MBA9009

IT Project Management

- A temporary endeavor undertaken to create a unique product or service
- A unique purpose
- Temporary – has a beginning and an end
- Requires resources – from various areas
- Have a primary customer or sponsor
- Involves uncertainty

- Triple constraint
  - Scope
    - What is the project trying to accomplish
  - Time
    - How long should it take to complete the project
  - Cost
    - What should it cost to complete the project

- Managing the triple constraint – trade offs
  - The role of other elements
  - Quality
  - Satisfaction of the sponsor
  - Customer satisfaction

- What is Project management?
  - The application of knowledge, skills, tools, and techniques to project activities in order to meet project requirements
  - Stakeholders
    - The project sponsor
    - The project manager
    - The project team
    - Support staff
    - The suppliers
    - The opponents
Core knowledge areas

• Project scope management
  - Defining and managing all the work to complete the project successfully

• Project time management
  - Estimating the completion, developing project schedule, ensuring timely completion

• Project cost management
  - Involves preparing and managing the budget for the project

• Project quality management
  - Ensures that the project will satisfy the stated or implied needs for which it was undertaken

Facilitating knowledge areas

• Project human resources management
  - Concerned with making effective use of the people involved with the project

• Project communications management
  - Involves generating, collecting, disseminating, and storing project information

• Project risk management
  - Identifying, analyzing, and responding to risks related to the project

• Project procurement management
  - Acquiring or procuring goods and services for a project from outside the performing organization

History of project management

• 1917 – Henry Gantt – Gantt chart
  - Standard format for displaying project schedule information by listing project activities and their corresponding start and finish dates in a calendar format

• By the 1970s, - software used to manage large projects
  - Very expensive, run on mainframe computers

• Toward the end of 20th century
  - Ability to integrate info from multiple projects
  - Show the status of active, approved, and future projects across an entire organization and
  - Provide links to more detailed info
### Project management software

- **Low end tools**
  - Provide basic project management (less than $200 per user) – Milestone Simplicity
- **Midrange tools**
  - Handle larger project, multiple users, multiple projects ($200 – $500) – Microsoft Project
- **High-end tools**
  - Handle very large projects, dispersed workgroups, summarize and combine individual project info to provide an enterprise view of all projects – generally licensed and accessible via the Internet – Pacific Edge

### IT context

- **Theories and concepts - not difficult to understand**
- **Implementation – difficult**
- **Components**
  - Using a system approach
  - Understanding organizations
  - Managing stakeholders
  - Project/product life cycle, etc.

### Systems approach - a holistic and analytical approach to solving complex problems using systems philosophy, systems analysis, and systems management

- Systems – sets of interacting components working within an environment to fulfill some purpose
- Systems philosophy – an overall model for thinking about things as systems

### Understanding organizations

- **Four different frames**
  - The structural frame – deals with how the organisation is structured. Focuses on different group’s roles and responsibilities in order to meet the goals
  - The HR frame – focuses on producing harmony between the needs of the organisation and the needs of the people. Often mismatches
  - The political frame – politics in organisations take the form of competition among groups or individuals for power and leadership. Forming coalitions
  - The symbolic frame – not what happened but what it means, CEO at the meeting, his/her endorsement or threat

### Organizational structures

- **Functional**
- **Project**
- **Matrix**
Tom Walters recently accepted a new position at his college as the Director of Information Technology. Tom had been a respected faculty member at the college for the past fifteen years. The college – a small, private university in the Southwest – offered a variety of courses in the liberal arts and professional areas. Enrolment included 1,500 full time traditional students and about 1,000 working – adult students attending an evening program. Many instructors supplemented their courses with information on the Internet and course web sites, but they did not offer any distance learning courses.

The college’s niche was serving students in that region who liked the setting of a small arts college. Like most colleges, its use of IT had grown tremendously in the past five years. There were a few classrooms on campus with computers for the instructors and students, and a few more with just instructor stations and projection systems. Tom knew that several colleges throughout the country had begun to require that all students lease laptops and that these colleges incorporated technology components into most courses. This idea fascinated him. He and two other members of the IT Department visited a local college that had required all students to lease laptops for the past three years, and they were very impressed with what they saw and heard. Tom and his staff developed plans to start requiring students to lease laptops at their college the next year.

Tom sent an e-mail to all faculty staff in September, which briefly described this and other plans. He did not get much response, however, until February faculty meeting when, as he described some of the details of his plan, the chairs of the History, English, Philosophy, and Economics departments all voiced their opposition to that idea. They eloquently stated that the college was not a technical training school, and that they thought the idea was ludicrous.

Members of the Computer Science Department voiced their concern that all of their students already had state-of-the-art computers and would not want to pay a mandatory fee to lease less powerful laptops. The Director of the adult education program expressed his concern that many adult education students would balk at an increase in fees. Tom was in shock to hear his colleagues’ responses, especially after he and his staff had spent a lot of time planning details of how to implement the use of laptops at their campus.
• After several people voiced concerns about the laptop idea at the faculty meeting, the president of the college directed that a committee be formed to formally review the concept of requiring students to lease laptops in the near future. Because the college was dealing with several other important enrolment-related issues, the president named the vice president of enrolment to head the committee. Other people soon volunteered or were assigned to the committee, including Tom Walters as head of IT, the director of the adult education program, the chair of the Computer Science Department, and the chair of History Department. The president also insisted that the committee include at least two members of the student body. The president knew everyone was busy, and he questioned whether the laptop idea was a high priority issue for the college. He directed the committee to present a proposal at the next month’s faculty meeting, either to recommend the creation of a formal project team (of which these committee members would commit to be a part) to fully investigate requiring laptops, or to recommend terminating the concept.
• At the next faculty meeting, few people were surprised to hear the recommendation to terminate the concept.

Lessons learned
• Viewing only part of the structural frame of the college (focused only on IT Department, did not involve other stakeholders including the main customers – students)
• If focused on HR frame, it would be possible to identify mismatches between the needs of the college and the needs of individuals, as well as who would most support or oppose requiring laptops

• Using political frame it would be possible to consider the main interest groups that would be most affected by this project’s outcome, and build coalition with them
• Using symbolic frame – soliciting a strong endorsement from the college president or dean before talking to the faculty meeting – could influence the outcome

• The importance of top management commitment
• The need for organizational commitment to IT
• The need for organizational standards

Phases of the project life
• Project phases and the project life cycle
  • Concept
  • Development
  • Implementation
  • Close out
• Product life cycle
• System Development Life Cycle (SDLC)
• The waterfall life cycle
  – Assumes that requirements will stay stable after they are defined
• The spiral life cycle
  – Most software is developed using an iterative/spiral approach
• The incremental build life cycle
  – With each release providing added capabilities
• The prototyping life cycle
  – Developing software prototype to clarify user requirements
• The rapid development (RAD) life cycle
  – Developers work with an evolving prototype

• Adaptive Software development (ASD)
  – Development is risk-driven and change tolerant
• Extreme Programming (XP)
  – Developing software in rapidly changing environment
  – Produces tangible results in a short time
• Scrum
  – Uses iterative development to address changing environment
  – Each day the entire team meets for a short meeting (scrum)
  – All the obstacles identified by the team members must be resolved by the project manager
  – Strong leadership - coordination

• The importance of project phases and management reviews
• The nature of IT projects
• Characteristics of IT project team members
• Diverse technologies
• Skills for a project manager