectives.

**How is the WBS created?**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Tools &amp; Techniques</th>
<th>Outputs</th>
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<td>.3 Organizational process assets</td>
<td></td>
<td>.3 Scope baseline</td>
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</table>
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Create WBS (Work Breakdown Structure)

WBS Components

Project

Control Accounts

Planning Packages

Work Packages
Module 3: The Project Planning Stage

Create WBS (Work Breakdown Structure)

How to develop the WBS

WBS decomposition steps are:

- Identify the deliverables and related work
- Structure and organize the WBS
- Decompose the upper WBS level into lower level detailed components
- Develop and assign identification codes to these components
- Verify that the degree of decomposition of the work is necessary and sufficient

Identify WBS:

- Each level in WBS is assigned a unique ID
- Each component at these levels is also assigned a unique ID
- These identifiers are used to:
  - Track and sum costs
  - Scheduling
  - Resource assigning
  - Link to chart of accounts
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Create WBS (Work Breakdown Structure)

WBS Dictionary

- WBS dictionary document is required to support the WBS definition and should be attached to it
- It describes with full details the work packages or control accounts

<table>
<thead>
<tr>
<th>WBS ID.</th>
<th>Component</th>
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<th>Resource</th>
<th>Milestones</th>
<th>References</th>
<th>Set of schedule Activities</th>
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<td></td>
<td></td>
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<td>1.2.1</td>
<td>Walls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.2</td>
<td>Ground</td>
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<td></td>
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</tbody>
</table>
Module 3: The Project Planning Stage

Create WBS (Work Breakdown Structure)

Benefits of WBS

- Technical management
  - Configuration management
  - Logistics support
  - Test and evaluation
- Work identification and assignment
- Schedule management
  - Plans
  - Status

- Scope Control
- Activity Definition
- Cost management
  - Cost Estimating
  - Cost Budgeting
- Performance measurement
  - Owner
  - Responsible
  - Milestone
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Create WBS (Work Breakdown Structure)

Team Activity 6

Each team to create WBS for the project we started in initiation:

“Automation of Enterprise Project Management Process”
Module 3: The Project Planning Stage

Create WBS (Work Breakdown Structure)
Team Activity 6

Work Packages

Control Accounts

Planning Packages

Project

- EPM Process Automation
  - 1.0 Requirements
    - 1.1 Functional and Layout
      - 1.1.1 Reporting
      - 1.1.2 Layout
    - 2.2 Non-Functional
  - 2.0 Customization
    - 2.1 Functionality
      - 2.1.1 System functions
      - 2.1.2 Reporting
    - 2.2 Layout
  - 3.0 Test
    - 3.1 HW
    - 3.2 Software
      - 3.2.1 System functions
      - 3.2.2 Reports
      - 3.2.3 Layout
Module 3: The Project Planning Stage

Understanding the nature of projects

Project Planning Stage

Integration Management

1. Develop Project Management Plan

Scope Management

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Time Management

5. Define Activities
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9. Develop Schedule
Define Activities

At this point in the planning process and after the requirements have been specified and the detailed Work Breakdown Structure (WBS) is defined, the next step is to define the project schedule by applying the processes define in the time management knowledge area.
Define Activities

- The first process to start with in the Time Management knowledge area is Define Activities.
- Defining activities is the process of identifying the specific actions to be performed to produce the project deliverables.
- Using the defined WBS and the scope baseline, these are decomposed to break down the work into schedule activity level detail in the form of an activity list representing all of the schedule activities’ that need to take place in order for the project to be successfully completed.
- Each work package will be broken down or decomposed into individual work schedule activities.
Define Activities

Example

- Going back to the example of New Car project discussed previously.

In order to deliver work package “2.3.3 Wheels”, a set of activities have to be executed as per the below example.
Sequence Activities

- Once the activities have been defined, the next step is to identify and document the relationships amongst them.
- This is required to determine the sequence in which the activities need to occur. So in this step activities are arranged in a logical sequence showing the order in which these activities must be performed.
- Some activities will have a fixed logical sequence, for example a car must be designed first before it can be built.
- Some activities may be performed at the same time as others, and hence will have a parallel relationship in terms of time. For example, you can procure the different car’s parts in parallel before you start the assembly process.
Sequence Activities

How to sequence activities

The process to sequence the project activities is as follows:

**Inputs**
- Project Scope Statement
- Activity List
- Activity Attributes
- Milestone List
- Organizational Process Assets

**Sequence Activities**

**Outputs**
- Project Schedule Network Diagrams
- Project Document Updates

- Precedence Diagramming Method (PDM)
- Apply Leads and Lags
- Schedule Network Templates
- Dependency Determination
Sequence Activities

**Precedence Diagram Method (PDM)**

- The precedence diagram method is a tool for scheduling activities.
- It uses boxes, referred to as nodes, to represent activities and connects them with arrows that show the dependencies.
  - Critical tasks, noncritical tasks, and slack time
  - Shows the relationship of the tasks to each other
  - Allows for what-if, worst-case, best-case and most likely scenario
- PDM is an extension of the traditional AON – Network model with additional relationships. Introduced in 1964. More flexible than AON; allows overlaps
- Available on almost all commercial microcomputer-based PMS
**Sequence Activities**

**Precedence Relationships Types**

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Description</th>
<th>Representation</th>
<th>Example</th>
</tr>
</thead>
</table>
| Finish To Start (FS)  | No way to start activity B unless A is finished  | ![Diagram](image) | - Finish drawings to get formal approval  
- Finish BOQ, specs, and drawing to start bidding |
| **MOST COMMON**       |                                                  |                |                                                                          |
| Finish To Finish (FF) | No way to finish activity B unless A is finished | ![Diagram](image) | - The disease should be overcome to stop the medicine  
- Maintenance can end one year after finishing delivery |
| Start To Start (SS)   | No way to start activity B unless A is started   | ![Diagram](image) | - Start heating up the oven to start cooking  
- No way to start removal unless excavation is started |
| Start To Finish (SF)  | No way to finish activity B unless A is started  | ![Diagram](image) | - No way to finish morning shift unless evening shift started  
- No way to retire old system until new system is running |
Sequence Activities
Applying Leads and Lags

**Lag:** The successor activity cannot start until x time period after the predecessor is completed.

**Lead:** a time gap that allows the successor to start earlier.

![Diagram showing sequence activities with lead and lag times.](image)
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Sequence Activities

PDM with Lag and Lead Times
Sequence Activities

*Precedence Diagram Method (PDM)*

- **Schedule Network Templates** – A complete or a portion of a project schedule network diagram sub-network or a fragment network
  - Used when the current project is identical or have nearly identical deliverables

- **Project Schedule Network Diagrams** – A schematic diagram with a summary narrative that accompanies the diagram and describes the basic approach used to sequence the activities especially unusual activities' sequences
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Sequence Activities
Network Logic Diagram

- The best way of representing such sequence activities relationships is in the form of a network logic diagram indicating the sequence and order in which each activity must be performed.

Example from the PMBOK of a Network Logic Diagram

- Each activity will have its duration included within each box or node.
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Sequence Activities
Team Activity 7

For the same project:
“Automation of Enterprise Project Management Process”

Produce the low level activities required to complete the project for one of the branches
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Sequence Activities

*Team Activity 7 – Sample answer*

1.1 Functional and Layout

1.1.1 Reporting

- Define a list of required reports
- Define Generic Report Layout
- Agree filtering criteria
- Define reporting frequency
- Confirm user access rights
- Agree graph layouts

EPM Process Automation
Estimate Activity Resources

After defining and sequencing the project activities, the next step is to estimate the resources required to perform each activity:

- What resources (persons, equipment, or materials)
- What quantities of each resource will be used

Also beside defining the resources, the resource calendar should be defined:

- Identify resources (all types of resources) availability in both time and quantity
- Resource availability includes knowledge, geographical locations, seasons…etc.

<table>
<thead>
<tr>
<th>Resource</th>
<th>Date</th>
<th>Time</th>
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<tr>
<td>Juan</td>
<td>Jan,1,2014</td>
<td>8:00-12:00</td>
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<tr>
<td>Raoul</td>
<td>Feb,1,2014</td>
<td>8:00-14:00</td>
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<tr>
<td>Daniella</td>
<td>.....</td>
<td>12:00-18:00</td>
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</table>
Sequence Activities

Estimate Activity Durations

Activity Node Layout in the PDM

Early Start
The earliest that an activity can start

Late Start
The latest that an activity can start and not impact project completion

LS = LF – Activity Duration

Early Finish
The earliest that an activity can possibly finish

EF = ES + Activity Duration

Late Finish
The latest that an activity can be completed without impacting the project completion

Total Float
= LS – ES
= LF - EF

Float - The number of days that an event can be delayed or extended without impacting the completion of the project.
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Sequence Activities

**Estimate Activity Durations**

- **Forward Pass** – A calculation starting with the first activity and culminating with the last activity performed to find the early dates and the duration of a specific project.

- **Backward Pass** – A scheduling calculation done to determine the activity late dates. This calculation begins with the last activity and project duration and culminates with the first activity.
Sequence Activities

Estimate Activity Durations

- **Critical Path** – Longest continuous chain of activities through the network schedule that establishes the minimum overall project duration.
- The critical path is composed of a continuous chain of activities through the network schedule with zero total float. (TF = 0)
- All activities on the critical path must start and finish on the planned early start and finish times. Failure of a critical path activity to start or finish at the planned early and late finish times will result in the overall project duration being extended.
Module 3: The Project Planning Stage

Sequence Activities

Critical Path Tips

- Critical activity: A zero activity float is a critical activity
- CP a sequence of activities where TF = 0 (pre set limitation)
- Longest Path
- Multiple Critical Paths
- Many paths have the same longest schedule time
- Near-critical path
- Critical activity doesn't mean important or urgent activity
- Some activities are critical – even they are out the CP
Module 3: The Project Planning Stage

Sequence Activities
Team Activity 8

For the same project:
“Automation of Enterprise Project Management Process”
Produce sample project critical path
Module 3: The Project Planning Stage

Sequence Activities

Team Activity 8

Define Requirements

Specify HW Requirements

Specify Functional customization

Specify Non Functional Customization

Specify Reports and Layout Customization

Customize and Test System

Prepare for Training

Define Training Requirements

Procure HW

Rollout
Module 3: The Project Planning Stage

Sequence Activities
Program Evaluation & Review Technique (PERT)

- Assumes an activity’s duration follows a probability distribution
- Accounts for uncertainty in activity duration estimates
- Provides estimates of project duration probabilities
- Best used for highly uncertain projects
  - New product development
  - Unique or first-time projects
  - Research and development
Module 3: The Project Planning Stage

Sequence Activities
Program Evaluation & Review Technique (PERT)

### Pessimistic Chart

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Pes Dur</th>
<th>Pes Start</th>
<th>Pes Finish</th>
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<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>4 days</td>
<td>16-01-06</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>4 days</td>
<td>20-01-06</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>5 days</td>
<td>26-01-06</td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td>2 days</td>
<td>02-02-06</td>
</tr>
<tr>
<td>5</td>
<td>E</td>
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### Optimistic Chart

<table>
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<th>Opt Start</th>
<th>Opt Finish</th>
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<tbody>
<tr>
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<td>2</td>
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<td>4</td>
<td>D</td>
<td>1 day</td>
<td>23-01-06</td>
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<tr>
<td>5</td>
<td>E</td>
<td>1 day</td>
<td>24-01-06</td>
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Sequence Activities
Program Evaluation & Review Technique (PERT)

Calculated Chart

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<td>3 days</td>
<td>18-01-06</td>
<td>23-01-06</td>
<td>1</td>
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PERT Table

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<td>3 days</td>
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</tbody>
</table>

PERT 3-Points Estimation:
- Optimistic Time (a) (extremely well)
- Pessimistic Time (b) (extremely well)
- Most likely Time (m) (probable time)
Module 3: The Project Planning Stage

Sequence Activities

The Bar Chart

- Open Field
- Site Prep.
- Underground
- Foundations
- Structures
- Equip. Erect.
- Pipe Fab.
- Pipe Erect.
- Electrical
- Instruments
- Buildings
- Insulation
- Painting
- Final Test
- Pre-Comm.
- Start-Up
- Test Runs

MONTHS
Module 3: The Project Planning Stage

Sequence Activities

The Gantt Chart

<table>
<thead>
<tr>
<th>WBS</th>
<th>Task Name</th>
<th>January</th>
<th>February</th>
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<td>3 6 9 12 15 18 21 24 27 30</td>
<td>2 5 8 11 14 17 20</td>
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<tr>
<td>1</td>
<td>Define specifications</td>
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</tr>
<tr>
<td>1.1</td>
<td>Identify customers</td>
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<tr>
<td>1.2</td>
<td>Interview 10 customers</td>
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<tr>
<td>1.3</td>
<td>Interpret requirements</td>
<td></td>
<td></td>
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<tr>
<td>1.4</td>
<td>Benchmark products</td>
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<tr>
<td>1.5</td>
<td>Define target PDS</td>
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<tr>
<td>1.6</td>
<td>Target PDS Released</td>
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<tr>
<td>2</td>
<td>Generate concepts</td>
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<td>2.1</td>
<td>Review comp products</td>
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<tr>
<td>2.2</td>
<td>Search patents</td>
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<td>2.3</td>
<td>Brainstorm concepts</td>
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<td>Select top 2 concepts</td>
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<td>4</td>
<td>MQ Presented</td>
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<td>5</td>
<td>Profile motor power</td>
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</tr>
<tr>
<td>5.1</td>
<td>Design test stand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>Build test stand</td>
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</tbody>
</table>
Sequence Activities
Team Activity 9

For the same project:
“Automation of Enterprise Project Management Process”
Produce a Bar Chart with dependencies
Sequence Activities

Team Activity 9 – Bar Chart

<table>
<thead>
<tr>
<th>Task</th>
<th>July</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
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<tbody>
<tr>
<td>Define Requirements</td>
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<tr>
<td>Specify HE Requirements</td>
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<tr>
<td>Procure HW</td>
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<tr>
<td>Specify Functional Customizations</td>
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<tr>
<td>Specify Non Functional Customization</td>
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<tr>
<td>Specify Reports and Layout Customization</td>
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<tr>
<td>Customize and Test System</td>
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<tr>
<td>Define Training Requirements</td>
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<tr>
<td>Prepare for Training</td>
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<tr>
<td>Rollout</td>
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- **FS + 2W**: July
- **SS + 1W**: Aug
- **FS – 0.5W**: Oct
Module 3: The Project Planning Stage

Sequence Activities
Team Activity 9 – Bar Chart and CPM

<table>
<thead>
<tr>
<th>Task</th>
<th>July</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
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<tbody>
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Zero Float
Module 3: The Project Planning Stage

Understanding the nature of projects

Project Planning Stage

Cost Management

- Estimate Costs
- Determine Budgets

Project Cost Management

- Estimate Costs
- Determine Budget
- Control Costs

Planning

Monitoring and Control
Understanding the nature of projects

Project Planning Stage – Cost Management

- All projects require resources to accomplish them.
- Resources could be people, equipment or material of different quantities
- This means **COST**
- Regardless of scope or schedule, projects need funds to complete the work.
- In the simplest form, projects may only be dependent on people. In case these people are staff of the same organization, the cost is normally hidden in the overall organization cost … but it is still **COST**.

What happens if you do not have sufficient funds to complete your project or your project went considerably above budgeted cost … **FAILURE**
Understanding the nature of projects

Project Planning Stage – Cost Management

- **How do we know what a project will cost?**

  - There are multiple ways to cost a project. Some of the tools and techniques for project cost estimation are:
    - Expert judgment
    - Bottom-up estimating
    - Analogous estimating
    - Three-point estimates
    - Cost of quality
    - Vendor bid analysis
    - etc…

  - Estimates are based on past projects (historical information)
    - It is less accurate when compared to bottom-up estimation
    - It is a top-down approach
    - It takes less time when compared to bottom-up estimation
    - It is a form of an expert judgment
Module 3: The Project Planning Stage

Understanding the nature of projects

**Project Planning Stage – Cost Management**

- The inputs for cost estimation:
  - Scope baseline and WBS
  - Activities, activity durations and project schedule
  - Project resources
  - Risk register
  - Environmental factors
  - Other aspects such as administrative services and project management activities
  - Buffer costs

- Once projects costs are determined, the project management plan need to be updated with any cost constraints and cost assumptions
Sequence Activities
Team Activity 10

For the same project:
“Automation of Enterprise Project Management Process”
List all the sources of cost that make up the project budget
Module 3: The Project Planning Stage

Sequence Activities
Team Activity 10 – Elements of Cost

- Software licenses
- Vendor/supplier
- Human Resources, own and contractors
- Project management / coordination
- Risks
- HW / Telecommunications
- Tools and office supplies
- Communication means (Internet, Phone, etc..)
- Travel / accommodation
- SW support
- Printing / Documentation
- Training
- etc…