Chapter 6 Lecture

Scheduling

What do we mean by budget?

Pausch in his talk says that we should trade time for money when we have the opportunity:

ie: Lawn Service

Complexities of Scheduling

- Vacations
- Sick Days
- Religious Observation
  - Ramadan
- Holidays
  - 4th of July
- Weather
- 3rd Parties (Vendors, Govt, Contractor)

Triple Constraint

Although not mentioned in the PMBOK it is a commonly used term.

Quality is the most recent addition and is sometimes referenced as customer acceptance.

Planning Schedule Management

Developing the PLAN of how we will:

- Define Activities
- Sequence Activities
- Estimate Resources
- Estimate Durations
- Develop the Schedule
- Control the Schedule

The Tools

We can use the plan to define specific items as well:

- Will we utilize specific files, calendars, or software tools.
- Do we have predefined level of accuracy.
- How will we report performance?

(More on pg. 209)

Performance Reporting

Earned Value Management (EVM)

Before we "get to work"

- Project Scope
- WBS
- WBS Dictionary
- Work Packages
- Schedule Activities

Project Decomposition

Idea -> Charter
Charter -> Scope
Scope -> Deliverables
Deliverables -> Work Packages

WP's are the smallest item in the WBS

Work Packages break into schedule activities.

The PM might break down step by step or break down in a single swoop.

Process doesn't matter.

Using Templates

- Might be a re-work of an existing project. What have we done before that is similar?
- Organizations may have defined criteria.
- Benefit of a PMO.

Rolling Wave

- Phases are planned while the project is executed.
- Concentration is on short term, more immediate impact items.

Expert Judgement

- Trust your team and others to contribute.
- If you can't trust their input why did you ask for it?
- The PM will not always be the SME.

What Should Activities Say?

- Depending on complexities we can log many other qualities and traits.
- Once this data is logged we could report or search on it.
- Some data may be quantitative while other fields are qualitative.

p. 214

Sequencing Activities

- Identify Logical Relationships Between Items.
  - I must dig the foundation
    - Before I pour concrete
- Look for words like "before" "after" "while".

Pseudo Code

- Technique in programming where common English and short hand are utilized.
  - When thermostat is 75F run air conditioner if temperature is over 75F.
- Use a similar technique with your first stage of sequencing.

Sequencing Can Be Done

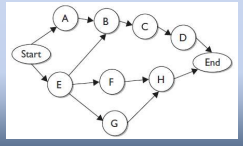
- With Software
- Manually
- Hybrid Approach

You should always know and understand the manual techniques.

Network Diagrams

- Visual "map" of project activities.

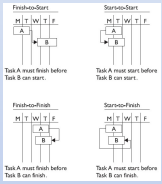
- "PDM" circle or box based Nodes
- Arrows represent relationships.



Activity Relationship Types

IMPORTANT

FS Finish to Start
SS Start to Start
FF Finish to Finish
SF Start to Finish



Dependency Types

- Mandatory
- Discretionary
- External
- Internal

Lead and Lag

Lead "Bonus Time" Starting a task earlier. The next item starts sooner.

Lag "Waiting Time" Delay of an item. The next activity starts later.

Resources

Very broad range of items that are necessary for project success: people, money, tools, equipment, etc.

- Resource Calendar
  - When are things available?
- Project Calendar
  - When will work take place?

Alternative Analysis

- Consider other ways to meet the need of the project.
- How can we change our people, tools, materials, etc.
- Can we purchase an item?
- Can we hire it out?
- Is there reuse or modularization?

Estimate Activities

- Bottom-Up
  - Ask the people who will do the work to help determine the time needed.
- Top-Down
  - Management determines.

Three Point Estimation

- I want to ride 50 miles on my bike.
  - Fastest 2.5 Hours
  - Slowest 10 Hours
  - Most Likely 4 Hours

(2.5 + (4 x 4) + 10) / 6 = 4.75 Hours

Factoring Reserve Time

- Hidden Time
- Procrastination
- Demands
- On Schedule

- We will USE the time allocated.

If I tell my daughter she has 2hrs to clean her room, how long will it take?

The Goal

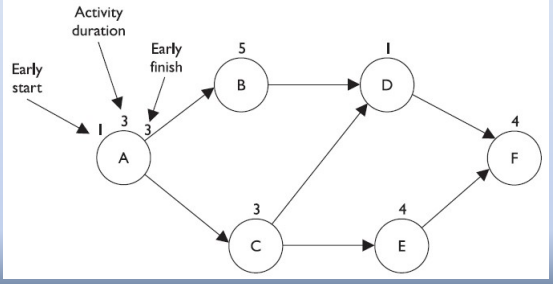
Complete the Project as FAST as possible without incurring extra expense, risk, or loss of quality.

Critical Path

Identify the longest path through our various phases of the project. The Critical Path is the one that if affected would delay the project.

Utilizes float/slack and forward/backward passes.

Reading the Network



Modifying the Schedule

- Crashing
  - Add additional resources to complete the project faster.
- Fast Tracking
  - Change the sequencing of events.

Resource Leveling

- Analyze if one individual or group is doing all the work.
- Ensure hours are distributed.
- Ensure equipment is being utilized.

Critical Chain (p236)

- Eliminates Bottlenecks
- Allows for Feeder Buffers
  - (extra time)
- By knowing the path we know where to concentrate extra efforts.

Using Software

- Software is a TOOL
  - It cannot replace common sense.
  - You need to be able to explain the calculations.
  - Remember issues with versioning, accessibility, etc.
  - Costs include the training, equipment, and licensing.

The Schedule Must

- Indicate the Start
- Post the Ending
- Be finalized through allocation of resources.

PM's Track Variance

- When should the item stop?
- When did it stop?
- What was the margin of error?

Changes Must

- Be recorded.
- Considered for impact.
- Be communicated.

- In Major incidents the entire schedule may have to be rebaselined or rewritten.