

Project Management

- Project Managers
 - the functions of management
 - qualities and abilities of a good manager
- Project Status
 - gathering status
 - status reporting
- Project problems
 - warning signs
 - common problems and solutions
- Introduction to Project #5 (design review)

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functions of management

- Planning
 - project activities, schedules, budgets
 - ensure these are reasonable and understood
- Organizing
 - teams (not just groups) to solve problems
 - ensuring they are chartered & resourced for success
- Staffing
 - recruiting, training, career development, performance management, compensation
- Controlling
 - direct execution, monitor progress, adapt to challenge

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Good Management

- Improves communications up and down
 - delivers key messages while filtering noise
 - actions are in accord with their messages
- Is rational and deliberate
 - avoid premature actions or over-reactions
 - decisions are made on the basis of data
- Is adaptive and responsive
 - adapt processes to match each problem
 - monitor situations and respond quickly
- Allows people to grow and contribute
 - provides manageable opportunities
 - gives people latitude to do their jobs

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Management Skills

- Personal Characteristics
 - honesty, fairness, diligence, good under pressure
- Communication
 - listening, presentation, feedback
 - keeping other people informed
- Leadership
 - inspiration, motivation, persuasion, selling, consensus building
 - organization, decision making, delegation, support
- Problem Solving
 - analyze problems, identify & weigh options, structure solutions
- Negotiation and Conflict Management
 - reading people and situations, identifying key issues
 - techniques for dealing with people & situations

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Gathering Project Status

- automated reports
 - test execution summaries
 - bug status reports
 - integration orders
- regular status reports
 - what you've been doing for the past few days
 - progress vs. schedule, milestones achieved
 - problems that have come-up
 - expectations for the next reporting period

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Reporting Project Status

- Brief
 - current responsibilities, and status of each
 - issues that need broader exposure
 - bottom line summaries of complex situations
- Candid
 - don't try to deny or minimize problems
- Open
 - status reports should be public
- Objective and Factual
 - assessments should be supported by data
 - avoid explanations, excuses, and speculations

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Star-Crossed Projects (cursed from birth)

- Business needs are poorly understood
- Product goals or scope are poorly defined
- Developers don't understand customers' needs
- Customers don't want this product
- Product has no sponsor (champion)
- Unrealistic deadlines
- Unproven technology
- Team lacks required skills or other resources
- Developers don't understand the plan

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Failing Projects

- Scope Creep
 - new requirements continue to be added
- Poorly managed change
 - waste due to uncontrolled disruptive change
- Continuous slippage
 - well outside expected problems
- Poor communication
 - among developers, w/management and other groups
- Poor decisions
 - indecision, bad decisions, second-guessing

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Project Status Warning Signs

- working on unscheduled tasks
 - legitimate outside emergencies
 - legitimate emergencies within the project
 - inappropriate activities
- on-task, but not making milestones
 - blocked by dependencies on others
 - delayed by unexpected problems
 - progress is simply slower than expected
- continuous slippage
 - getting farther behind with each report

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Dealing with Isolated Problems

- legitimate emergencies
 - can they be better handled by someone else?
- dependencies
 - remove the blockage or schedule around it
- unexpected problems
 - develop a plan to analyze and resolve them
- scope creep
 - manage the process, prioritize carefully
- productivity and focus problems
 - help, more direct guidance, reassignment
- revise schedule, reassess feasibility

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if schedule becomes impossible

- there are only four options
 - reduce the scope of the project
 - deferring lower priority features to a later release
 - be willing to ship a lower quality product
 - extend the development schedule
 - sometimes this is possible
 - you get to do this, at most, one time
 - add more resources to the project
 - doesn't work as well as you might think
 - abort the project and cut our losses
 - better to do this sooner, rather than later

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adding more resources

- is it possible?
 - can current people be relieved of other tasks
 - can people be transferred from other projects
 - are there people with the required skills
 - finding and hiring new people takes forever
- would it help?
 - new people would have to come up to speed
 - this can take a long time
 - helping them reduces productivity of current staff
 - are there tasks to which they can be applied

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“management must manage”

- impossible situations are the norm
 - everyone has unrealistic expectations
- following an unfeasible plan is folly
 - this is a planned failure
- management must find a viable solution
 - work with customers to refine requirements
 - work with engineers to find creative solutions
 - monitor progress to identify new risks
 - formulate prompt and effective response

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Project #5 – Design Review

- As a team:
 - lay out a master schedule
 - choose a module to be reviewed
 - conduct a formal review session
 - write a report of that session
 - conduct a project post-mortem
- As individuals:
 - prepare your design and test-plan for review
 - prepare review comments for a design/plan

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Project #5 – Dates

- Schedules* due midnight Tue 4/24
 - Reviews* last 6PM Fri 5/11
 - Prep pkgs* 72 hours before review
 - Comments* 24 hours before review

 - Final report due midnight Fri 5/11
late days til midnight 5/13
- * These deadlines cannot be extended with late days

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For Next Lecture

- McConnell, section 28.4
 - brief, general thoughts on measurement
- Wikipedia
 - Best Practices Benchmarking
 - Process Improvement
 - Capability Maturity Models
 - Root Cause Analysis
 - Software Metrics
 - Six Sigma
 - ISO9000
- Kaner – Software Engineering Metrics
 - 12pp, good analysis of problems w/software metrics

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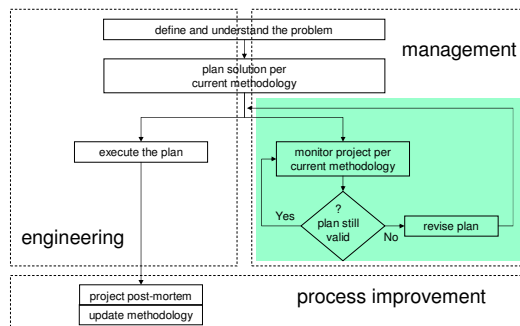
Supplementary Slides

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Task Status

- there are not universal conventions
- these are typical
 - ● GREEN
 - on schedule, no major issues
 - ● YELLOW
 - a major issue has come up, it is being analyzed
 - not on schedule, but we have a get-well plan
 - ● RED
 - in jeopardy, no get-well plan in place

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Productivity Problems

	Willing	Unwilling
Able	no problem	sell them on the value of the job
Unable	help them to acquire the needed skills	replace them

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