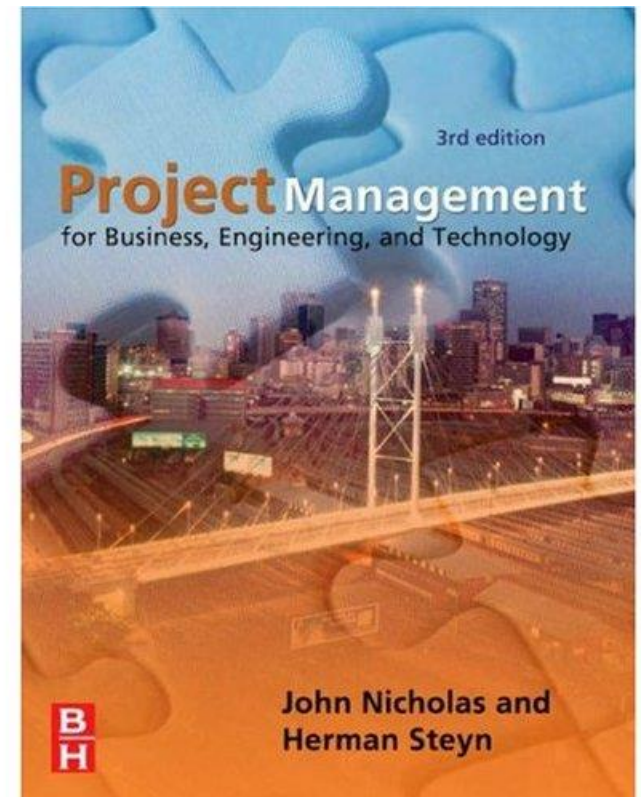# Chapter 1
What is Project Management?

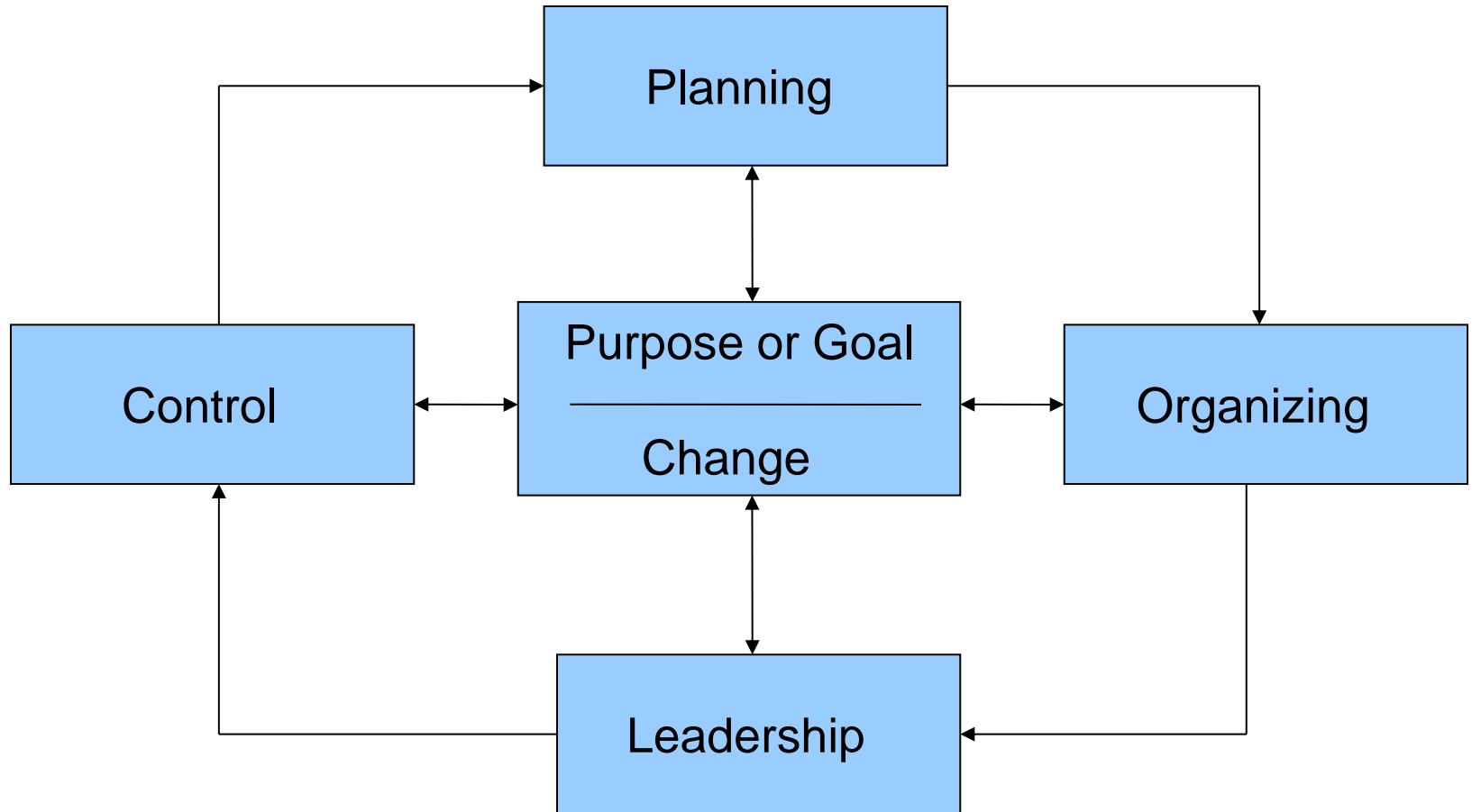Project Management for Business, Engineering, and Technology

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Management Functions

Characteristics of Projects

- Goal-oriented
  - Aims at a specific end result or deliverables
- Somewhat unique
  - Non-routine
- Time- and resource-constrained
  - Temporary; has target completion date and target cost
- Cross-functional
  - Cross-disciplinary
  - Cross-organizational
- Somewhat unfamiliar and risky
  - Involves something new or different
- Something is at *stake*
- Follows logical sequence or progression of phases or stages

What is "Project Management?" Simple Definition

- Management to accomplish project goals.

What is "Project Management?" Longer Definition

Management to

- Define and execute everything necessary to complete a **complex system** of tasks
- Achieve project end results that might be **unique and unfamiliar**
- And do it
    - by target **completion date**
    - with **constrained resources**
    - with an organization that is **cross-functional** and **newly**-**formed**

Characteristics of Projects

1. A single person, the project manager, heads the project organization. The project organization reflects the cross-functional, goal-oriented, temporary nature of the project.

2. The project manager is *the* person who brings together all efforts to meet project objectives.

3. Project requires a variety of skills and resources, and is performed by people from different functional areas or by outside contractors.

4. The project manager integrates people from different areas and disciplines in the project.

Characteristics of Projects

5. Project manager negotiates with functional managers for personnel. Functional managers responsible for work tasks and personnel in the project; project manager responsible for integrating tasks.

6. Project manager focuses on delivering product or service according to time, cost, and technical requirements. Functional managers maintain pool of resources to support organizational goals; sometimes conflicts arise over allocation of resources to projects.

7. A project might have two chains-of-command, one functional and one project; workers might report to both a project manager and a functional manager.

Characteristics of Projects (cont'd)

8. Decision making, accountability, outcomes, and rewards are shared among members of the project team and supporting functional units.

9. Each project organization is temporary. When project ends, the project organization disbands and people return to their functional or subcontracting units, or are reassigned to new projects.

10. Project management sets into motion work in numerous support functions such as HR, accounting, procurement, and IT.
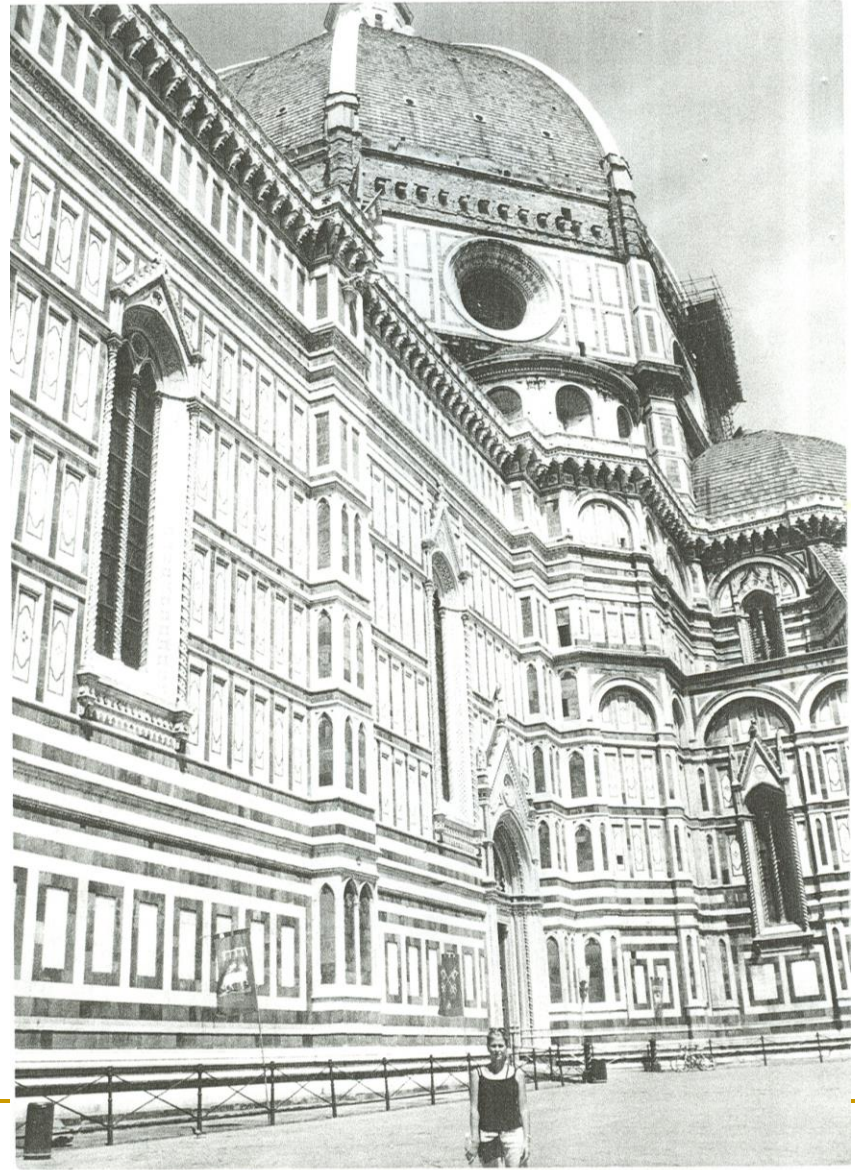
Project Management in History

The *role**of the project manager has existed for a long time. Two examples:

•The *title* of project manager is recent and became common starting in the 1950's.

1413 Santa Maria del Fore, Florence
Filippo Brunelleschi

Santa Maria del Fore
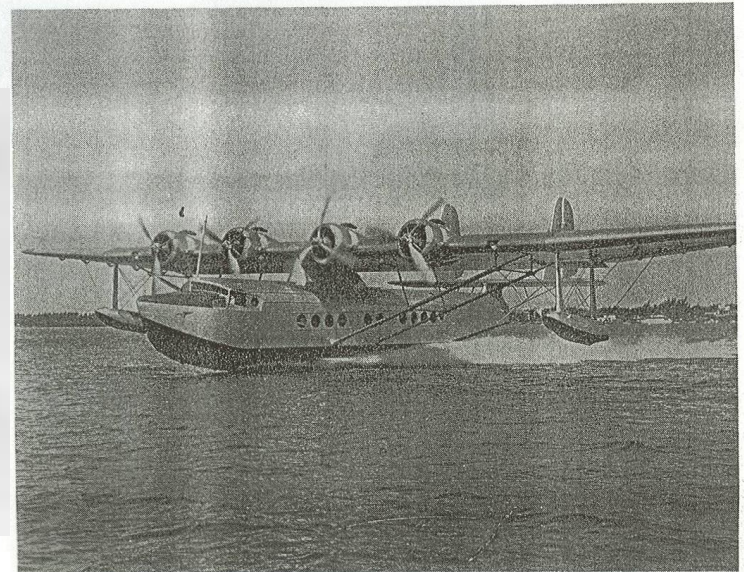
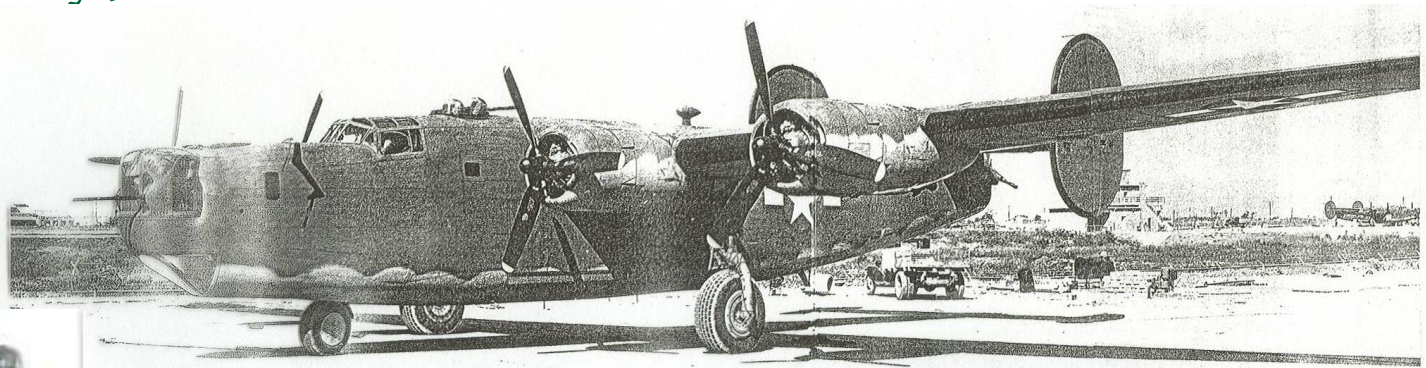# Santa Maria del Fore
Brunelleschi's mandate

To "provide, arrange, compose or cause to have arranged and composed, all and everything necessary and desirable for the building, continuing, and completing the dome."
Circa 1413

Advanced engine development at Pratt & Whitney, 1939

1939 internal memo to establish new role, the "project engineer"

Project Engineers should in effect be Chief Engineers for their particular project

…they should then have at all times **a general knowledge of the entire company situation concerning their project** and…their thinking will be guided by this picture…

[They] should **appreciate the functioning of each of the subdivision [of the project**, including]

1. Product (engineering)
2. Sales
3. Manufacturing
4. Quality
5. Service

Recent History of Project Management

- 1958 Publication of many articles on project management

- 1961 Systems Managers at IBM

- 1969 PMI founded by 5 volunteers

- 1992 5000 members

- 2004 142,000 members

- 2005 over 170,000 members worldwide in 120 countries

Where Do You *Need* Project Management?
Answer: Situations where the work …

- **Is Unfamiliar**
  The job is different from the ordinary and routine. Requires that different things be done, the same things be done differently, or both.

- **Requires Greater Effort**
  The job requires more resources (people, capital, equipment, etc.) than are normally employed by the department or organization.

- **Is in a Changing Environment**
  The industry or environment involves high innovation, high competition, rapid product change, shifting markets.

- Continued…

Where Do You *Need* Project Management? Answer: Situations where the work …

- **Requires a Multifunctional Effort**

  The job requires lateral relationships between the areas to coordinate and expedite work and reconcile conflicts.

- **Could Impact the Reputation of the Organization or Other Stakeholders**

  Failure to satisfactorily complete the work could result in financial ruin, loss of market share, damaged reputation, loss of future contracts, or other problems for the stakeholders or larger environment.

Different Forms of Project Management

Basic Project Management

- Most common project approach
- Project manager has authority to plan, direct, organize, and control the project from start to finish.
- PM and functional managers are on the same organizational   level.
- Implemented in two widely used forms—pure project and matrix.
  - In pure project, the project is a complete, self-contained organization
  - In matrix, the project is created from resources borrowed from the
    functional units.

Different Forms of Project Management

Program Management

- Similarity between programs and projects
    - both defined in terms of goals or objectives about what must be accomplished
    - both emphasize time period over which goals or objectives are to be pursued
    - both require plans, budgets, and schedules for accomplishing specific goals.
- Differences between programs and projects
    - Program extends over a longer time horizon
    - It consists of several parallel or sequential work efforts or projects coordinated to meet a program goal.
    - Projects within a program share a common goal and resources, and often are interdependent.

New Venture Management

- Used for generating new products or markets.
- Team is specially created to find products/markets that fit the organization's specialized skills, capabilities, and resources.
- After defining a product, the team may go on to design and develop it, then determine means for producing, marketing, and distributing it.
- Similarities between project groups and venture groups
  - Focus on a single unifying goal.
  - Multidisciplinary, with experts and managers from various functional areas
  - Action-oriented and dedicated to change.
  - Temporary.

Product Management

- A single person has authority to oversee all aspects of a product's production scheduling, inventory, distribution, and sales

- Like the project manager, the product manager communicates directly with all levels and functions within and outside the organization

- The product manager coordinates functional units so that the total effort is directed at the accomplishment of product goals.

Ad Hoc Committees and Task Forces

- For some projects of short or medium duration, a temporary team is assembled with a project leader.
- The team is an ad hoc committee called a *task force* or *interdepartmental committee*.
- The leader and members are selected by (and the leader reports directly to) the person responsible for the project—a functional manager, vice president, or CEO.
- The leader expedites and coordinates efforts and may have authority to direct project tasks to certain individuals or units, or to contract work out.