



Project Management

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Software Project Management

- defining and managing the tasks and resources required to complete a software project
- distinguishing characteristics:
 - start-date
 - end-date
 - target functionality/features
 - specific (non-repetitive) tasks



Project Management Functions

- Planning - WHAT gets done, WHEN it gets done, HOW it gets done
- Organizing - WHO does it
- Staffing - filling the slots
- Directing - getting people to do it
- Controlling - making sure it gets done as planned

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Planning

- WHAT, WHEN, HOW
- most important part of project management
- process definition and modeling
 - identifies what gets done and when
- provides a framework for predictability and monitoring

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Steps to Planning

- define project objectives
- break down the tasks to be performed
- sequence the tasks (precedence)
- estimate task duration/costs
- reconcile the schedule with time and resource constraints
- document the plan

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Precedence & Critical Path

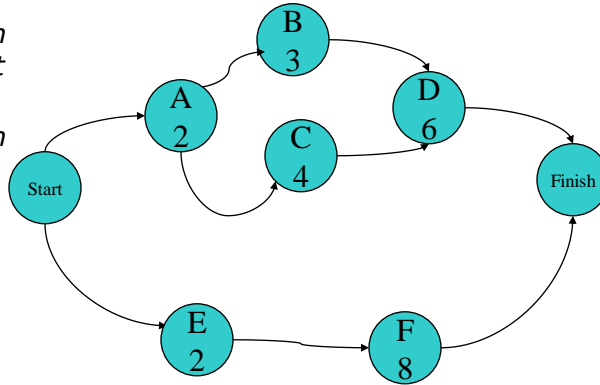
(Program Evaluation and Review Technique)

- task sequencing and time to complete
- earliest start time/earliest finish time
 - earliest time a task can start and finish
- latest start time/latest finish time
 - latest a task can complete w/o delaying the project
- slack - latest finish - earliest finish
- critical path has zero slack time

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Identifying the Critical Path

- Which tasks can slow the project down?
- Which tasks can speed the project up?



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Organizing

- defining "who" does what
- organize to allow people to work together effectively and efficiently
- everyone knows who is to do what and who is responsible for which results
- "span of control"
- limit number of times a fact has to be communicated

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Staffing

- fill organizational positions
- assimilate newly assigned personnel
- educate or train personnel
- evaluate and appraise personnel
- compensate
- terminate assignments
- document staffing decisions

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Directing

- getting things done by subordinates
- communicate goals
- motivate subordinates to achieve your goals
- coordinate activities
- delegate authority/responsibility
- resolve conflicts

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Power

- ability of a person to influence another
 - reward power - ability to reward
 - coercive power - ability to punish
 - expert power - expertise
 - identification power - similarity w/self
 - legitimate power
 - shared values
 - acceptance of a social structure
 - sanction of a legitimizing agent

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Delegation

- giving responsibility for a task to another
- changes role from a performer to a trainer/motivator/evaluator
- manager should devote time to planning, supervising and delegating - **not** doing

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Reasons for *not* Delegating

- lack of confidence in subordinates
- lack of confidence in self
- poor definition of duties
- aversion to risk taking
- inflated self image
- equating action with productivity
- fear of appearing lazy

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Controlling

- ensuring the plan is adhered to
 - plans furnish the standards for the controls
 - controls should be:
 - diagnostic
 - therapeutic
 - accurate
 - timely
 - understandable
 - economical
- without a plan, control is impossible



Controlling

- develop standards of performance
- establish monitoring and reporting systems
- measure results
- initiate corrective actions
- reward and discipline

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Planning

- set objectives or goals
- develop strategies and policies
- determine courses of action
- make decisions
- set procedures and rules
- forecast future situations
- prepare budgets
- document project plans

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Organizing

- identify and group required tasks
- select and establish organizational structures
- create organizational positions
- define responsibilities and authority
- establish position qualifications
- document organizational structure

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Directing

- provide leadership
- supervise personnel
- delegate authority
- motivate personnel
- coordinate activities
- facilitate communications
- resolve conflicts
- document decisions

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