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1.040 Project Management  
Spring 2009

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1.040/1.401  
Project Management  
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Course Introduction Part II

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# Project

## Characteristics

1. Temporary means that any project will have a start dates and an end date (but it has nothing to do with short duration).
2. Projects differ from operations, because operations are continuous and repeating (projects are temporary), and operations deliver the same or almost the same results (project results are in contrast to unique).
3. A temporary piece of work with a finite end date undertaken to create a unique product or service. Projects bring form or function to ideas or need.
4. Planning, execution and controlling of project is the primary field of project management.

# Project Management

- Definitions:

- Project Management: the applications of knowledge, skills, tools and techniques to project activities to meet project requirements.

Source: PMI

- Project Management: the planning, monitoring and control of all aspects of the project. AND the motivation of all those involved in it to achieve the project objectives on time and cost, quality and performance.

Source: PRINCE 2

- Project Management is the complete set of tasks, techniques, tools, applied during Project Execution.

# Notable Projects

1. Manhattan Project: Development of the first nuclear weapon
2. Polaris missile project: an ICBM control system
3. Human Genome Project: To map the human genome
4. Project Apollo: Landing a man on the moon
5. Channel Tunnel Project
6. Central Artery Project

# Enterprise Project Management (EPM)

- Up to nineties focus was on the management of single projects
- Currently the emphasis is on management of multiple projects within an enterprise
- Ability to manage, monitor and assess the status of all projects, through a set of EPM processes, methods and application packages
- Project Management Office (PMO): Increasingly uses Project Management Software (Outsourced, or developed in house) to support EPM.

# Portfolio Project Management (PPM)

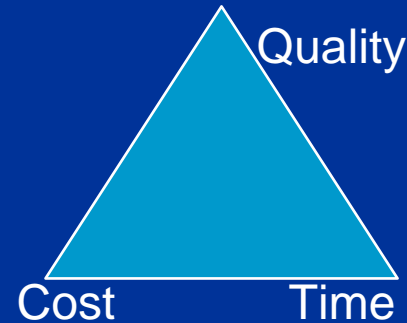
- Tracks the existing set of projects, but it also creates a portfolio of existing and future projects.
  - It manages this portfolio per:
    - Budget size
    - Calendar Year
    - Budget Year
    - Business Line
    - Geographic Distribution
  - It recommends which ones to keep and which ones to discard
  - It is similar to portfolio of stocks or bonds
  - By creating various scenarios it recommends what portfolio is most optimal (for a certain year, business, budget, region, etc.)
  - Software required are rather complex, because they have to take into account “enterprise – wide” network administration, e.g. Microsoft, EPM solution: “cps” and “iPlan”

# Project Management Software

## ■ Primarily in control of

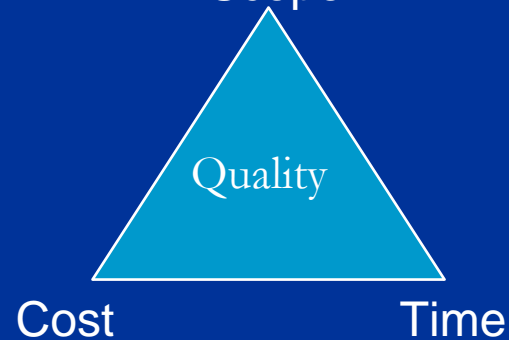
1. Time
2. Cost
3. Quality

### Project Management

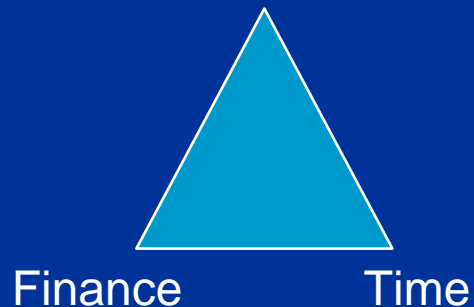


or

Scope



### Resource Management Human





# Software

Categories Include:

Scheduling

Cost control & Budget Management

Resource Allocation

Communication

Quality Management

Documentation or Administration Systems

# Scheduling

- Events which depend on one another in different ways or dependencies
- Scheduling people to work on, and resources required by, the various tasks commonly termed resource scheduling
- Dealing with uncertainties in the estimates of the duration of each task
- Arranging tasks to meet various deadlines
- Juggling multiple projects simultaneously to meet a variety of requirements

# Project Management Software

- Desktop
- Web-based
  - Desktop
    - Programs run on a desktop for each user
    - Provides most responsive and graphically intense style of interface
    - Data are stored: either in a file (with ability to collaborate with others), or
    - Stored in central database
  - Web-based
    - Can be accessed from any type of computer without installing software
    - Ease of access-control
    - Naturally multi-user
    - Only one software version and installation to maintain
    - Typically slower to respond than desktop applications
    - More limited graphical capability than desktop applications
    - Project information not available when the user (or server) is offline
    - Some packages do allow the user to go “offline”

# Providing Information

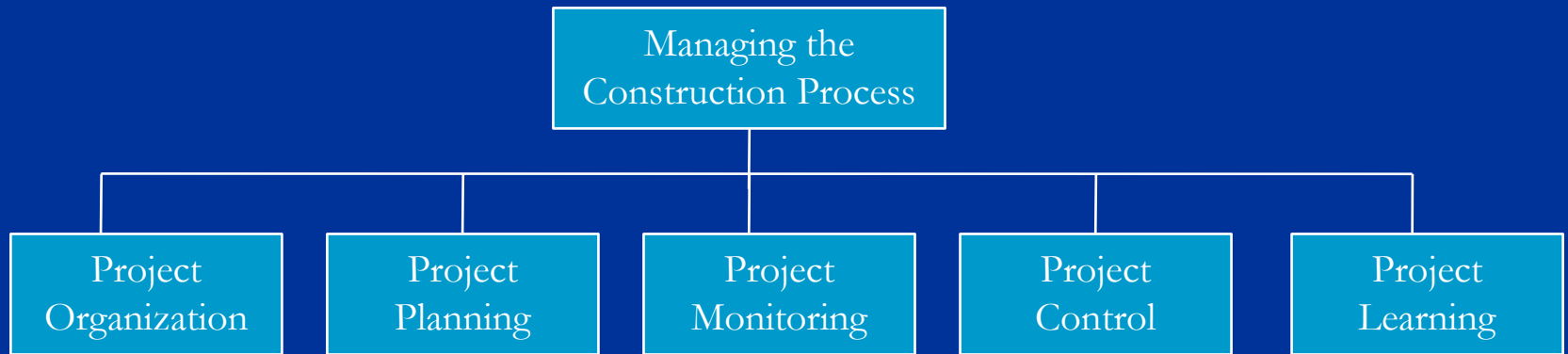
- Project planning software needs to provide a lot of information to various people, to justify the time spent using it. Typical requirements might include:
  - Task lists for people, and allocation schedules for resources
  - Overview information on how long tasks will take to complete
  - Early warning of any risks to the project
  - Information on workload, for planning holidays
  - Evidence
  - Historical information on how projects have progressed, and in particular, how actual and planned performances are related.

# Sequential Process



Organization Framework

# The Organization Framework, Concepts & Tools



<b>Concepts</b>	<ul style="list-style-type: none"> <li>•Project Economics</li> <li>•Delivery Systems</li> <li>•Contractual Organization</li> <li>•Organizational Breakdown Structure</li> <li>•Project Development</li> <li>•Teams</li> </ul>	<ul style="list-style-type: none"> <li>•CPM</li> <li>•PDM</li> <li>•PERT</li> <li>•GERT/Q-GERT</li> <li>•STROBOSCOPE</li> <li>•DPM</li> <li>•Critical Chain</li> <li>•Resource Loading</li> </ul>	<ul style="list-style-type: none"> <li>•Earned Value Analysis</li> <li>•Quality Assurance</li> <li>•Risk Monitoring and Management</li> <li>•Conflict Management</li> </ul>	<ul style="list-style-type: none"> <li>•Earned Value Analysis</li> <li>•Project Crashing</li> <li>•Process Simulation</li> <li>•Systems Simulation</li> </ul>	<ul style="list-style-type: none"> <li>•Project Reviews</li> <li>•Project Audits</li> <li>•Project Closeout</li> <li>•System Dynamics</li> </ul>
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# Unified Process

1. Inception – Identify the initial scope of the project, a potential architecture for the system and obtain initial project funding and stakeholder acceptance.
2. Elaboration – Complete the architecture of the system.
3. Construction - Build a working system which meets the expectation of project stakeholders.
4. Transition – Validate and deploy the system into the production environment.