

PROJECT MANAGEMENT IOM455
SESSION 7
FEBRUARY 03, 2010

Mantel

OUTLINE

- Questions?
- Major projects in the news?
- Take roll
- Organizational Structures
- Planning

Project 2007
back of book

CB instructions
inside front cover

Project by ^{Step} 2007

CD - Files

- pdf book
not copyable

Outline

- **The place of a project in an organization**
 - **In a functional area**
 - **Matrix organization**
 - **Pure Project Organization**
- **The organization of a project team**
 - **Members**
 - **Human factors**

The project as part of the functional organization

Project management office

What is a functional organization? – Some typical examples

- Research
- Engineering
 - Design *med*
 - Test *elect*
- Manufacturing
 - Quality
 - Operations
- Information Systems
- Marketing
- Sales
- Finance
 - Accounting
 - Facilities
- Human Resources

Information Systems

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The project as part of the functional organization (continued)

- Any project is housed in one of the functional areas:

Advantages	Disadvantages
Flexible use of staff	Client is not the focus of activities
Experts used on many projects	Oriented towards activities particular to it
Specialist share experiences	PM is not fully responsible for all tasks
Technological continuity	Tendency for slow response to the client
Normal path of advancement for specialists	Tendency to suboptimize the project
	Motivation – project is not in the mainstream

Pure Project Organization

- The project is separated from the rest of the organization:
- On an equal footing with functional areas, or in a program office
- Has its own functional areas

Advantages	Disadvantages
PM has full authority, unity of command	Considerable duplication of effort
Dedicated work force	Stockpiling of equipment and expertise
Shorter lines of communication, swift decisions	Lack of technical colleagues
Strong team identity	Inconsistent policies and procedures
Organizational structure supports holistic approach	Potentially distorted relationship with parent organization
	Uncertainty at termination

Matrix Organization

- **Developed to obtain synergy from the advantages of functional and pure project organizations**
- **Takes on a wide variety of forms**
 - **Strong matrix is similar to a pure project form**
 - **PM report to program manager, other individuals assigned to the project are in their functional areas**
 - **Weak matrix is similar to a functional form**
 - **PM may be the only full time person, functional areas assign capacity, not individuals**
 - **“Balanced” Matrix – many forms – time share expertise among projects**

Matrix Organization (continued)

Strong points of the Matrix form:

- 1. The project is central**
- 2. Reasonable access to technology in all functional areas**
- 3. Reduced anxiety at termination – everyone (except the PM) has a home**
- 4. Responsive to clients and the parent organization**
- 5. Access to administrative procedures**
- 6. Good balancing of resources among projects**

Matrix Organization (continued)

everybody has two bosses

Drawbacks:

1. **Uncertainty where the power lies**
2. **Infighting among PMs for resources in a functional area**
3. **Projects are difficult to shut down in strong matrices**
4. **Division of authority and responsibility is complex**
5. **Matrix management violates the principle of unity of command**

*Proj Mgmt
off*

Input from a working student

- Having worked in a matrix for two employers, I think that more attention needs to be paid to the issue of dual loyalties. In my, albeit limited, experience, it seems that my “functional manager” does not know what I do, let alone if I do it well.
- My loyalty is to my “project manager” from whom I receive direct feedback. Am I failing to be a good employee by not seeking out my functional manager more often?
- Or does the burden lie with the functional manager to engage the employee?
- I don't feel like I have much of a career path in a matrix since the person who should be mentoring me knows so little about what I can bring to the team.

Project manager needs to act as a mentor

How do you chose an organizational form?

- **Consider:**
 - The nature of the project**
 - The characteristics of the various functional units**
 - The cultural preferences of the parent organization**
 - The prevailing winds**
- **Functional forms are favored for serious applications of technology**
- **Pure project form is preferred when there are many similar projects**
- **When integration of several functional areas is important, the matrix works best**

Risk Management - Organization

- Uncertainty is a way of life
- Dealing with it has come to be known as Risk Management
- One mechanism for managing it is the Program Office
- Steps:

1. Decide on an approach
2. Identify most important ones
3. Qualitative analysis of potential impact
4. Estimate probabilities
5. Develop procedures to reduce threats and enhance opportunities
6. Monitor, Control and assess new risks
7. Create a Database for risk management

Expertise in
running projects

Procedures
PDP product develop
process

Risk Management – Failure Mode and effect analysis

- Failure Mode and Effect Analysis (FMEA) (Quoted from Meredith)
- FMEA is the application of a scoring model such as those used for project selection. It is easily applied to risk by using six steps.
- 1. List possible ways a project might fail.
- 2. Evaluate the severity (S) of the consequences of each type of failure on a 10-point scale where "1" is "no effect" and "10" is "very severe."
- 3. For each cause of failure, estimate the likelihood (L) of its occurrence on a 10-point scale where "1" is "remote" and 10 is "almost certain."
- 4. Estimate the ability to detect (D) a failure associated with each cause. Using a 10 point scale, "1" means detectability is almost certain using normal monitoring/control systems and "10" means it is practically certain that failure will not be detected in time to avoid or mitigate it.
- 5. Find the Risk Priority Number (RPN) where $RPN = S \times L \times D$.
- 6. Consider ways to reduce the S, L, and D for each cause of failure with a significantly high RPN.

Risk Management – Project management office

- **Why have a project management office? (Meredith)**
- **To establish and promulgate good project management processes throughout the organization and be a repository of good project management practice**
- **To transfer project management lessons learned to the rest of the organization**
- **To improve the success rate of projects**
- **To reduce development project lead times and get products/services to market sooner.**
- **To consolidate and simplify project data and provide consistent information on project progress**

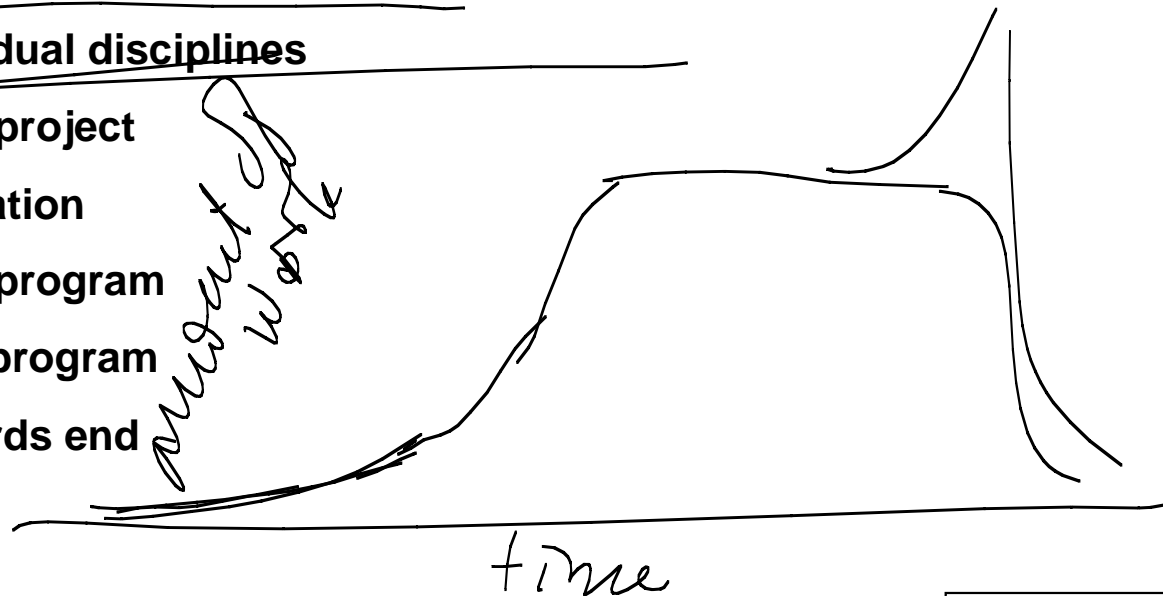
Risk Management – Project management office

- **One example is what we called PDP – the Product Development Process. It was developed during the late 80's and as far as I know is still practiced.**
- **It was a depository of methods and procedures chief engineers (that is, project managers) were expected to follow and were held responsible for.**
- **All senior engineering managers (generally vice presidents or a level below) received extensive and periodic training ranging from 2 days to a full week.**
- **Note that this is consistent with the book's comment about needing consistent standards**

Conflict

- Sources
 - Priorities
 - Schedules → quality - budget
 - Procedures
 - Personalities and behaviors
 - Individual disciplines

- Phases of a project
 - Formation
 - Early program
 - Main program
 - Towards end



Chapter 3 Outline

- **Project Planning**

Process

Launch

Sorting out

Action Plan *WBS*

- **The work breakdown structure and linear responsibility charts**
- **Multidisciplinary teams - Interface coordination through integration management**

Multiple inputs

- **The next slides are taken from Professor Erich Kreidler's lectures from an earlier semester, with his permission and with my format applied and some minor adjustments)**
- **It usually is quite helpful to get multiple points of view and this session provides many – the text's, mine, Professor Kreidler's and many inputs from previous students**
- **I believe that this wide ranging mixture of ideas should help all of us become better planners**

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“Plans are unimportant.
Planning is essential.”

Dwight D. Eisenhower, US President & D-Day Leader

Sun Tzu, *The Art of War*

If your strategy is deep and far reaching you will gain a lot by your calculations, so you can win before you even fight. If your strategic thinking is shallow and near-sighted you will gain little by your calculations, so you lose before you do battle. Therefore, it is said that victorious warriors win first and then go to war while defeated warriors go to war first and then seek to win..

PROJECT PLANNING

- Project planning is key to effective Project Management (PM)
 - Detailed and accurate planning produces
 - Management information on basis of project justification (costs, benefits, strategic impact)
 - Definition of business drivers (scope, objectives) that form context
 - Project schedules and resource allocations
 - Addresses potential issues and risks
 - Sets stakeholders expectations
- ◆ Planning is work, working isn't planning ◆
- ◆ I have added a quote from a Xerox executive – “Plan your work, work your plan”

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WHAT IS A PLAN?
Webster's new Collegiate Dictionary

- **A detailed formulation of a program of action**

Efficient distribution of work

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How much will it cost
WHY DO YOU NEED A PLAN?

make sure everything gets done

Define scope → scope creep

every one on same track ^{resistance}

how you are going to do ^{specific response}

Definite time table

what resources you'll need
allocate

SMOP

WHY DO YOU NEED A PLAN?

- **To define how the goals will be achieved**
- **To coordinate and communicate**
- **To form a basis for monitoring**
- **To satisfy a requirement**
- **To avoid problems**

C. T.

- **Despite all the research done on the benefits of project planning, it seems that the underlying tendency to plan for projects may stem from personal characteristics of certain people. Some people like to think things through and need to have detailed plans before implementing. Others prefer to jump into a task and tackle the problems as they arise. Therefore, the decision to plan, and how well projects are planned, seem to depend largely on the personal characteristics of the individual(s) in charge of the project (most likely the project manager).**
- **How much time and money are typically spent in the planning phase of a project? Who makes the plan for how much time is spent on planning?**

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M. W.

- **All of the Systems projects that I have worked on have had a document called the “Statement of Objectives” or SOO. The SOO identifies the broad, basic, top-level objectives of the project and is used as a focusing tool.**
- **A SOO supplements a requirements document (Operational Requirements Document (ORD), Technical Requirements Document (TRD), Systems Requirement Document (SRD), and performance based Government requirements document) and is developed after performing a risk assessment. This seems to be similar to the “Objectives” element of the Project Plan.**

THE PLANNING PROCESS

- **Planning is about refining your objectives, identifying and analyzing potential project /product approaches (within given constraints) and selecting the alternative that best satisfies the objectives.**
- **Planning is about understanding and communicating the details of the project. More importantly, through planning commitment is finalized with all stakeholders.**
- **While it is easy to conceptualize planning as happening only once and very early in the project life cycle, in reality, planning is an on-going effort.**