



Plan Your Work, Work Your Plan

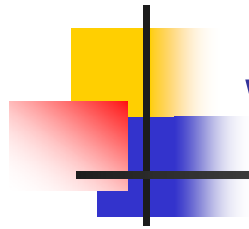
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Agenda

- Understand what a project is
 - Understand the basics of project management
 - Utilize Microsoft Project as a visual teaching tool
- Main topics (overview of each)
 - Planning a project
 - Assigning resources and cost
 - Understanding and managing critical tasks
 - When to develop a baseline
 - Tracking
 - Report generation



What is a Project?

A series of related tasks that you need to complete to reach a goal, and having a specific start and end time



Why Project Management?

- Companies look for students who have:
 - Communication skills
 - Project management skills
 - People skills
- Responsible for people and costs
 - How do you know if project will succeed or fail?
- Help identify problems early on
 - For example, are you on track in your research?

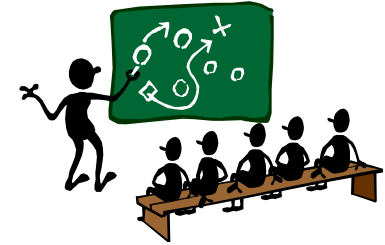


What is Project Management?

- Managing and directing time, materials, personnel and cost to complete a project
 - Meet objectives of time, cost and technical results
- Three phases
 - Planning – What work has to be done
 - Development of tasks and relationships
 - Scheduling – When the work has to be done
 - Refinement of plan and allocation of resources
 - Controlling – Monitoring and managing the plan



Developing a Project



- Identify tasks and estimated duration
- Identify milestones
- Relate the tasks in a logical fashion
- Allocate resources (people, equipment) to tasks
- Identify and fix potential problems (time/resources)
- Fix baseline
- Monitor, manage and report



Microsoft Project

- Tool to enter project based data
 - Enter via spreadsheets
- Obtain different combinations of this data
 - Graphs, charts, reports
- View different scenarios
 - See effects of various changes
- Need person's knowledge of project management



Different views - Basic

- Gantt Chart
 - Basic view
 - Each task is a horizontal bar across timescale
 - Length of bar is the time for the task
 - Can also see links and resources
- Network Diagram
 - Used to be known as PERT chart
 - Each task is node – size not dependent on time
 - Information in each node
- Calendar
 - For non-project people



Other views



- Series of charts and tables
- Tracking Gantt, Resource graph/sheet/usage are the most common other views
- Can also modify combinations of charts and tables
- Show *Product Launch* file

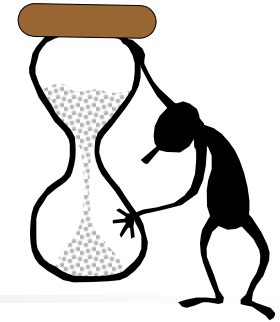


Defining tasks

- Start with date – Project...Project Information
 - Schedule from decision
- Organize them in hierarchal structure
 - Called WBS (Work breakdown structure)
 - Various relationships such as finish to start, start to start
- Duration of the tasks
 - Historical
 - Participative
 - Educated guess
 - Can be in weeks, days, hours or minutes
 - Why not years?



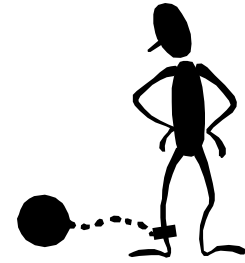
Milestones



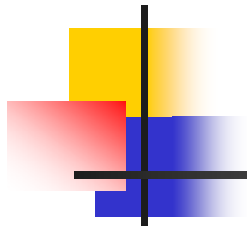
- Event or condition that marks the completion of a group of tasks
 - Can also be used for starting and ending the project
- Zero time
 - Produces different shape and date



Linking tasks



- Tasks need to be linked together
 - How are they related
 - Talk about building a house
 - Can easily do that with a tool
- Once linked, need to think about relationships
 - Have four different combinations (three make sense)
 - Can change them, and affect project deadline
 - What makes sense?



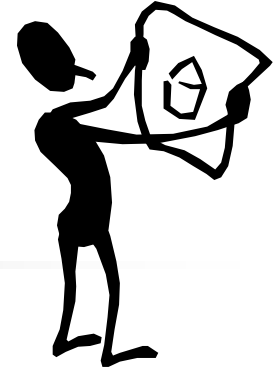
Lead and Lag



- Describe example with pouring concrete
- Can be used to make it more “real life”
 - Don't always wait until one task completely ends before starting another
- Very useful in changing deadlines



Planning Methods of a Project



- Top down
 - Have basic top level tasks
 - Insert tasks as needed, then create summary tasks
- Bottom up
 - List of all task
 - Move tasks around, and relate them
 - Create summary tasks



Summary Tasks

- Use indent button to create them
- Can show or hide subtasks
- Shows duration of all subtasks
- Do not relate to other tasks
 - Relate subtasks to subtasks
 - In some cases use milestone as end of summary tasks



Timeline



- Can modify the timeline
- Can zoom in and out
 - Adding more tasks will push project out further



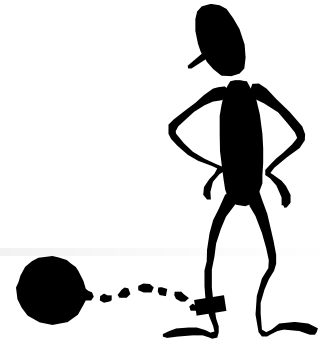
Calendar – Project



- Use Tools... Change Working Time
- Want to modify the standard calendar
 - Holidays and correct working time
- Could make a copy
- Will affect project schedule
 - Initial calendar doesn't have any holidays other than weekends
- Will create separate resource calendar for each resource
 - Based on this base calendar



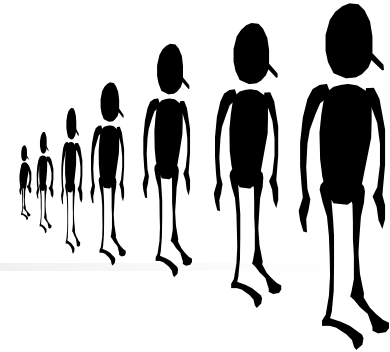
Constraints



- Many times cannot float task
 - Dependent on date for finishing or starting
- Put constraint in Task Information dialog box
 - In Advanced tab
- Limit the flexibility of Microsoft Project when using constraints



Resources - Types



- People
 - Managers, programmers, engineers, technicians
- Equipment
 - Computers, trucks, copying machines
- Facilities
 - Conference rooms, warehouses



Resources – Identify for your project

- Use general titles rather than name
 - Can assign to groups
 - Identify costs
 - Identify specific calendars
- Identify equipment
 - Only equipment needing special arrangements
- Identify facilities



Critical Path



- Want to observe what tasks are on critical path
 - Define it
 - Define why these tasks are important
- Can use Tracking Gantt to show red boxes
 - Tasks on critical path
 - As opposed to Gantt Chart Wizard (on toolbar)



Problems - Resource

- Key one is over allocation of resource
 - May need resource leveling
 - By delaying a task until the assigned resource has time to work on it
 - By splitting a task, so that part of a task is done when planned, and the rest of it is done later when the assigned resource has time
- Identify with Resource Graph or Resource Usage
- Can have problems with constraints
- Delaying tasks might delay project



Problems – Deadline/Cost

- Exceeded deadline or cost
- Deadline
 - Need to look at relationships with tasks
 - Allocating additional resources
 - Duration of tasks realistic
- Cost
 - Delay project
 - Alternative resources

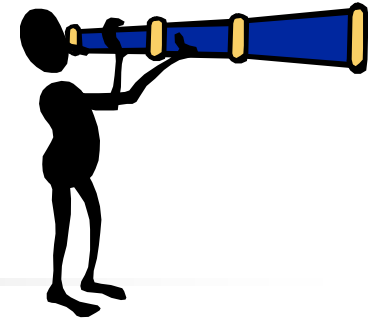


Baseline

- When all problems resolved, create Baseline
 - Tools...Tracking
- Baseline should be fixed
 - Moving baseline has no meaning
- Want to compare future progress against baseline
 - Tracking Gantt and Tracking toolbar



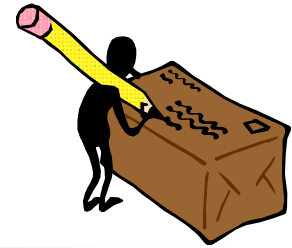
Tracking



- As tasks are completed, need to mark them
 - Can show partially completed tasks
 - Will see costs as they are incurred
- Might have to reschedule work if delayed
 - Tracking Gantt is very important
 - Shows how you are doing vs. baseline
 - Will see effect on cost and deadline



Reporting



- Large number of standard reports
 - Overview, costs, assignments and workload
- Can customize
- Can use filters to view or report
- Can copy Gantt chart into Word document
- Can save project as web page