Dr. Öncü HAZIR

TED UNIVERSITY

Mustafa Hafızoğlu, PMP

SDT Space & Defense Technologies

Project Management Seminars

Objective of the Seminar Program

- To discuss project organizations, their advantages and introduce principles, functions and methods of project management
- **Focus:** Engineering Management Methods & Analytical Approaches

Content

- Introduction to project management: objectives, functions, methods and tools.
- Planning and scheduling: CPM, PERT, resource constrained scheduling models, solution methods.
- Budgeting and project finance management.

Content

- Control methods: Earned Value Analysis. Planning and control relationship.
- Risk analysis and management: Uncertainty and risk concept, simulation and statistical analysis.
- Project management software, decision support systems.

Learning Outcomes

- Explain characteristics of project organizations
- Discuss role of project managers
- Define project life cycle management, processes and methodologies
- Appraise risk management and its importance.
- Compare project management software and decision support tools

Suggested Books

- Shtub, A., Bard, J., & Globerson, S. (2005). Project Management: Processes, Methodologies, and Economics, 2nd ed. New York: Prentice Hall.

- Hazır Ö, Eryılmaz U, Hafızoğlu M. Proje Yönetimi: Analitik Yaklaşımlar. PMI-TR, September, 2014.

www.projeanalitik.com

What Is a Project?

- A project is "a temporary endeavor undertaken to accomplish a unique product or service"
  (PMBOK® Guide of PMI, 2000, p. 4)

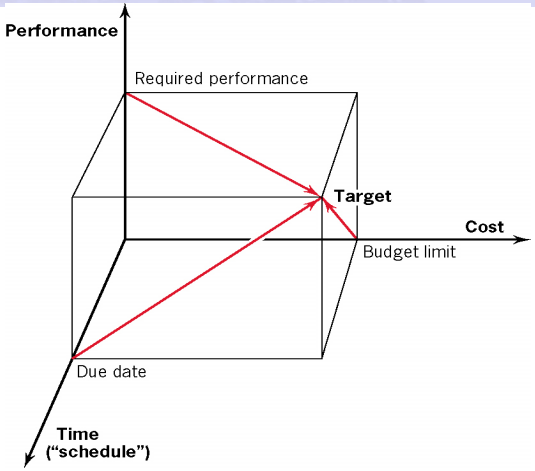
- Attributes of projects
  - unique
  - **temporary**
  - single/multi objectives
  - require resources (renewable, non-renewable)
  - should have a primary organization or customer
  - involve uncertainty

Examples of Projects

- Building construction
- New product introduction
- Concert organization
- Software implementation
- Program development
- Research projects
- Book Writing

PM.wpl

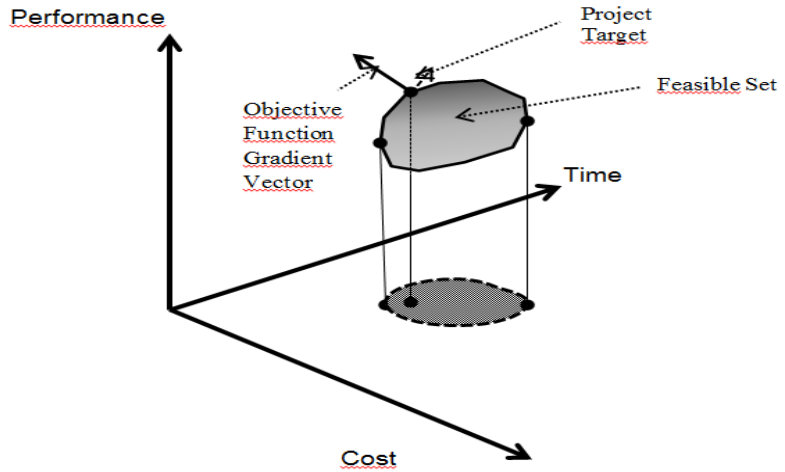
Three Project Objectives



- Performance (conformance to specifications)
- Cost
- Time

Mantel, Meredith, Shafer, and Sutton, *Project Management in Practice* ,John Wiley & Sons,

Three Project Objectives



Why are Projects Important?

1. Shortened product life cycles
2. Narrow product launch windows
3. Increasingly complex and technical products
4. Emergence of global markets
5. Economic period marked by low inflation

What is Project Management (PM)

- Meredith and Mantel (2005):
  - Organizing tasks as projects serve to focus responsibility and authority to achieve the organizational goals.
  - In this way, organizations experience better control, coordination, communication, and customer relations.
- Organizations are becoming more project-driven.
- *PM* is the management discipline that develops and applies various tools and methods to ensure that project objectives are achieved.

Project Oriented Organizations

- What could be the reasons for the rapid growth of project oriented organizations ?
  - Speed and market responsiveness have become absolute requirements for successful competition
  - The development of new products, processes, or services regularly requires input from diverse areas of specialized knowledge

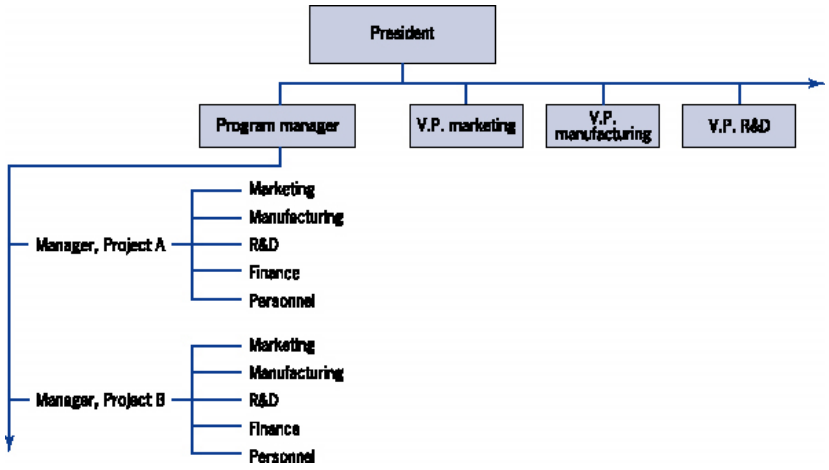
Project Oriented Organizations

- Rapid expansion of technological possibilities in almost every area of enterprise tends to destabilize the structure of organizations
- A majority of senior managers rarely feel much confidence in their understanding and control of the activities in their areas

Types of Project Organizations

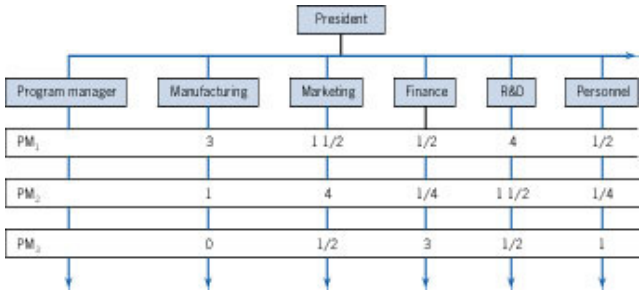
- There are two fundamentally different ways of organizing projects within the parent organization
  - The project as part of the Functional Organization
  - The project as a free-standing part of the parent organization
- A third type, called a Matrix Organization is a hybrid of the two main types
- Each has advantages and disadvantages

Pure Project Organization



The Matrix Organization

- Rather than being a stand alone organization, like the pure project, the matrix project is not separated from the parent organization:



The Matrix Organization

- Advantages of a Matrix (cont.)
  - Response to client's needs is as rapid as in the pure project organization
  - Matrix management gives the project access to representatives from the administrative units of the parent firm
  - The matrix organization allows a better company-wide balance of resources to achieve goals
  - There is a great deal of flexibility in precisely how the project is organized within the matrix

The Matrix Organization

- Disadvantages to using the matrix organization; most involve conflict between the functional and project managers:
  - The balance of power between the project and functional areas is very delicate
  - The movement of resources from project to project may foster political infighting
  - Problems associated with shutting down projects can be as severe as in a pure project organization

Project Success Rates

- Software & hardware projects ***fail at a 65%*** rate,
- ***Over half*** of all IT projects become ***runaways,***
- ***Only 30%*** of technology-based projects and programs are a success.
- Only ***2.5%*** of global businesses achieve 100% ***project success*** and over ***50%*** of global business ***projects fail***,

Project Success Rates

- *Average success* of business-critical application development projects is *32%*, and
- Approximately *42%* of the 1,200 Iraq reconstruction projects were *eventually terminated* due to mismanagement or shoddy construction

Project Failures

«Greece built or upgraded 36 venues at an estimated cost of more than 12 billion euros ($14.8 billion) when it hosted the Athens Olympics in 2004. Almost all are now graffiti-covered after repeated failures to lease them out. The country was left with expensive maintenance tabs – cost were reportedly $124 million in 2005.»

http://www.canada.com/olympics/looking-back/some-of-the-biggest-white-elephants-in-the-history-of-the-olympic-games

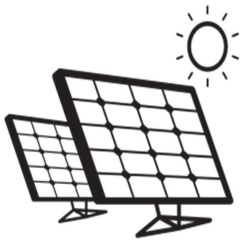
Why Projects Fail?

- Unclear objectives & Fuzzy Scope
- Lack of Planning
- Politics & Naïve promises
- Naïve optimism of youth
- Startup mentality of entrepreneurial companies
- Intensive competition
  - caused by globalization
  - caused by appearance of new technologies
- Pressure caused by government regulations
- Unexpected and/or unplanned crises

Project Scope

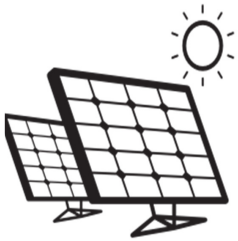
- Identification of project objectives, target values expressed in concrete terms is important.
- In addition the scope should be defined. The boundaries, what is left outside the scope of should be expressed.
- Example Project: Investment Project to Produce Electricity in the University Campus using Renewable Energy Resources.

Example Project & Objectives



- To minimize energy costs;
- To assume a leading role in sustainability / environmental awareness among education organizations;
- To raise awareness of students and faculty members in these issues
- Multiple-objectives/criteria

Example Project & Scope



- Which renewable energy sources will benefit from (solar, wind …)
- Will the output be restricted to the production of electricity, or other outputs (hot water for heating , etc..) and the quantities,
- What proportion of energy requirements can be met? To which campus units could it serve?

Example Project & Scope

- How much energy could be produced in which periods?
- How does the variability in energy production due to seasonality can be compensated?
- Could hybrid (with the use of multiple sources) production systems be designed.

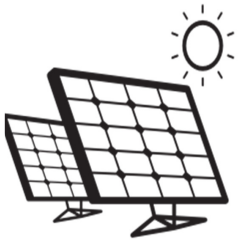
Project Strategies

- A general road plan and detailed plans are prepared in accordance with project strategies.
- Strategies define the direction of the projects and determine the tactics to be followed to achieve the goals.
- Strategic project management includes the steps taken & decision making processes to ensure a competitive advantage to the contractors.

Example Project & Strategy

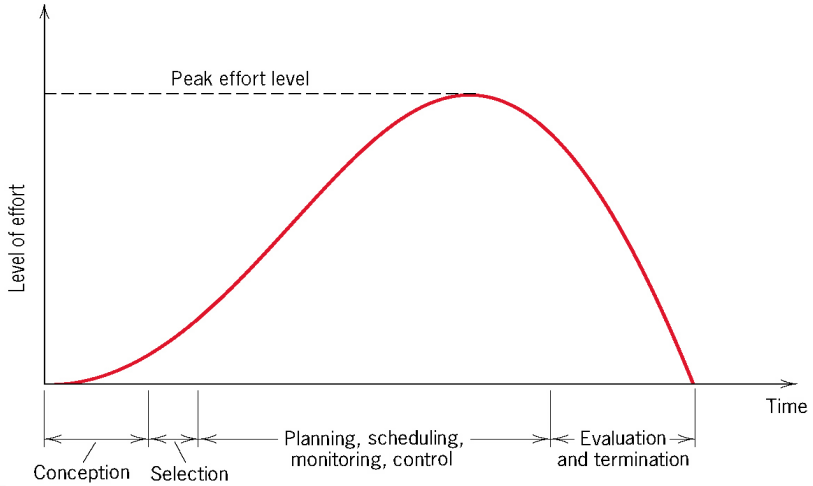
- If objective is to create awareness of sustainability, system should be designed emphasizing these criteria:
  - Training programs, integration with the curriculum. Promotion and advertisement facilities should be given importance.

Example Project & Strategy



- If objective is to minimize energy costs, system should be designed emphasizing these criteria:
  - Technical characteristics of alternative energy systems, capacity and installation costs, investment financing, energy efficiency, maintenance requirements and costs.

Project Life Cycle



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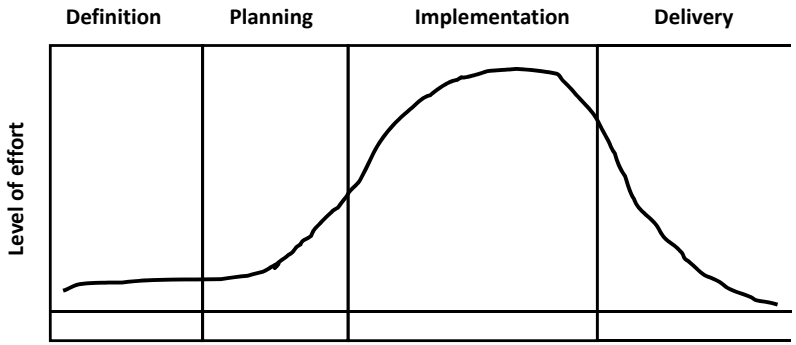
Project Life Cycle



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Life Cycle Phases

- *Conceptual design* identifies the needs for the projects and sets the basic principles that will serve as a reference in the definition phase. In this phase, the problem definition is fuzzy.
- However, feasibility and risk analysis are performed to decide on whether to start the project or not.
- Once a project is conceptually designed, objectives, scope and strategy of a project should be clearly defined. A *budget*, a financial plan of the project, is allocated to the project at this stage.

Planning

- *Planning* function creates a concrete plan to reach the predefined project objectives.
- Work content is divided into work packages that comprise activities. For each activity time, resource and cost requirements are estimated.
- Project scheduling produces time plans, schedules. Project schedules define activity start and finish times, and also allocate resources to the activities.
- Financial Planning & Budgeting

Monitoring & Control

- *Monitoring* function collects and prepares information that is required to evaluate project performance.
- *Controlling* function verifies that actual performance matches the planned performance and corrective actions are taken if needed.
- Accomplishment of the project goals is evaluated and a final report is prepared in the *termination* phase.
- Project organization is dissolved.

Project Manager Responsibilities

1. Selecting a team
2. Developing project objectives and a plan for execution
3. Performing risk management activities
4. Cost estimating and budgeting
5. Scheduling
6. Managing resources

Roles and Responsibilities

- Project managers perform both process and people functions. Both types of functions are necessary for effective project management.
- Process functions fall into the following groups: planning, scheduling, estimating cost and duration, procuring, tracking progress, reporting, and risk.

Roles and Responsibilities

- People functions include leadership, teambuilding, motivation, communication, time management, change management, diversity management, and adversity management.

Project Managers & Organizations

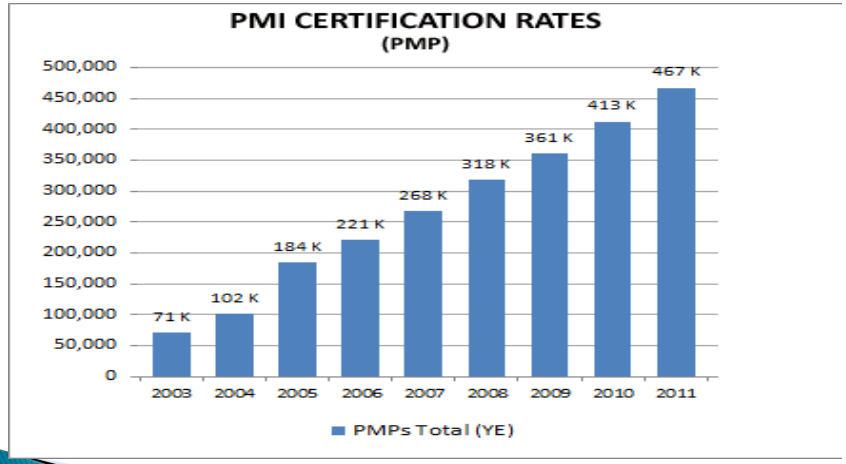
http://hbr.org/video/2371653503001/six-skills-middle-managers-need

http://www.pmi.org/Professional-Development/Career-Central/How-to-Break-into-Project-Management.aspx

Project Management Institute (PMI)

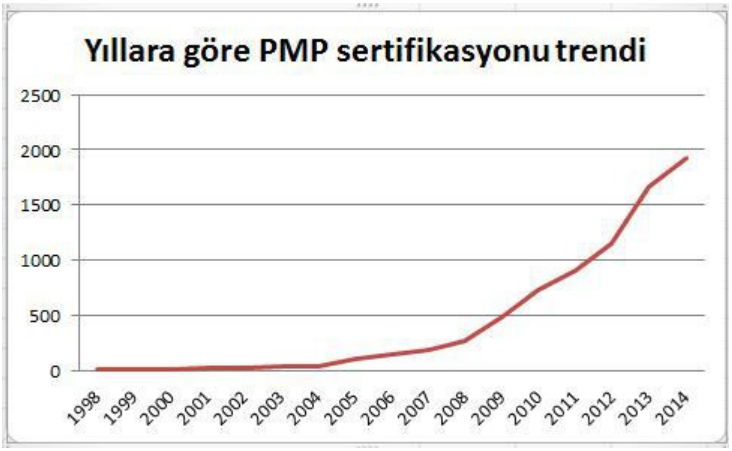
- Various project management certifications are available from PMI.www.pmi.org
  - Certified Associate in Project Management (CAPM)®
  - Project Management Professional (PMP)®
  - Program Management Professional (PgMP)®
  - Portfolio Management Professional (PfMP)®
  - PMI Agile Certified Practitioner (PMI-ACP)®
  - PMI Professional in Business Analysis (PMI-PBA)SM
  - PMI Risk Management Professional (PMI-RMP)®
  - PMI Scheduling Professional (PMI-SP)®
- PMI-TR: http://www.pmi.org.tr/c7/tr/

PMI Certification



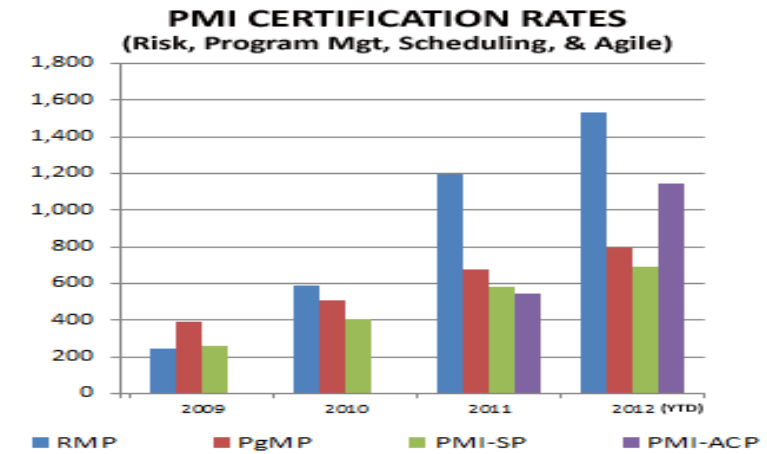
http://www.agilepgm.com

PMI-TR Certification



http://birprofesyonelinevrimi.net/

PMI Certification



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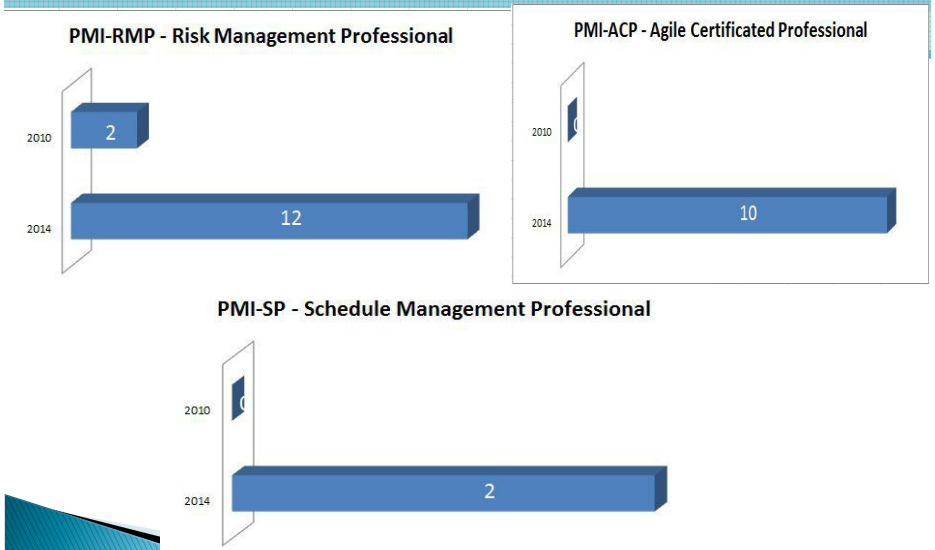

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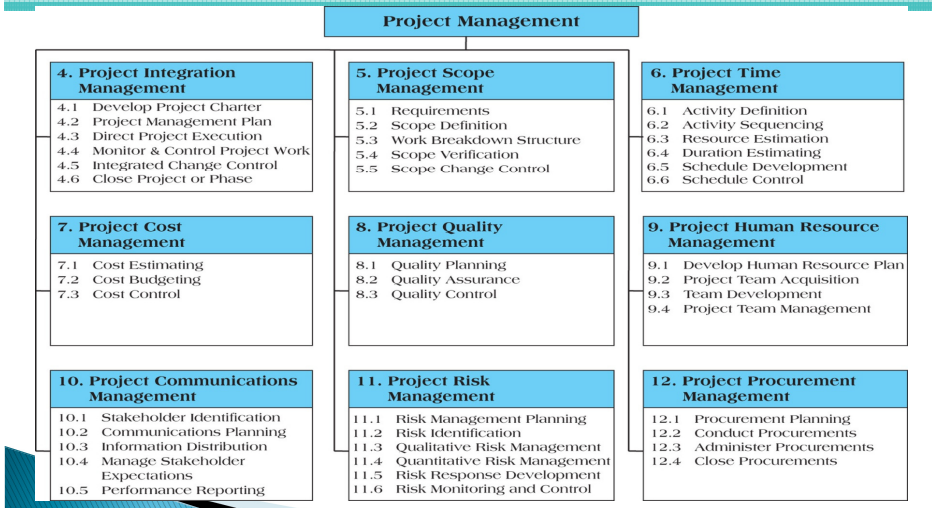
Overview of the Project Management Institute's PMBoK Knowledge Areas



Project Managers & Organizations

http://ipma.ch/

http://www.journals.elsevier.com/international-journal-of-project-management/

http://www.pmi.org/Knowledge-Center/Publications-Project-Management-Journal.aspx

http://www.pmi.org/Professional-Development/Career-Central/How-to-Break-into-Project-Management.aspx