



PROJECT PLANNING AND MANAGEMENT

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PROJECT PLANNING

EAEQ 4206: LESSON FIVE



Project Planning

- Involves those processes that determine the scope of the effort, define and refine the objectives, and develop the course of action required to attain those objectives.
- Planning also involve re-planning. Sometimes the plan may not achievable upon implementation since it is done before actual execution. Where it is not possible to execute the plan it will be important to re-plan the activities
- At all time you should strive to stick by the plan

Project Planning Processes



A Guide to the Project Management Body of Knowledge (PMBOK GUIDE) 4th Edition:

- 1 **Develop project management plan** - the process of documenting the actions necessary to define, prepare, integrate, and coordinate all subsidiary plans. The primary source of information how the project will be planned, executed, monitored and controlled, and closed.
- 2 **Collect requirements** - the process of defining and documenting stakeholders needs to meet the project objectives.
- 3 **Define scope** - the process of developing a detailed description of the project and product.
- 4 **Create WBS** - work Breakdown structure is the process of sub-dividing the project deliverables and project work into smaller, more manageable components.
- 5 **Define activities** – the process of identifying the specific actions to be performed to produce the project deliverables

Project Planning Processes



A Guide to the Project Management Body of Knowledge (PMBOK GUIDE) 4th Edition:

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| 6 | Sequence Activities - is the process of identifying and documenting the relationship among the project activities. |
| 7 | Estimate Activity resources : the process of estimating the type and quantities of material, people, equipment, or supplies required to perform each activity. |
| 8 | Estimate Activities Duration - is the process of estimating the number of work periods needed to complete the individual activities with estimated resources. |
| 9 | Develop schedules - the process of analysing the activity sequences, duration, resources requirements, and schedule constraints to create the project schedule. |
| 10 | Estimate Costs - the process of developing an approximation of the monetary resources needed to complete the project activities |



Project Planning Processes

A Guide to the Project Management Body of Knowledge (PMBOK GUIDE) 4th Edition:

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| 11 | Determine budget - the process of aggregating the estimated costs of individual activities or work packages to establish an authorized cost baseline. |
| 12 | Plan Quality - is the process of identifying quality requirements and/or standards for the project or product, and documenting how the project will demonstrate compliance. |
| 13 | Develop human resource plan - the process of identifying the project roles, responsibilities and required skills, reporting relationships, and creating a staffing management plan. |
| 14 | Plan Communications - the process of determining project stakeholder information needs and defining a communication approach. |
| 15 | Plan Risk management - the process of defining how to conduct a risk management activities for a project. |



Project Planning Processes

A Guide to the Project Management Body of Knowledge (PMBOK GUIDE) 4th Edition:

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|----|--|
| 16 | Identify Risks - the process of identifying which risks may affect the project and documenting their characteristics |
| 17 | Perform qualitative risk analysis - the process of prioritising risks for further analysis or action by assessing and combining their probability of occurrence and impact. |
| 18 | Perform quantitative risk analysis - the process of numerically analysing the effect of identified risk on overall project objectives |
| 19 | Plan Risk responses -the process of developing options and actions to enhance opportunities and to reduce threats to project objectives. |
| 20 | Plan Procurements - the process of documenting project purchasing decisions, specifying the approach, and identifying potential sellers. |



Work Breakdown Structure

1. Breaking down the project into its component parts.
2. Breaks down the project into smaller manageable tasks/activities.
3. There tasks may be:
 - *Summary tasks* e.g. Roofing
 - *work packages* e.g. Prepare trusses, lay tiles, fit soffits
4. Summary tasks is just a heading and not executed.
5. Summary tasks is broken down into work packages which are executed lead to completion of the work summary.



Work Breakdown Structure

WBS can be created in a number of Forms

1. Using project life cycle as first level of decomposition
2. Using major deliverables as the first level of decomposition
3. Using subprojects which may be developed by organisations outside the project team such as subcontracted work



Work Breakdown Structure

HOUSE UNDER CONSTRUCTION

1-Summary tasks

- Preliminaries
- Substructure
- Walling
- Roofing
- Windows
- Doors
- Fittings
- Exterior Finish
- Interior Finish
- Painting
- Plumbing
- Drainage
- Electrical Installation
- Roads/Paths

Work package



1. Buy the paints
2. Prepare the surface
3. Mix the paint
4. Apply 1st coat of paint
5. Apply 2nd coat of paint
6. Apply 3rd coat of paint



Work Breakdown Structure

1. *8/80 Rule* – no project should be more than 8 hours and more than 80 hours (1 day and 10 days).
2. Reporting period rule – the task should not be longer than the period between status reported if a reporting time is weekly, the task should not be longer than one week.



Work Breakdown Structure

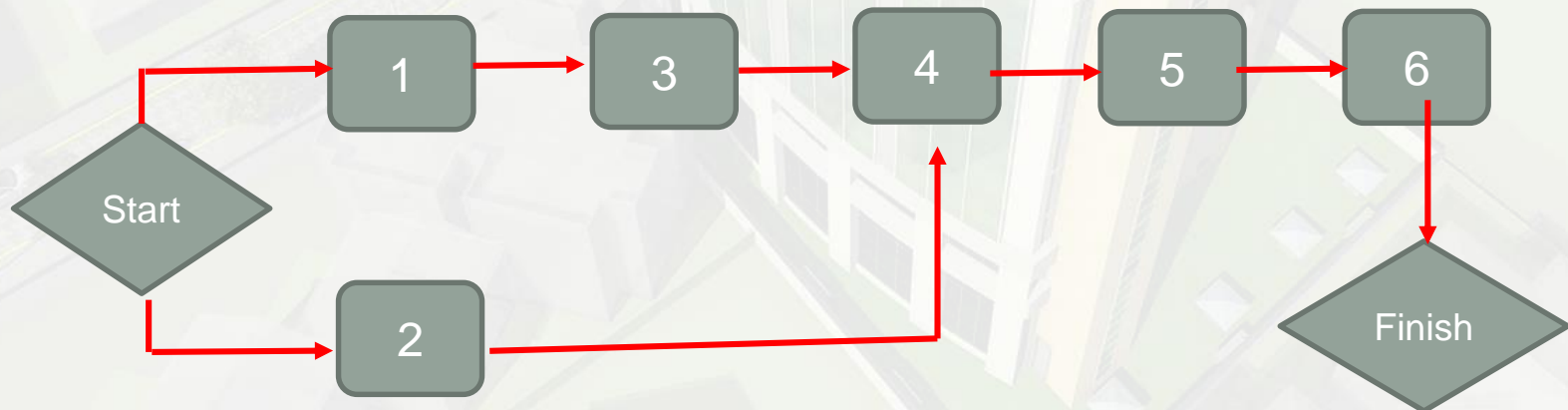
Importance of WBS

1. Provides a detailed illustration of project scope
2. Helps in monitoring the progress of project
3. Create accurate cost and schedule of estimates
4. Build project teams
5. Provides communication tool in the project
6. Tasks are easier to estimate
7. Tasks are easier to assign
8. Tasks are easier to track



Network Diagram

1. Buy the paints
2. Prepare the surface
3. Mix the paint
4. Apply 1st coat of paint
5. Apply 2nd coat of paint
6. Apply 3rd coat of paint





Sequence Activities

1. The process of identifying the relationship between work packages
2. The sequencing of the project is determined by the relationship between activities
3. The sequencing above are the ones used in project management software's e.g. MS Project
4. The relationships can be:
 - a) **Finish to Start** - the predecessor has to be finished before the successor can start.
 - b) **Finish to Finish** - the predecessor has to be started before the successor can be finished.
 - c) **Start to Start** - the predecessor has to be started before the successor can be started.
 - d) **Start to Finish** - the predecessor has to be started before the successor can be finished.



Sequence Activities

Milestones

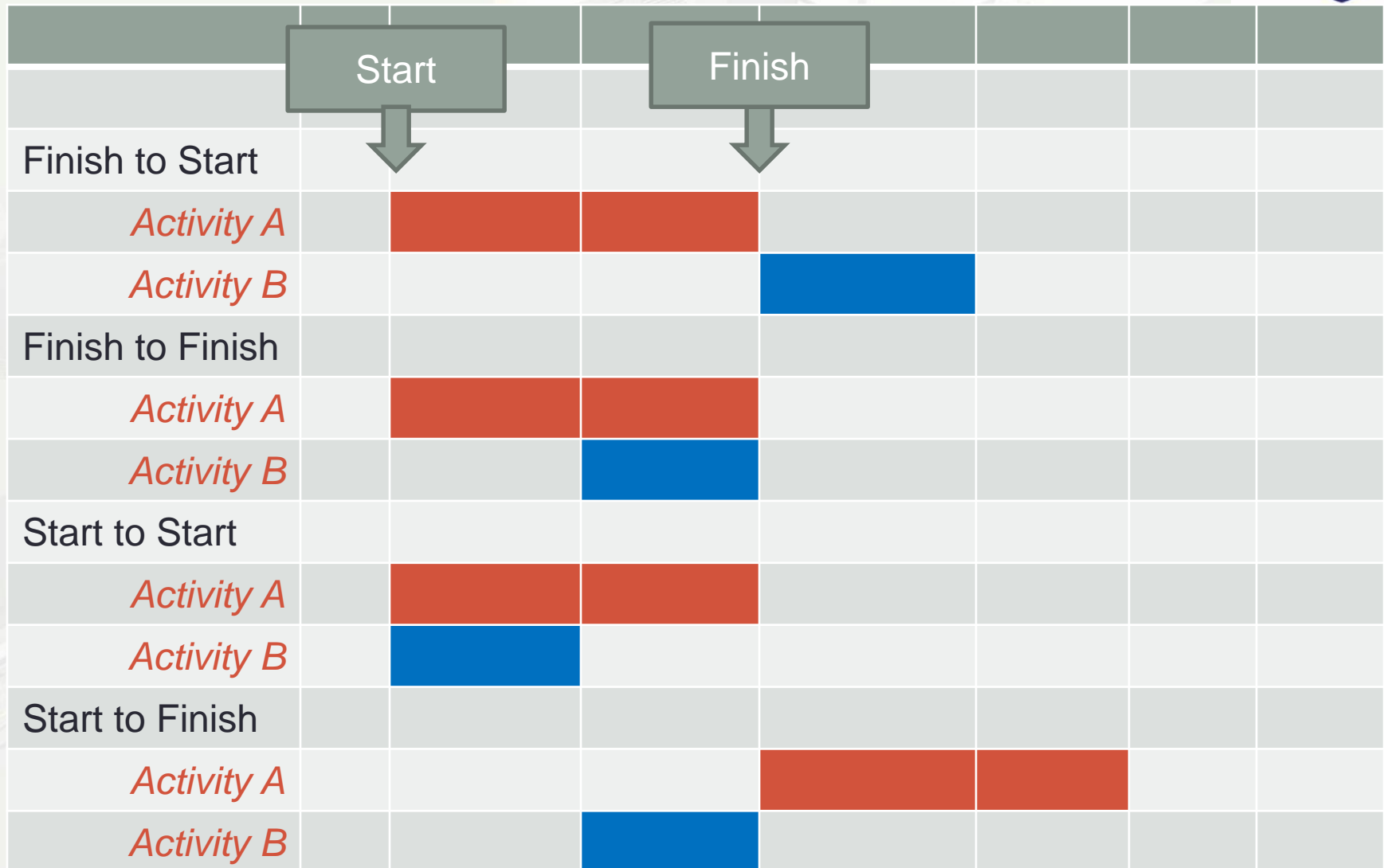
1. These have zero duration
2. They denote achievement or review in the project schedule.

Critical Path

1. The critical path is the longest path through a network and determines the earliest completion of project work.



Sequence Activities





Gantt Chart

S/N	Activity	Hrs							
	Painting								
1	Order for the paints	8							<div style="border: 1px solid black; padding: 5px; display: inline-block;"> Milestone Inspect works </div> <div style="text-align: center; margin-top: 10px;"> </div>
2	Prepare the surface	16							
3	Mix the paint	2							
4	Apply 1 st coat of paint	6							
5	Apply 2 nd coat of paint	8							
6	Apply 3 rd coat of paint	8							
7	Close project								



Costing the work package

1. Labour cost
 - Hours and hourly rate (2 persons x 8 hours = 16 hours @Kshs.1,500/-)
2. Equipment costs
 - Hourly rate
3. Material costs
 - Raw material
 - Sub-components
4. Fixed price bid (sub-contacted work).



Costing the work packages

S/N	Activity	Hrs					
	Painting						
1	Order for the paints	8			150,000		
2	Prepare the surface	16			@500		
3	Mix the paint	2			@5,000		
4	Apply 1 st coat of paint	6				@1,500	
5	Apply 2 nd coat of paint	8			@5,000		
6	Apply 3 rd coat of paint	8			@5,000		



Further Reading

1	Project Management Institute, 2008	A Guide to the Project Management Body of Knowledge (PMBOK GUIDE) 4th Edition
2	James P. Lewis 2007	Fundamentals of Project Management, Third Edition, AMACOM, New York
3	Eric Verzuh 2003	The Portable MBA in Project Management, John Wiley & Sons, inc.
4	John M. Nicholas, 2004	Project Planning for Business and Engineering, Principles and Practice, Second Edition, Elsevier Butterworth–Heinemann
5	F. Lawrence Bennet 2003	The Management of Construction, A Project Life Cycle Approach,