

**PROJECT MANAGEMENT IOM455  
SESSION 2  
INTRODUCTION, JANUARY 13, 2010**

**OUTLINE**

- **Questions?**
- **Take roll**
- **Homework – using the assignment manager**
- **Course outline**
- **Projects**

**PROJECT MANAGEMENT IOM455  
SESSION 2  
INTRODUCTION, JANUARY 13, 2010**

**Course Outline**

- **Introduction**
- **Project Manager**
- **Organizations**
- **Planning**
- **Budgeting**
- **Scheduling**
- **Resources**
- **Control and Audit**
- **Termination**

**PROJECT MANAGEMENT IOM455  
SESSION 2  
INTRODUCTION, JANUARY 13, 2010**

**What is a project?**

- **A temporary endeavor undertaken to create a unique product or service (Project Management Institute)**
- **Attributes:**
  - **Temporary**
  - **Unique**
  - **Done progressively in coordinated steps**
  - **Controlled resources**
  - **Specific Purpose**
  - **Subject to external forces**
- **Examples:**
  - **Develop the Atom Bomb**
  - **Land a man on the moon**
  - **Reduce the cost a printed circuit board**
  - **Install a new garage door in your home**
  - **Destroy German dams in WWII**
  - **Landscape our Sherman Oaks Home**
  - **Plan your wedding**

## Examples of external forces

- **Societal forces**
- **Political forces**
- **Economic forces**
- **Goals of the organization**
- **Personal goals**
- **Contractor's goals**
- **Client's goals**

## **Examples of Roles and Experiences**

- **Working Engineer, Sole contributor – Casting Process for disk read/write head (One year)**
- **Working Engineer, Large development team – Electrical connector for the First transistorized mainframe computer at Burroughs (now Unisys) (2 years)**
- **Working Engineer, 4 person team - connection scheme for a thin film memory (One year)**
- **Working Engineer, main contributor, small team within a large team – cooling system for a mainframe computer (also dissertation) (3 years)**
- **Project manager, small team – Electronic Backpanel for a telephone system (14 weeks)**
- **Unit manager, across departments – MRP software installation (3 months)**

**PROJECT MANAGEMENT IOM455  
SESSION 2  
INTRODUCTION, JANUARY 13, 2010**

**Examples of Roles and Experiences (continued)**

- **Working Engineer, sole contributor – writing software for digital plotter (One year)**
- **Researcher, small team – develop new method of making copies (3 years)**
- **Project manager, small team – basic research – electron attachment to dielectrics (3 years)**
- **Project manager, matrix team – acquire new technology (Surface mounted devices) (3 years)**
- **Project manager, sole contributor – consolidation of machine shops in four factories (6 months)**
- **Consultant and developer – MRP system for small company (2 years)**

## What is Project Management?

- “..the application of knowledge, skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project.” (PMBOK Guide)

## Constraints

- **Three simultaneous constraints that tend to work against each other:**
  - **Budget**
  - **Specification**
  - **Schedule**

## **Phases, or life cycle, of a project**

- **The phases of a project overlap in time**
  - **Concept**
  - **Planning**
  - **Execution**
  - **Control**
  - **Termination**

## **Which projects get done?**

- **Very necessary ones**
  - **San Francisco Bay Bridge after the earthquake (1989)**
  - **Broken water line to a home (2 years and 30 years ago)**
- **Survivors of filtering processes**
  - **High rate of return**
  - **High powered supporter (the consolidation of machine shops)**
  - **Well suited to other goals**
- **Ones that satisfy a need**
  - **Market demand**
  - **Customer's request**
  - **Technological advance**
  - **Legal requirement**
  - **Social need**

**PROJECT MANAGEMENT IOM455  
SESSION 2  
INTRODUCTION, JANUARY 13, 2010**

**Structure of the course**

- **Follows the life cycle of a project**
- **More or less follows the structure of the text**
- **Covers tools and methods as they are required**
- **This course, as all others, has all the earmarks of a project:**
  - **A beginning and an end (01/11/10 – 05/07/10)**
  - **Objectives**
    - » **To learn specific things**
    - » **To earn credits for a class**
    - » **To fulfill a contractual obligation (teach the class)**
  - **Budget (time of students, instructor)**
  - **Unique (to this set of instructor, students, semester)**

## Strategic Management and Selection

- **Project Selection Models**
  - **Non-numerical**
  - **Numerical**
    - **Payback Period**
    - **Average rate of return**
    - **Discounted cash flow**
    - **Weighted Scoring models**
- **Risk Analysis and simulation**
- **Definitions dealing with attributes of data**
- **Project portfolio Process**

## Non-numeric models

- **Sacred Cow** – pushed by powerful person
- **Operating necessity** – not selecting it will make it impossible to operate
- **Competitive necessity** – won't be able to compete without it
- **Product line extension** – increases market share
- **Comparative Benefit** – match to goals and budget

## Numeric Models

- **Payback period (Years) – Total Cost/Net annual cash inflow**
- **Average Rate of return – Average annual profit/Total Cost**
- **Discounted Cash flow (Net Present Value NPV) – Sum of yearly cash flows, adjusted for time with a discount rate less the initial investment**
- **Internal Rate of Return (IRR) – Discount rate that equates the present value of cash inflows and outflows**
- **Recommendation – NPV!**

## Risk Analysis and Simulation

- Assume probability distributions for key parameters
- Construct a model for NPV using these parameters
- Select specific values for each parameter from its distribution
- Calculate NPV
- Repeat many times
- Examine probability distribution of NPV
- Assess probability of success
- **The only way to fly!! (You probably don't know this, but it was Western Airlines' slogan)**

## Definitions

- **Objective measurement – taken by reference to an external standard**
- **Subjective measurement – taken by reference to an internal standard**
- **Quantitative measurements – may be added or subtracted**
- **Qualitative measurements – cannot be added or subtracted**
- **Reliable measurement – repetitions do not vary significantly**
- **Unreliable measurements – cannot be repeated consistently**
- **Valid measurement – means what we think it means**
- **Invalid measurement – does not mean what we think it does**

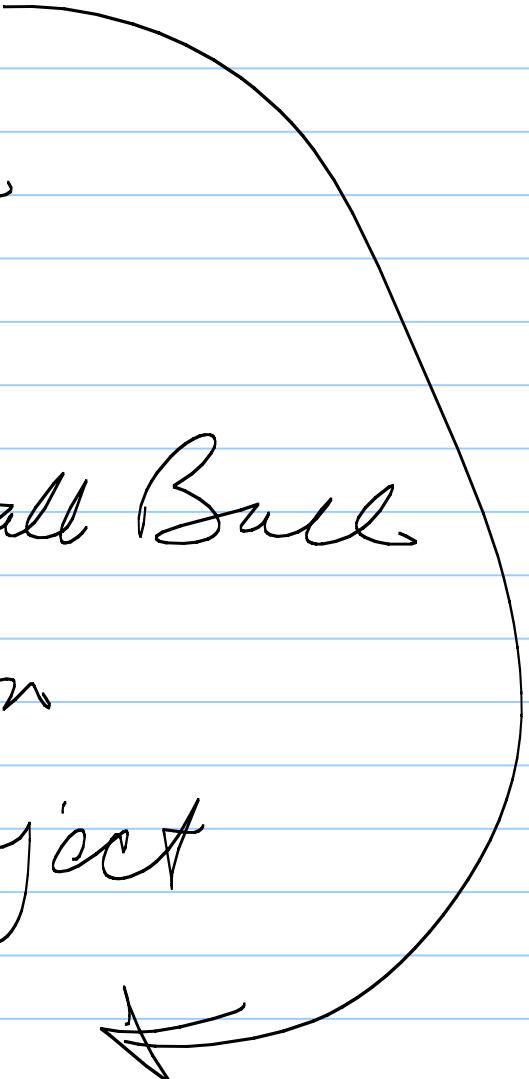
# Team formations

## Teams.

You can start a team  
people on a team can add people  
a person can remove themselves

1/20/10

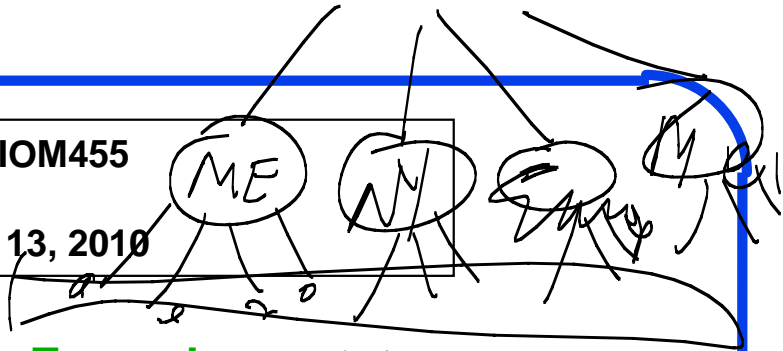
• Roll

- Finish up last week
  - Variability
  - Simulation / Crystal Ball
  - NPV and Simulation
  - Intro to MS Project
- 

Crystal Ball - software  
- simulation

*JSM*

*\$150M*



**Project Proposal Process Example**

*12,000*

- **Corporate Manufacturing Technology Investments**
- **Top down – Corporation specifies total amount**
- **Bottoms up**
  - Individual plants create list of project
  - Groups of plants (divisions) prioritize projects
  - Division representatives prioritize together
- **Top down/Bottom up made consistent (Guess who gets their way most of the time)**

*\$50M*