Chapter 10
Project Management

INTRODUCTION

• This chapter provides an overview of what a project is and how to manage one
• It discusses the aspects of IT-intensive projects that make them uniquely challenging
• Finally, it identifies the issues that shape the role of the general manager in such projects and help them to manage risk

Learning Objectives

• List the elements of a good project.
• Understand why many IT projects fail to meet their targeted goals.
• Explain the relationship between time, scope, and cost of a project.
• Explain why Gantt charts are popular for planning schedules.
• Define RAD and explain how it compares to the SDLC.
• Be able to identify when it is time to pull the plug on a project.

Real World Example

• Rural Payments Agency (RPA), UK, blamed poor planning and lack of system testing for delays in paying out 1.5 billion pounds of EU subsidies.
  – Only 15% were paid out by the end of 2006.
• The RPA had to make substantial changes to the system post implementation.
  – Testing did not take into account the real environment, leading to unanticipated work to populate the database in the first place.
• The system had not been properly managed.
  – Costs were at 122 million pounds, and were originally estimated at 46.5 million.

WHAT DEFINES A PROJECT

• Organizations combine two types of work—projects and operations (Figure 10.1).
• Both types are performed by people and require a flow of limited resources.
• Both are planned, executed, and controlled.
• Figure 10.1 compares characteristics of both project and operational work.
  “[A] project is a temporary endeavor undertaken to create a unique product or service. Temporary means that every project has a definite beginning and a definite end. Unique means that the product or service is different in some distinguishing way from all similar products or services.”
Projects

- Companies use projects and operations to generate revenue.
- Projects are temporary endeavors that have a fixed start and stop date and time.
- Operations are ongoing, repetitive tasks that are performed until they are changed or replaced.
- Project managers may break projects into subprojects depending upon the work.
- Figure 11.1 shows the differences between operational and project-based work.

Project Stakeholders

- All projects have stakeholders.
  - Project stakeholders are the individuals and organizations that are either involved in the project, or whose interests may be affected as a result of the project.
    - Include the project manager, project team, and the project sponsor (a general manager who provides the resources).
  - The customer is an important stakeholder group.
  - Individuals or organizations who use the project’s product.
  - Multiple layers of customers may be involved.
- The relationships among the project stakeholders are displayed in Figure 10.2.

Organizing the Project

- A project manager can divide the project into subprojects,
- Subprojects can be based on distinct activities (e.g., quality control testing).
- This organizing method enables the project manager to contract certain kinds of work externally.
  - Provides a framework for managing crucial project resources, competing resource requirements, and shifting priorities among a set of projects.

Figure 10.1 Characteristics of operational and project work.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Operations</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor skills</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Training time</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Worker autonomy</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Compensation system</td>
<td>Hourly or weekly wage</td>
<td>Lump sum for project</td>
</tr>
<tr>
<td>Material input requirements</td>
<td>High certainty</td>
<td>Uncertain</td>
</tr>
<tr>
<td>Supplier ties</td>
<td>Longer duration</td>
<td>Shorter duration</td>
</tr>
<tr>
<td>Raw Materials inventory</td>
<td>Large</td>
<td>Small</td>
</tr>
<tr>
<td>Scheduling complexity</td>
<td>Lower</td>
<td>Higher</td>
</tr>
<tr>
<td>Quality control</td>
<td>Formal</td>
<td>Informal</td>
</tr>
<tr>
<td>Information flows</td>
<td>Less important</td>
<td>Very important</td>
</tr>
<tr>
<td>Worker-management communication</td>
<td>Less important</td>
<td>Very important</td>
</tr>
<tr>
<td>Duration</td>
<td>Ongoing</td>
<td>Temporary</td>
</tr>
<tr>
<td>Product or service</td>
<td>Repetitive</td>
<td>Unique</td>
</tr>
</tbody>
</table>

Figure 10.2 Relationships among project stakeholders.

- What are the three elements in the “Project Triangle”?
- What is the center in the triangle?
What is Project Management?

- Project management:
  - Applying knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations.
  - Involves continual trade-offs managed by the project manager.
- Trade-offs can be subsumed in the project triangle (Fig. 10.3).
  1. **Scope** may be divided into:
    - *Product scope* - the detailed description of the product’s quality, features, and functions.
    - *Project scope* - the work required to deliver a product or service with the intended product scope.
  2. **Time** refers to the time required to complete the project.
  3. **Cost** encompasses all the resources required to carry out the project.
- Cost vs. Quality: The quality of a system will normally impact its cost.

Project Management versus Process Management

“Ultimately, the parallels between process and project management give way to a fundamental difference: process management seeks to eliminate *variability* whereas project management must accept *variability* because each project is unique.”


Success vs. Failure

- What is the difference between “Success” and “Failure”?
- “I DO NOT HAVE TIME”

Why do Projects Fail?

Studies have shown that the following factors contribute significantly to project failure:

- Improper focus of the project management system
- Fixation on first estimates
- Wrong level of detail
- Lack of understanding about project management tools; too much reliance on project management software
- Too many people
- Poor communication
- Rewarding the wrong actions

Failed IS Projects

- Standish Group found that 67 percent of all software projects are challenged
  - Late, over budget or fail to meet performance criteria.
- Managing a business project means managing an information systems project.
  - Why?
  - Many systems use or integrate the Internet.
Successful IS Projects

• To succeed, “a” general manager must be a project manager and must learn how to manage this type of risk.
• Executive management no longer has an option but to consider skilled IT project management as fundamental to business success.

The Need for Project Management

• Critical for companies today: the ability to adapt existing business processes faster than the competition.
• Typical adaptation projects include:
  ➢ “Rightsizing” the organization (what is another name?)
  ➢ Reengineering business processes
  ➢ Adopting more comprehensive, integrative processes

Project Management

• Changes in any one of the sides of the triangle affect one or both of the other sides.
  ➢ Scope creep - increasing the scope after a project has begun.
• The project stakeholders decide on the overriding “key success factor” (i.e., time, cost, or scope).
  ➢ The project manager is responsible for demonstrating to stakeholders the impact of the key success factors on the project.
  ➢ Stakeholders are concerned about all facets of the project.
  ➢ Measuring and tracking progress by tracking time, cost, scope, resources, quality, and risks.

Project Management - Business Case

• The business case spells out the components of the project and sets the foundation.
  ➢ Argues resources for the project.
  ➢ Clearly articulates the details of the project and contingency plans.
  ➢ Implementation issues, areas of concern, and gaps are first identified in the planning phase.
• A strong business plan gives the project team a reference document to help guide decisions and activities.
• Project management software (e.g., Microsoft Project, Intuit Quickbase, Basecamp):
  ➢ Tracks team members, deliverables, schedules, budgets, priorities, tasks, and other resources.
  ➢ Provides a dashboard of key metrics.

Essential Project Elements

• There are four components essential for any project and necessary to assure a high probability of project success:
  1. Project management.
     ➢ A project sponsor and a project manager are needed so that project can be coordinated and executed appropriately.
  2. A project team.
     ➢ to ensure all parts of the project come together effectively and correctly (make sure to clearly define the teams objectives).
  3. A project cycle plan.
     ➢ The methodology and schedule to execute the project (Gantt charts, CPM, and PERT diagrams).
     ➢ The sequential steps of organizing and tracking the work of the team.
     ➢ Method and schedule
  4. A common project vocabulary.
     ➢ so all team members can communicate effectively (very important as
**Project leadership**

- Lack of leadership can result in unmotivated or confused people.
- Strong project leaders skillfully manage team composition, reward systems, and other techniques to focus, align, and motivate team members.
- Figure 10.4 reflects the inverse relationship between the magnitude of the project leader’s role and the experience and commitment of the team.
- Factors influencing the project managers and team’s performance:
  - Organizational culture.
  - Socioeconomic influences.

**Project Team**

- A project team consists of those people who work together to complete the project.
- Teams fail because members don’t understand the nature of the work required.
- Teamwork should:
  - Clearly define the team’s objectives.
  - Define each member’s role in achieving these objectives.
  - Have norms about conduct, shared rewards, a shared understanding of roles, and team spirit.
- Project managers should leverage team member skills, knowledge, experiences, and capabilities.
- Team members should share information about their departments.

**Project Cycle Plan**

- The project cycle plan organizes discrete project activities, sequencing them into steps along a time line.
  - Therefore, the project delivers according to the requirements of customers and stakeholders.
- Identifies critical beginning and ending dates and breaks the work spanning these dates into phases.
- The three most common approaches (and software tools) are:
  - Project Evaluation and Review Technique (PERT) (Figure 10.5):
    - Estimates about the time needed to complete project tasks, calculating the optimistic, most probable, and pessimistic time requirements for completing each task.
  - Critical Path Method (CPM): deterministic task times.
  - If any activity on critical path delayed, the overall project time will be increased.
- Gantt chart: displaying time relationships of project tasks and monitoring the progress toward project completion (Figure 10.6)
- Figure 10.7 compares both a generic project cycle plan and the Project Management Institute’s project life cycle.

**Project Management - Key Players**

- The project sponsor:
  - Liaises between the project team and other stakeholders.
  - Is a project champion providing leadership.
  - Is a senior C-level executive with influence with the key stakeholders and C-level team.
  - Provides the financial resources for the project.
- The project manager:
  - Requires a range of management skills to make the project successful.

**The Project Manager Skills**

- A Project Manager’s skills include:
  - Identifying requirements of the systems to be delivered.
  - Providing organizational integration by defining the team’s structure.
  - Assigning team members to work on the project (team mgt.)
  - Managing risks and leveraging opportunities.
  - Measuring the project’s status, outcomes, and exception to provide project control.
  - Making the project visible to general management and other stakeholders (visibility)
  - Measuring project status against the plan, often using project management software.
  - Taking corrective action when necessary to get the project back on track.
  - Project leadership.

The major focus of the status element of management is “proactive” as there is a need “strong” of project leaders to help the organization develop project competency to begin with.
**Project Manager’s Role**

- The project manager will typically be involved in:
  - Ensuring progress of the project according to defined metrics.
  - **Identifying risks.**
  - Ensuring progress toward deliverables within **time** and **resource constraints**.
  - Running coordination meetings.
  - Negotiating for resources on behalf of the project.

But, not to determining the best fit of the project in the organization’s vision.

- Business projects are often initiated because of a successful business case.
  - A successful project begins with a well-written business case (i.e., spells out components of the project.).

**Project Cycle Plan Software**

- **PERT:**
  - Identifies the **tasks**, orders the tasks in a time sequence, identifies their interdependencies, and estimates the time required to complete the task.
  - **Critical tasks** - must be performed individually; together they account for the total elapsed time of the project.
  - **Non-critical tasks** - can be built into the schedules without affecting the duration of the entire project.

- **CPM:**
  - A tool that is similar to PERT.
  - Incorporates a capability for identifying **relationships** between costs and the completion date of a project as well as the amount and value of resources that must be applied in alternative situations.

**Figure 10.5 PERT chart**

Shows dependencies between tasks.

**CPM - Node Configuration**

- **Activity number**
- **Activity duration**
- **Earliest start**
- **Earliest finish**
- **Latest finish**
- **Latest start**

**Activity of Latest Start and Finish Times**

<table>
<thead>
<tr>
<th>Activity</th>
<th>LS</th>
<th>LF</th>
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<tbody>
<tr>
<td>#1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>#2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>#3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>#4</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>#5</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>#6</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>#7</td>
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<td>3</td>
</tr>
<tr>
<td>#8</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>#9</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

- **LS** = LF - t
- **LF** = min(LS followings)
- **t** = duration of the activity

**Example Activity:**

- **#2, LF = min(LS followings) = min(5,6) = 5**
- **LS = LF - t = 5 - 2 = 3**

**Example:**

- **Start**
  - **Lay foundations**
  - **Build house**
- **Design house and obtain financing**
- **Order and receive materials**
- **Select paint**
- **Select carpet**
- **Finish work**

**PROJECT CYCLE PLAN (cont.)**
### IT Project Development Methodologies and Approaches

- The choice of development methodologies and managerial influences distinguish IT projects from other projects.
- The systems development life cycle (SDLC) - a traditional tool for developing IS or implementing software developed by an outsourcing provider or software developer.
- Other development approaches:
  - Agile development
  - Prototyping
  - Rapid applications development (RAD)
  - Joint applications development (JAD)
Project Development Methodologies

- The choice of development methodologies and managerial influences distinguish IT projects from other projects.
- There are four main methodologies IT professionals use to manage the technology projects:
  - Systems Development Life Cycle (SDLC)
  - Prototyping
  - Rapid applications development (RAD)
  - Joint applications development (JAD)

Systems Development Life Cycle

SDLC typically consists of seven phases
1. Initiation of the project
2. The requirements definition phase
3. The functional design phase
4. The system is actually built
5. Verification phase
6. The “cut over” where the new system is put in operation and all links are established. Possible conversion methods
   a) Parallel
   b) Direct
   c) Phased in/out
   d) Pilot
7. The maintenance and review phase

See Figure 10.8 for more information on each step.

Traditional SDLC Methodology Issues

- Several problems arise with using traditional SDLC methodology:
  - Many systems projects fail to meet objectives.
  - The skills needed to estimate costs and schedules are difficult to obtain.
  - Each project is unique.
  - The objectives may reflect a scope that is too broad or too narrow.
  - The problem the system was designed to solve may still exist.
  - Organizations need to respond quickly.

  - Not enough time available to adequately do each step of the SDLC for each IT project.

  - Newer methodologies designed to address these concerns use an iterative approach (Figure 10.9).

Systems Development Life Cycle

- Systems Development: a set of activities used to create an IS.
- Systems Development Life Cycle (SDLC): the process of designing and delivering the entire system.
- The SDLC generally is used in one of two distinct ways:
  - as a general project plan of all activities required for the entire system to operate:
    - Plan includes the analysis and feasibility study, the development or acquisition of components, the implementation activities, the maintenance activities, and the retirement activities.
  - as a process to design and develop system software:
    - Process is highly structured, disciplined, and formal.
Agile Development

- Agile development methodologies were developed for situations where a predictable development process cannot be followed.
  - E.g., XP (Extreme Programming), Crystal, Scrum, Feature-Driven Development, and Dynamic System Development Method (DSDM).
- Agile development is people-oriented rather than process oriented.
  - Adapts to changing requirements by iteratively developing systems in small stages and then testing the new code extensively.
  - The mantra for agile programming is “Code a little; test a little.”
- DSDM is an extension of Rapid Application Development (RAD) used in the UK and is based on the underlying principles of active user interaction, frequent deliveries, and empowered teams.

Prototyping

- Prototyping is one of the most popular rapid application development (RAD) methods.
- It is an iterative process of system development in which requirements are converted to a working system that is continually revised through close work between analysts and users.

Prototyping (cont.)

- DSDM:
  - incorporates a project planning technique that divides the schedule into a number of separate time periods (timeboxes) with each part having its own deliverables, deadline, and budget.
  - is based on four types of iterations:
    - Study (business and feasibility).
    - Functional model.
    - Design and build.
    - Implementation.
- XP is a more prescriptive agile methodology.
  - XP revolves around 12 practices, including pair programming, test-driven development, simple design, and small releases.
  - Some disadvantages include difficulty estimating the required effort easily getting off track if the customer is unclear about final outcomes.

Prototyping

- SDLC may not work for all situations, requires a lot of planning and is difficult to implement quickly.
- Prototyping is a type of evolutionary development.
- Builds a fast, high-level version of the system at the beginning of the project.
- Advantages include:
  - User involvement and comment early on and throughout the development process.
- Disadvantages include:
  - Documentation may be difficult to write.
  - Users may not understand the realistic scope of the system.
  - The final prototype may not be scalable to an operational version.
  - Suitable for “quick-and-dirty” types of systems.
  - System design flaws may be more prevalent.
### Other Development Methodologies and Approaches

- **Rapid applications development (RAD)**, joint applications development (JAD), Object-oriented analysis, design and development, and the open sourcing approach.

- **RAD** is similar to prototyping in that it is an interactive process in which tools are used to drastically speed up the development process.
  - Has tools for developing the user interface, graphical user interface (GUI), reusable code, code generation, and programming language testing and debugging.
  - Enables the developer to build a library of standard sets of code—or objects—used and reused in multiple applications.
  - “Drags and drops” objects into the design.
  - Automatically writes the code necessary to include that functionality.

- **Joint applications development (JAD):**
  - Is a version of RAD or prototyping.
  - Has users that are more integrally involved.
  - Uses a group approach to elicit requirements by interviewing groups of users.
  - Is expensive due to travel and living expenses needed to coordinate participants.

- **Object-oriented development:**
  - Is a way to avoid the pitfalls of procedural methodologies.
  - Builds on the concept of objects—or reusable components.
  - An object encapsulates both the data stored about an entity and the operations that manipulate that data.

### Open Sourcing Approach

- **Linux:**
  - Was created by Linus Torvalds and several thousand hackers around the world.
  - Is a world-class OS—a clone of Unix.
  - Was built using a development approach called open sourcing, which is the process of building and improving “free” software via an Internet community.
  - Eric Raymond suggests that the Linux community resembles a great bazaar of differing agendas and approaches (with submissions from anyone) out of which a coherent and stable system emerged.

- **Software** is open source software (OSS) if it is released under a license approved by the Open Source Initiative (OSI).
  - The most widely used OSS license is the general public license (GPL), which is based on the concept of free software.

### Free Software

- **Free software offers the following freedoms** for the software users:
  - The freedom to run the program for any purpose.
  - The freedom to study how the program works and adapt it to your needs. Access to the source code is a preconditional for this.
  - The freedom to distribute copies so that you can help your neighbor.
  - The freedom to improve and release your improvements to the public so that the whole community benefits. Access to source code is a preconditional for this.
  - A user who modifies the software must observe the rule of copyright.
    - Copyleft - a user cannot add restrictions to deny others their central freedoms regarding the free software.
Open Sourcing Movement

• The Open Sourcing Movement.
  ➢ Offers a speedy way to develop software that:
    ✓ is available to a whole community.
    ✓ uses widespread testing.
    ✓ is free.
  ➢ A number of managerial issues are associated with its use in a business organization.
    ➢ Preservation of intellectual property.
    ➢ Updating and maintaining open source code.
    ➢ Competitive advantage.
    ➢ Tech support.
    ➢ Standards.

Popular Open Source Software

• Examples of popular open source:
  ➢ Software Mozilla (a popular web browser core).
  ➢ Apache (web server).
  ➢ PERL (web scripting language).
  ➢ OpenOffice (a Sun Microsystems-originated set of office applications that support the Microsoft Office suite formats).
  ➢ PNG (graphics file format).
• Open source applications available on the Internet, including Web 2.0 applications, are becoming part of the corporate infrastructure.

MANAGING IT PROJECT RISK

• IT projects are often distinguished from many non-IT projects on the basis of their high levels of risk.
  ▶ Risk is the possibility of additional cost or loss due to the choice of alternative.
    ➢ Some alternatives have a lower associated risk than others.
    ➢ Risk can be quantified by assigning a probability of occurrence and a financial consequence to each alternative.
• Risk is to be considered as a function of:
  ➢ Complexity
  ➢ Clarity
  ➢ Size

Assessing Project Risk

<table>
<thead>
<tr>
<th>Clarity</th>
<th>Low Structure</th>
<th>High Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Low risk</td>
<td>Low risk</td>
</tr>
<tr>
<td>Company-Relative Technology</td>
<td>Low risk (very susceptible to mismanagement)</td>
<td>Very low risk (very susceptible to mismanagement)</td>
</tr>
<tr>
<td>Small Project</td>
<td>Very low risk</td>
<td>Very low risk</td>
</tr>
<tr>
<td>High</td>
<td>Very high risk</td>
<td>Medium risk</td>
</tr>
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</tr>
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<td>Medium-risk</td>
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</tr>
</tbody>
</table>

Complexity

• The complexity level is the extent of difficulty and interdependent components of the project.
• Several factors contribute to greater complexity in IT projects:
  ➢ The sheer pace of technological change.
  ➢ The degree of uncertainty in identifying and agreeing on common goals.
• Complexity can be determined once the context of the project has been established.

Clarity

• Clarity is concerned with the ability to define the requirements of the system.
  ➢ A project has low clarity if the users cannot easily state their needs or define what they want from the system.
  ➢ A project with high clarity is one in which the systems requirements can be easily documented and do not change.
### Size

- Size plays a big role in project risk.
- A project can be considered big if it has:
  - a large budget relative to other budgets in the organization.
  - a large number of team members or number of man-months.
  - a large number of organizational units involved in the project.
  - a large number of programs/components.
  - a large number of function points or lines of code.

### Managing Project Risk Level

- The project’s complexity, clarity, and size determine its risk.
- Varying levels of these three determinants affect the amount of project risk.
- Large, highly complex projects that are low in clarity are extremely risky.
- Small projects that are low in complexity and high in clarity are usually low risk.
- Everything else is somewhere in between.
- The level of risk determines how formal and detailed the project management system and planning should be.
- When it is difficult to estimate duration or expense of a project because it is complex or has low clarity, formal management practices or planning may be inappropriate.
- Formal planning tools may be useful in low-risk projects.

### Managing the Complexity Aspects of Project Risk

- Strategies that may be adopted in dealing with complexity are:
  - Leveraging the technical skills of the team.
    - Having a leader or team members who have had significant work experience.
  - Relying on consultants and vendors.
    - Their work is primarily project-based and they usually possess the crucial IT knowledge and skills.
  - Integrating within the organization.
    - Having frequent team meetings, documenting critical project decisions, and holding regular technical status reviews.
    - Requires good communication among team members.

### Managing Clarity Aspects of Project Risk

- When a project has low clarity, project managers need to:
  - rely more heavily upon the users to define system requirements.
  - manage stakeholders.
    - Managers must balance the goals of the various stakeholders to achieve desired project outcomes.
    - Often involves both the project manager and the general manager.
  - Sustain project commitment (Figure 10.11).
    - Four primary types of determinants of project commitment:
      - Project determinants.
      - Psychological determinants.
      - Social determinants.
      - Organizational determinants.

### Measuring Success

- At the start of the project, the general manager should consider several aspects based on achieving the business goals.
- Care is needed to prevent a too narrow or too broad set of goals.
- It is important that the goals be measurable so that they can be used throughout the project to provide the project manager with feedback.
MEASURES OF INFORMATION SYSTEM SUCCESS

1. HIGH LEVELS OF USE
2. USER SATISFACTION
3. FAVORABLE ATTITUDES
4. ACHIEVED OBJECTIVES
5. FINANCIAL PAYOFF

Gauging Success

At the start of the project, the general manager should:

- consider several aspects based on achieving the business goals.
  - The goals be measurable and should be used throughout the project to provide the project manager with feedback.
- assess if the system meets the specifications and project requirements laid out in the project scope.
  - Metrics may be derived specifically from the requirements and business needs.
- Four dimensions that are useful in determining if a project is successful or not (Figure 10.12):
  - Resource constraints.
  - Impact on customers.
  - Business success.
  - Prepare the future.

IT and its Influences

MANAGING IT PROJECT RISK

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- Risk is the possibility of additional cost or loss due to the choice of alternative.
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<td>Medium-low risk</td>
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IT and its Influences

- Efficiency/____ raise_____ Productivity
- Risk
POOR PROJECT MANAGEMENT

- COST OVERRUNS
- TIME SLIPPAGE
- TECHNICAL SHORTFALLS IMPAIR PERFORMANCE
- FAILURE TO OBTAIN ANTICIPATED BENEFITS

Project Development Processes

- Gather Information
- Drill Down Information
- Analyze/Visualize Information
- Generate Report

Creating a Project Budget

WBS

Project Plan

Scheduling

Budgeting

- Top-down
- Bottom-up
- Activity-based costing (ABC)

The budget is a plan that identifies the resources, goals and schedule that allows a firm to achieve those goals

Activity-Based Costing

Projects use activities & activities use resources

1. Assign costs to activities that use resources
2. Identify cost drivers associated with this activity
3. Compute a cost rate per cost driver unit or transaction
4. Multiply the cost driver rate times the volume of cost driver units used by the project

Budget Contingencies

The allocation of extra funds to cover uncertainties and improve the chance of finishing on time.

Contingencies are needed because
- Project scope may change
- Murphy’s Law is present
- Cost estimation must anticipate interaction costs
- Normal conditions are rarely encountered

Summary

- General manager fulfills an important role in project management.
- Project management involves continual trade-offs.
- Four important project elements: Common vocabulary, teamwork, project cycle plan, and project management.
- Important to understand the complexity of a project.
- SDLC, prototyping, JAD and RAD are used for development of IS systems.
- Manage project risk carefully.
- The PMO can be very useful.
END OF CHAPTER 11