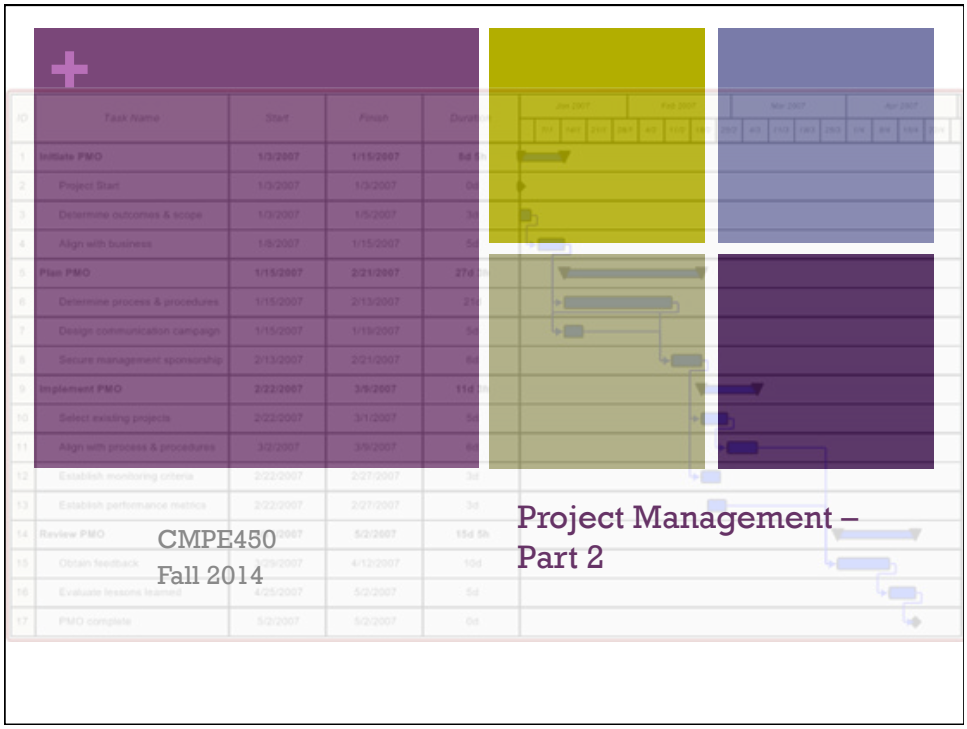

Project Management – Part 2

CMPE450
Fall 2014

Who

needs to do **what**

by **when**

Project Management Process

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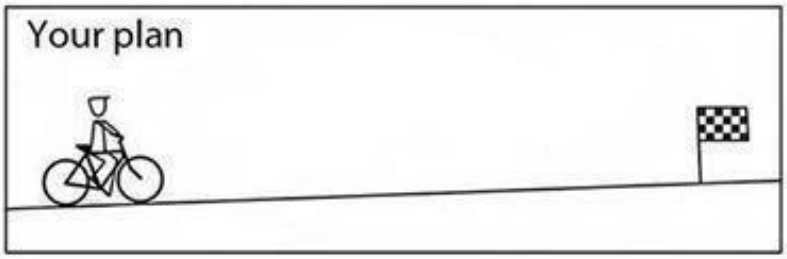
1. Identify needs
2. Propose solution
3. Planning
4. Scheduling
5. Performing/monitoring
6. Terminate the project

4



4. Project Scheduling

5

4. Project Scheduling

6

- All about activity durations
- Integrate into the network diagram (or Gantt chart) to provide an overall schedule for the project
- Identify which tasks are on the "critical path"
- Locate opportunities to accelerate work or reduce risk

Durations

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- Each task must have a duration
- This represents how long the task will take to complete
  - This is based on how much work it is and how many resources you have to do it
  - It may also be based on waiting time, delivery estimates, manufacturing process time, etc.
- Those responsible for a task should estimate its duration
- More accurate when based on historical data or when done by dedicated estimators

Calculating Durations

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- $t = (t_o + 4t_m + t_p)/6$
- t_o - optimistic time (if everything goes correctly; 10% of the time)
- t_m - most likely time
- t_p - pessimistic time (under adverse circumstances; 10% of the time)

Constraints

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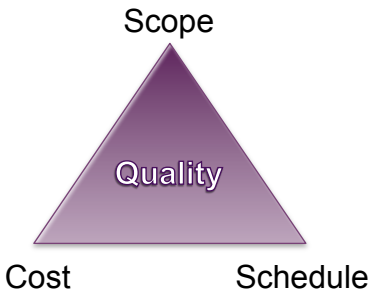
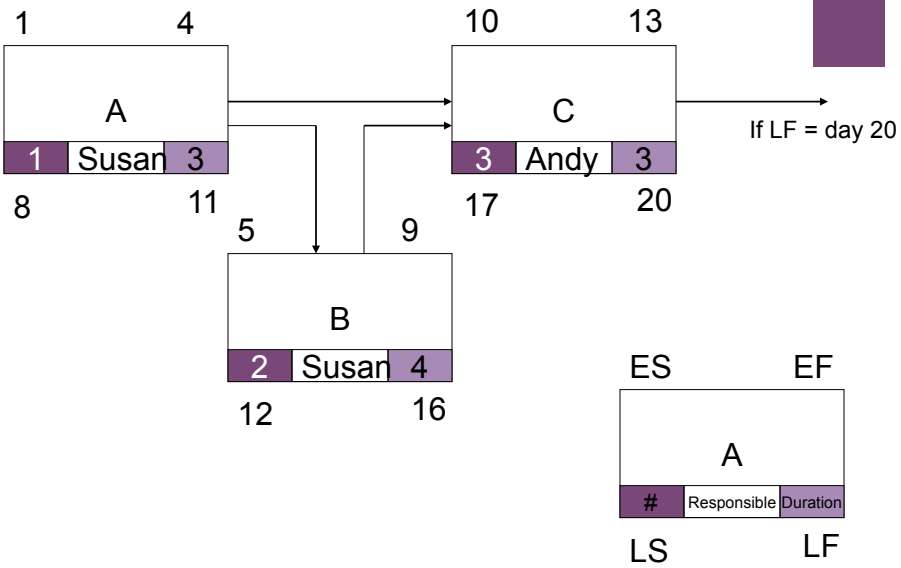
- Fixed start date
- Fixed completion date
- Fixed budget
- Fixed resources
- Start as soon as possible
- Start as late as possible



Calculating Dates

10



Critical Path

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- Slack – amount of time available to adjust when a task is performed
  - Slack = LF-EF or LS-ES
- If slack = 0, the task is on the Critical Path
- If a task on the Critical Path slips, the whole project slips

5. Performing/Monitoring

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5. Performing/Monitoring

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- You planned the work…

…now you work the plan!

- Monitor the project; keep it on schedule
- Identify when problems occur and be able to react to them
- Minimize the impact of potential risks
- Ensure customer satisfaction

Network Diagram

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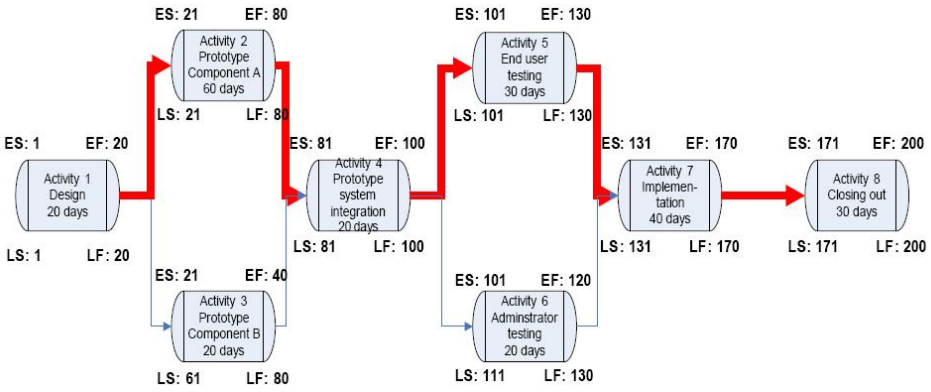

Gantt Chart

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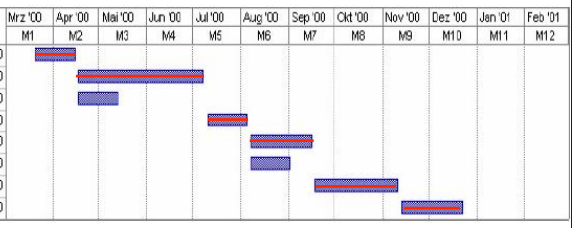
Nr.	Activity	Dauer	Anfang	Ende
1	Design	20 Tage	Mo 20.03.00	Fr 14.04.00
2	Prototype Component A	60 Tage	Mo 17.04.00	Fr 07.07.00
3	Prototype Component B	20 Tage	Mo 17.04.00	Fr 12.05.00
4	Prototype system integration	20 Tage	Mo 10.07.00	Fr 04.08.00
5	End user testing	30 Tage	Mo 07.08.00	Fr 15.09.00
6	Administrator testing	20 Tage	Mo 07.08.00	Fr 01.09.00
7	Implementation	40 Tage	Mo 18.09.00	Fr 10.11.00
8	Closing out	30 Tage	Mo 13.11.00	Fr 22.12.00



Schedule Control

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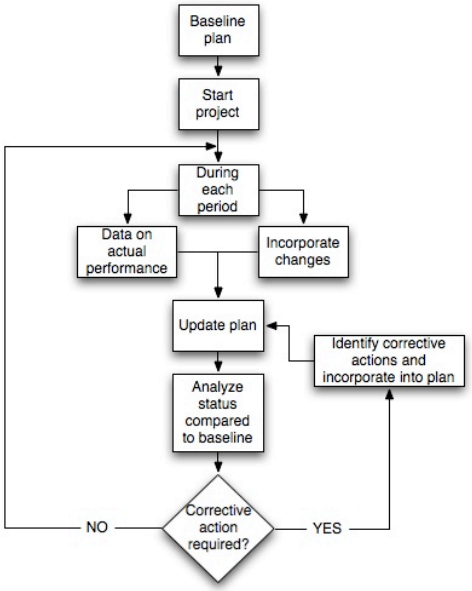

Progress Reporting

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- Compare actual progress to the plan
- Compare actual costs to budgeted costs for each reporting period and cumulative
- Compare actual cost to actual project progress
- How do you measure % completion?
  - Elapsed time
  - % of total effort (generally quantized to 25% or so)
  - % of budget spent
  - Earned value (another lecture)

PM Process Summary

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- Project Management is about **who** needs to do **what** by **when**
- Work breakdown structure organizes activities into packages of activities
- Network diagram and Gantt chart to show sequence of activities and durations; critical path
- Resource allocation and budgeting

Proverbs of Project Management

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- Projects progress quickly until they become 90% complete; then remain at 90% complete forever.
- If project content is allowed to change freely, the rate of change will exceed the rate of progress.
- You cannot produce a baby in one month by impregnating nine women.
- The conditions attached to a promise are forgotten and the promise is remembered.
- Of several possible interpretations of a communication, the least convenient one is the only correct one.
- What is not on paper has not been said.
- A user will tell you anything you ask about – nothing more.
- Parkinson and Murphy are alive and well – in your project.

Project Schedule Example

Consumer Market Study

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Consumer Market Study

- A small company wants to collect information about potential customers using a questionnaire
- The project involves the creation of the questionnaire, mailing it, collecting responses and developing software for analyzing the results.
- There are 4 people on the team: Susan (Marketing), Steve (Admin), Andy (Software), and Jim (boss)
- Objective: Obtain feedback from target consumers about product offerings using a print questionnaire within 6 months

Consumer Market Study - WBS

1. Questionnaire
   - 1.1 Identify target consumers
   - 1.2 Develop draft questionnaire
   - 1.3 Pilot-test questionnaire
   - 1.4 Review comments & finalize questionnaire
2. Software
   - 2.1 Develop data analysis software
   - 2.2 Develop software test data
   - 2.3 Test software
3. Distribution
   - 3.1 Prepare mailing labels
   - 3.2 Print questionnaire
   - 3.3 Mail questionnaires & get responses
4. Analysis
   - 4.1 Input response data
   - 4.2 Analyze results
   - 4.3 Prepare report

Consumer Market Study

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#	Activity	Responsible				Predecessor	Duration
		Susan	Steve	Andy	Jim		
1.1	Identify target consumers	P				-	3
1.2	Develop draft questionnaire	P				1.1	10
1.3	Pilot-test questionnaire	P				1.2	20
1.4	Review comments and finalize questionnaire	P			S	1.3	5
3.1	Prepare mailing labels		P			1.1	2
3.2	Print questionnaire		P			1.4	10
3.3	Mail questionnaire & get responses		P			3.1, 3.2	65
2.1	Develop data analysis software			P		1.4	12
2.2	Develop software test data	P				1.4	2
2.3	Test software			P	S	2.1, 2.2	5
4.1	Input response data	S			P	3.3, 2.3	7
4.2	Analyze results	S			P	4.1	8
4.3	Prepare report	S			P	4.2	10

Team Exercise: Consumer Market Study

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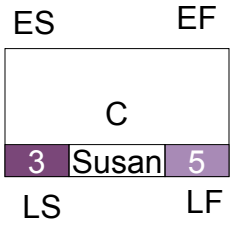
- Given:
  - List of activities, responsibilities, and predecessors, durations
- Create the network diagram
  - Include activity # or WBS identifier
  - ES, LS, EF, LF
  - Assume the project must be completed in 130 days
  - Find slack for each task
  - Critical path



Results

- What do you conclude from this analysis?
- What is the critical path?
- What could you do to get project on track to complete in 130 days?