

Basic Project Management & Planning

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What is Project Management?



 A set of principles, methods, tools, and techniques for the effective management of objective-oriented work in the context of a specific and unique organizational environment.



Schedule

A deadline can be established - the project team works towards a designated end date

A discreet technical objective

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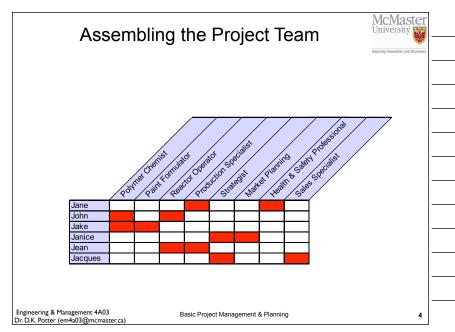
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Project Management Process Tasks



- Assembling a project team with the required expertise
- Defining the project scope and objectives
- Planning
- Managing scope changes
- Controlling the project



The Five-Step Planning Model



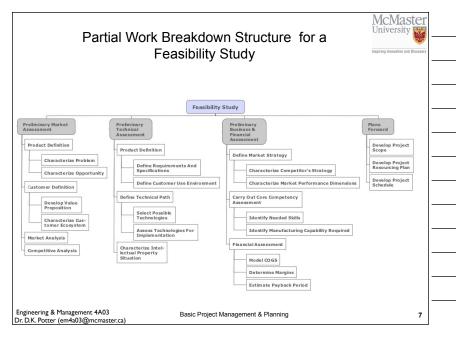
- · Define the Project
 - review and agree upon the deliverables
- · Model the Project
 - produce a work breakdown structure and network diagram
- Estimate and Schedule the project
 - estimate the duration, the level of resourcing and the budget
- Balance the plan
 - ensure resourcing can deliver the tasks (in consideration of competing projects, etc.
- Approve and publish the plan

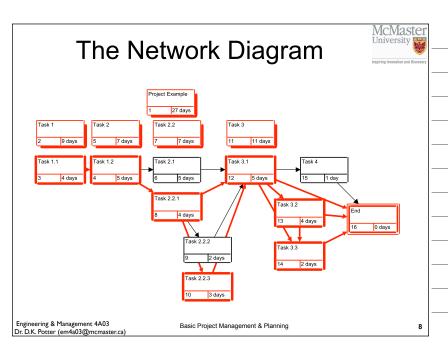
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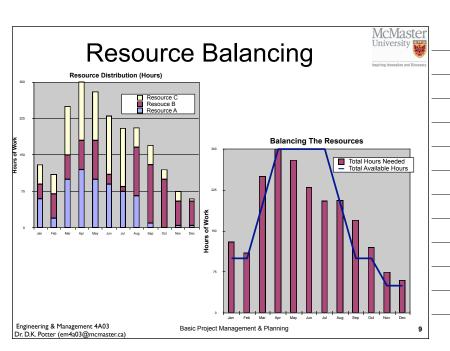
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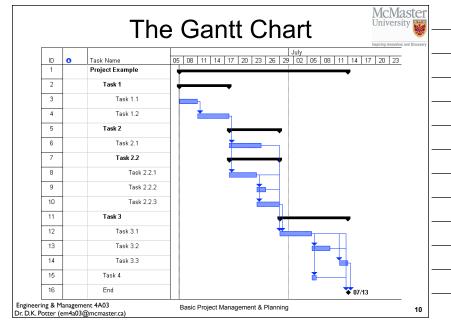
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Work Breakdown Structure Project Task A Task B Task C Sub-task A1 Sub-task B1 Sub-task B1.1 Sub-task B1.2 Sub-task B1.1 Sub-task B1.1 Sub-task B1.2 Sub-task B1.1 Sub-task B1.2







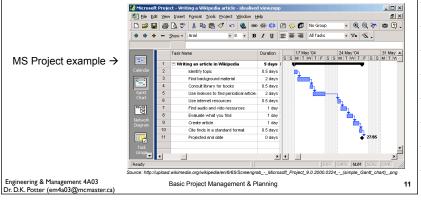


Project Management - Gantt Chart Assignment

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Notes on symbology for your Gantt chart (commonly seen):

- Horizontal bar: shows task duration
- Horizontal or Vertical lines with arrows: connects task precedence
 - Diamond: key milestones
- Indentation of tasks: visually separate stages/phases of work



Project Management Terms



- Task a piece of work to be undertaken.
 - Duration estimated start and end date.
 - Predecessor what tasks must be finished prior to it starting.
 - Successor what tasks may started after the task finishes
- **Deliverables** tangible outcome produced by the project.
- Milestones a significant accomplishment in the project.
- Resources assets (people, equipment, etc...) required for the project.
- Loaded Cost the per hour resource cost.
- **Critical Path** the sequence of tasks (usually a subset of all the tasks) that must be completed schedule for the entire project to be completed on schedule.
- Baseline the original project schedule and resourcing (cost) with which the current status of the project is compared.
- Gantt Chart visual PM representation. Bar chart showing tasks, start/end dates, predecessors, successors, resources, critical path, etc... Living document as a project moves forward (ie – input to Status Reports).

Project Risk Analysis and Management



- <u>Risk</u> is the (usually unknown) event or factor that leads to a changed or different outcome.
- <u>Uncertainty</u> is the range of outcomes that are possible, given the existence of risk.
- <u>Chance</u> is the uninfluenced possibility of a change in the expected outcome.
- "When you play a game of <u>chance</u>, the <u>risk</u> of losing is high because of the high degree of <u>uncertainty</u> of the outcome."

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- Risk analysis is about understanding what needs attention
- · Basic Steps for Risk Analysis
 - Identify the potential risks
 - · do not rely on checklists alone, consult the team, talk to experts.

Risk Analysis

- Assess their impact
 - · how probable is the risk?
 - · The simplest categorization is high or low
 - · what are the possible range of outcomes
 - outcomes most commonly considered include cost, work effort required, elapsed time and acceptability of end product
 - · what would be the impact of the outcomes?
- Develop strategy and tactics for dealing with them
 - risk management
 - dealing with the risks
 - avoiding unacceptable risk events, particularly the high impact ones.

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Risk Types



- Business Risk
 - Market
 - Financing
 - Shareholder
- Technological Risk
 - Robustness
 - Complexity
 - Ownership

- Societal Risk
 - Environmental
 - Socioeconomic
 - Political
- Project Delivery Risk
 - Duration
 - Size of Project
 - Complexity
 - Definition and Volatility

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Specific Project Risk Factors

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- Schedule
 - Tasks on the critical path
 - Task that have several predecessors
 - Tasks that have minimal floats
 - Optimistically estimated tasks
 - Tasks reliant on external dependencies, such as vendor shipments
 - Major milestones
- Resources
 - Tasks with one individual working alone
 - Tasks with many people assigned
 - Tasks using scarce resources
 - Underskilled or unqualified people
 - Illness and turnover

- Budget
 - Uncertainty of funds
 - Shifts in budget priorities
 - Uncertain resource costs
- Scope
 - Uncertainty of new product development
 - Dynamics of customer requirements
 - Availability of tools and/or techniques
 - Large number of defects

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Sensitivity Analysis



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- Sensitivity of the Financial Model
 - build a financial model of the project
 - forecast future outcomes of the project investment by changing one variable at a time and observing the change in outcomes forecasted
 - the factors that produce the largest change in outcomes, and are most probable, represent the risk factors that need attention.
- Sensitivity of the Risk Model
 - look at what could go wrong and assess the impact of that event on the project.
 - Develop alternatives for high probability, high impact risks.

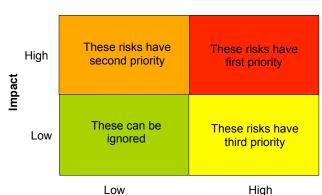
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Simple Risk Assessment Matrix



Probability

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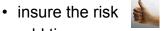
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High

Risk Management Options



- Ignore the risk



- add time, money, or a Plan B as contingency
- · avoid or eliminate the risk
- · contract the risk to others
- share the risk with others
- cancel the project





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Guidelines for Contingency Planning



- Schedule
 - negotiate deadlines of high risk tasks to accommodate potential slippage
 - schedule tasks that can later be postponed or canceled later in the project if necessary
 - be conservative in duration estimates for tasks on the critical path
 - take contingency into account in the schedule
- Plan
 - reassign strong team members to high-risk and critical path tasks
 - assign a team member as a backup to critical tasks
- Documented Backup Plans
 - preventative actions that will be taken to reduce or remove risk
 - contingent actions that can be implemented if a problem occurs
 - the circumstances that would result in the use of the contingency plan

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Questions?