Managing Projects
chapter 14

14.1 THE IMPORTANT OF PROJECT MANAGEMENT

A systems development project without proper management will most likely suffer these consequences:

- Costs that vastly exceed budgets
- Unexpected time slippage
- Technical performance that is less than expected
- Failure to obtain anticipated benefits

PROJECT MANAGEMENT OBJECTIVES

- **A project is** a planned series of related activities for achieving a specific business objective. Information systems projects include the development of new information systems, enhancement of existing systems, or upgrade or replacement of the firm's information technology (IT) infrastructure.
- **Project management refers to** the application of knowledge, skills, tools, and techniques to achieve specific targets within specified budget and time constraints

Project management activities include:

1. planning the work
2. assessing risk
3. estimating resources required to accomplish the work
4. organizing the work
5. acquiring human and material resources
6. assigning tasks
7. directing activities
8. controlling project execution
9. reporting progress
10. analyzing the results

project management for information systems must deal with five major variables, they are:

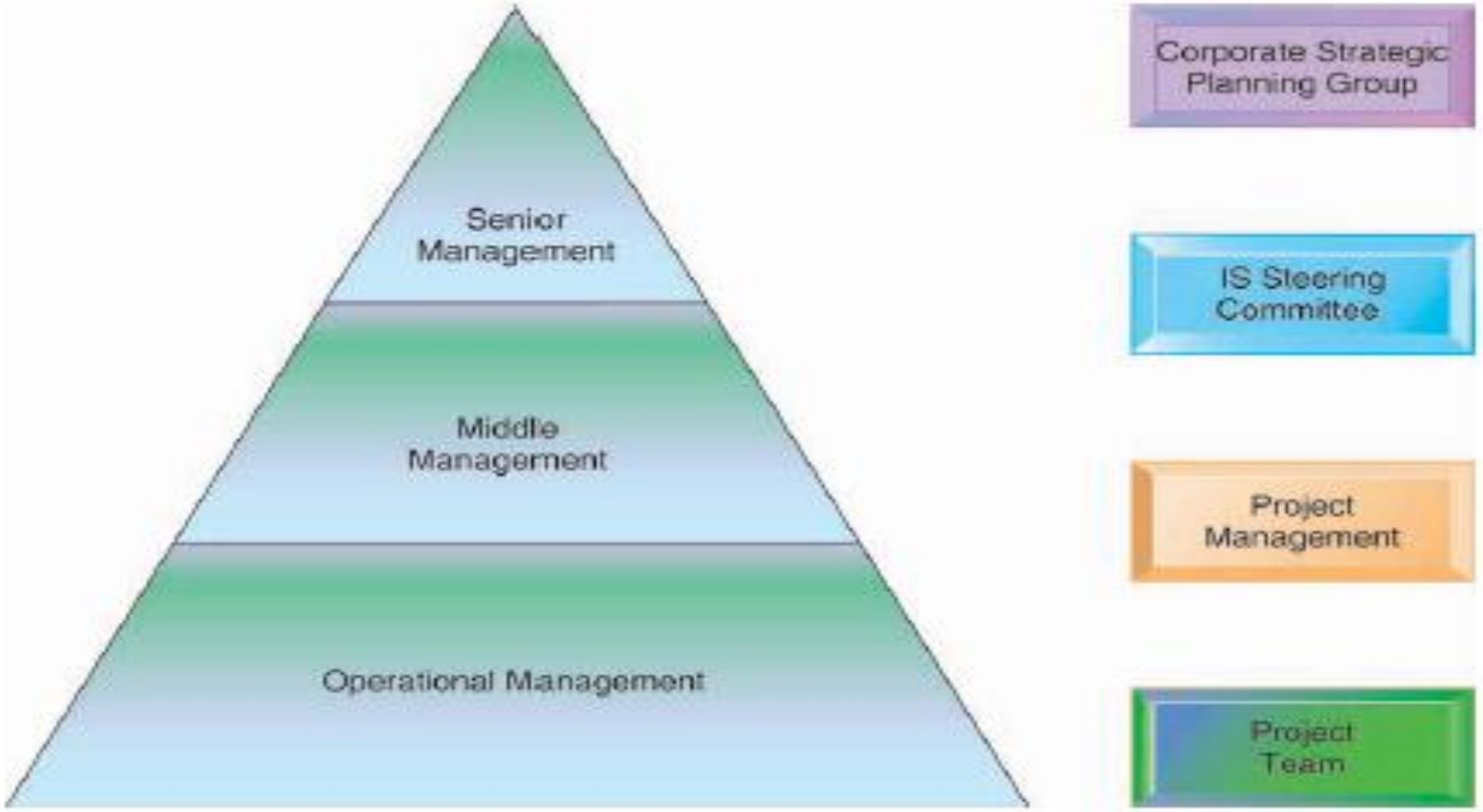
1. Scope, defines what work is or is not included in a project
2. Time is the amount of time required to complete the project.
3. Cost is based on the time to complete a project multiplied by the cost of human resources required to complete the project.
4. Quality is an indicator of how well the end result of a project satisfies the objectives specified by management.
5. Risk refers to potential problems that would threaten the success of a project

SELECTING PROJECTS

1. **MANAGEMENT STRUCTURE FOR INFORMATIONSYSTEMS PROJECTS**

   Companies typically are presented with many different projects for solving problems and improving performance. There are far more ideas for systems projects than there are resources. Firms will need to select from this group the projects that promise the greatest benefit to the business.

FIGURE 14.2 MANAGEMENT CONTROL OF SYSTEMS PROJECTS



Each level of management in the hierarchy is responsible for specific aspects of systems projects, and this structure helps give priority to the most important systems projects for the organization.

LINKING SYSTEMS PROJECTS TO THE BUSINESS PLAN

In order to identify the information systems projects that will deliver the most business value, organizations need to develop an **information systems plan** that supports their overall business plan and in which strategic systems are incorporated into top-level planning. The plan serves as a road map indicating the direction of systems development (the purpose of the plan), the rationale,the current systems/situation, new developments to consider, the management strategy, the implementation plan, and the budget.

The plan contains a statement of corporate goals and specifies how information technology will support the attainment of those goals. The report shows how general goals will be achieved by specific systems projects. It identifies specific target dates and milestones that can be used later to evaluate the plan's progress in terms of how many objectives were actually attained in the time frame specified in the plan. The plan indicates the key management decisions concerning hardware acquisition; telecommunications; centralization/decentralizationof authority, data, and hardware; and required organizational change. Organizational changes are also usually described, including management

INFORMATION REQUIREMENTS AND KEY PERFORMANCE INDICATORS

To develop an effective information systems plan, the organization must havema clear understanding of both its long- and short-term information requirements. A strategic approach to information requirements, strategic analysis, or critical success factors argues that an organization's information requirements are determined by a small number of **key performance indicators (KPIs)**of managers. KPIs are shaped by the , the firm, the manager, and thebroader environment. For instance, KPIs for an automobile firm might be unit production costs, labor costs, factory productivity, re-work and error rate, customer brand recognition surveys, J.D. Power quality rankings, employee job satisfaction ratings, and health costs. New information systems should focus on providing information that helps the firm meet these goals implied by key performance indicators.

PORTFOLIO ANALYSIS

Once strategic analyses have determined the overall direction of systems development, **portfolio analysis can be used to evaluate alternative system** projects. Portfolio analysis inventories all of the organization's information systems projects and assets, including infrastructure, outsourcing contracts, and licenses. This portfolio of information systems investments can be described as having a certain profile of risk and benefit to the firm

SCORING MODELS

A **scoring model is useful for selecting projects where many criteria must**be considered. It assigns weights to various features of a system and then calculates the weighted totals. Using Table 14.2, the firm must decide among two alternative enterprise resource planning (ERP) systems. The first columnlists the criteria that decision makers will use to evaluate the systems. These criteria are usually the result of lengthy discussions among the decision- makinggroup. Often the most important outcome of a scoring model is not the score but agreement on the criteria used to judge a system.

Establishing the Business Value of Information Systems

- Information system costs and benefits
  - Tangible benefits:
    - Can be quantified and assigned monetary value
    - Systems that displace labor and save space:
      - Transaction and clerical systems
  - Intangible benefits:
    - Cannot be immediately quantified but may lead to quantifiable gains in the long run
      - For example, more efficient customer service, enhanced decision making
    - Systems that influence decision making:
      - ESS, DSS, collaborative work systems

- Capital budgeting for information systems
  - Capital budgeting models:
    - Measure value of investing in long-term capital investment projects
    - Rely on measures the firm's
      - Cash outflows
        - » Expenditures for hardware, software, labor
      - Cash inflows
        - » Increased sales
        - » Reduced costs
    - There are various capital budgeting models used for IT projects: Payback method, accounting rate of return on investment, net present value, internal rate of return (IRR

- **Real options pricing models (ROPM)**
  - Can be used when future revenue streams of IT projects are uncertain and up-front costs are high
  - Use concept of options valuation borrowed from financial industry
  - Gives managers flexibility to stage IT investment or test the waters with small pilot projects or prototypes to gain more knowledge about risks before investing in entire implementation
- **Limitations of financial models**
  - Do not take into account social and organizational dimensions that may affect costs and benefits

Managing Project Risk

- **Dimensions of project risk**
  - **Level of project risk influenced by:**
    - Project size
      - Indicated by cost, time, number of organizational units affected
      - Organizational complexity also an issue
    - Project structure
      - Structured, defined requirements run lower risk
    - Experience with technology

- **Change management**
  - **Required for successful system building**
  - **New information systems have powerful behavioral and organizational impact**
    - Changes in how information is used often lead to new distributions of authority and power
    - Internal organizational change breeds resistance and opposition

Managing Project Risk

- **Implementation**
  - All organizational activities working toward adoption, management, and routinization of an innovation
- **Change agent:**
  - One role of systems analyst
  - Redefines the configurations, interactions, job activities, and power relationships of organizational groups
  - Catalyst for entire change process
  - Responsible for ensuring that all parties involved accept changes created by new system

Managing Project Risk

- **Role of end users**
  - **With high levels of user involvement:**
    - System more likely to conform to requirements
    - Users more likely to accept system
- **User-designer communication gap:**
  - **Users and information systems specialists**
    - Different backgrounds, interests, and priorities
    - Different loyalties, priorities, vocabularies
    - Different concerns regarding a new system

Managing Project Risk

- **Management support and commitment**
  - The backing and commitment of management at various levels :
    - Effects positive perception by both users and technical staff
    - Ensures sufficient funding and resources
    - Helps enforce required organizational changes

Managing Project Risk

- **Very high failure rate among enterprise application and BPR projects (up to 70% for BPR)**
  - **Poor implementation and change management practices**
    - Employee's concerns about change
    - Resistance by key managers
    - Changing job functions, career paths, recruitment practices
- **Mergers and acquisitions**
  - **Similarly high failure rate of integration projects**
  - **Merging of systems of two companies requires:**
    - Considerable organizational change
    - Complex systems projects

- **Controlling risk factors**
  - **First step in managing project risk involves identifying nature and level of risk of project.**
  - **Each project can then be managed with tools and risk-management approaches geared to level of risk.**
  - **Managing technical complexity:**
    - Internal integration tools
      - Project leaders with technical and administrative experience
      - Highly experienced team members
      - Frequent team meetings
      - Securing of technical experience outside firm if necessary

- **Formal planning and control tools**
  - **Used for documenting and monitoring project plans**
  - **Help identify bottlenecks and impact of problems**
  - **Gantt charts**
    - Visual representation of timing and duration of tasks
    - Human resource requirements of tasks
  - **PERT (program evaluation and review technique) charts**
    - Graphically depicts tasks and interrelationships
    - Indicate sequence of tasks necessary

A GANTT CHART

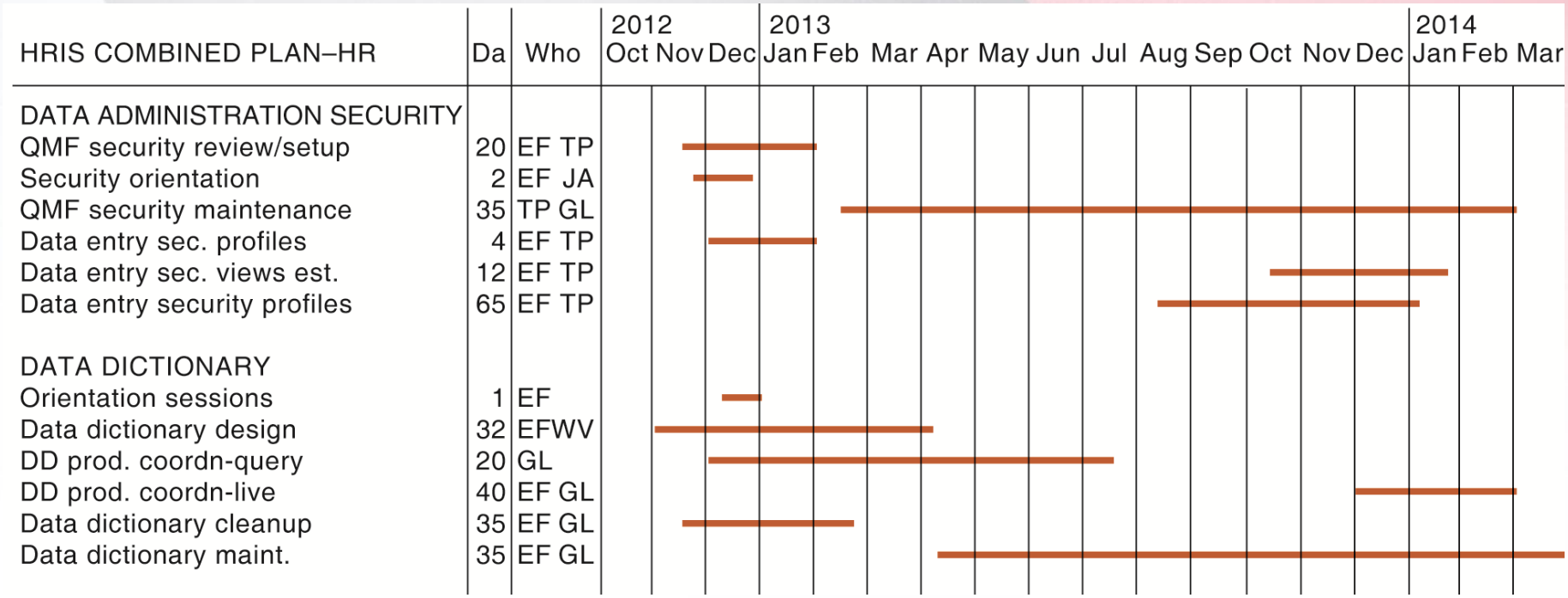


FIGURE 14-4A The Gantt chart in this figure shows the task, person-days, and initials of each responsible person, as well as the start and finish dates for each task. The resource summary provides a good manager with the total person-days for each month and for each person working on the project to manage the project successfully. The project described here is a data administration project.

A GANTT CHART

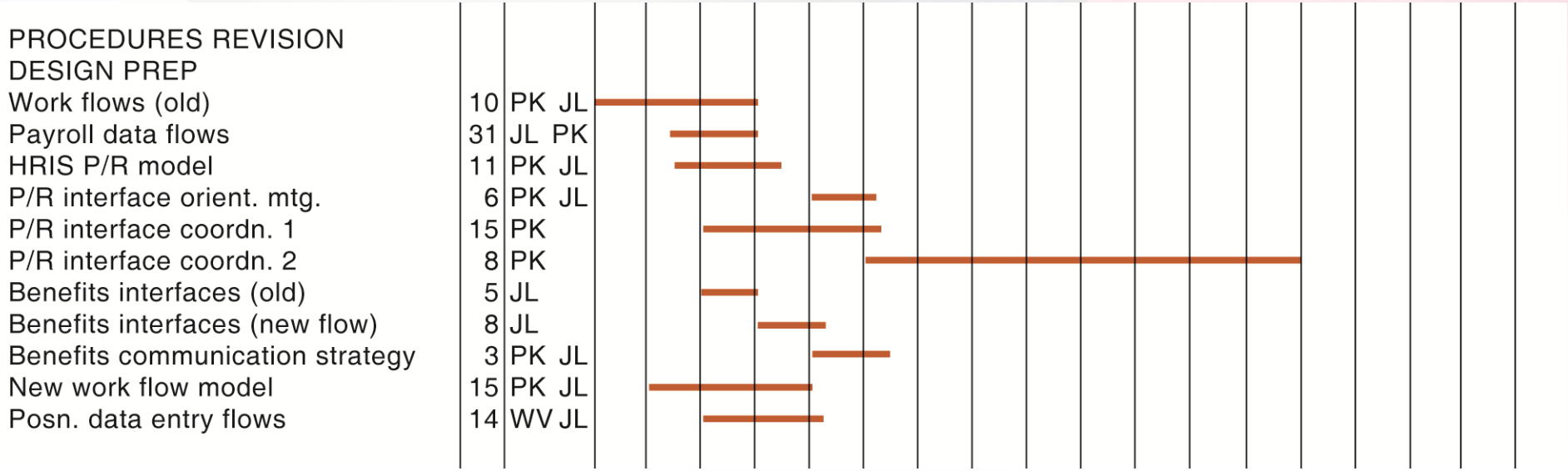


FIGURE 14-4B

A GANTT CHART

RESOURCE SUMMARY																				
Edith Farrell	5.0		EF	2	21	24	24	23	22	22	27	34	34	29	26	28	19	14		
Woody Vinton	5.0		WV	5	17	20	19	12	10	14	10	2							4	3
Charles Pierce	5.0		CP		5	11	20	13	9	10	7	6	8	4	4	4	4	4		
Ted Leurs	5.0		TL		12	17	17	19	17	14	12	15	16	2	1	1	1	1		
Toni Cox	5.0		TC	1	11	10	11	11	12	19	19	21	21	21	17	17	12	9		
Patricia Knopp	5.0		PC	7	23	30	34	27	25	15	24	25	16	11	13	17	10	3	3	2
Jane Lawton	5.0		JL	1	9	16	21	19	21	21	20	17	15	14	12	14	8	5		
David Holloway	5.0		DH	4	4	5	5	5	2	7	5	4	16	2						
Diane O'Neill	5.0		DO	6	14	17	16	13	11	9	4									
Joan Albert	5.0		JA	5	6			7	6	2	1				5	5	1			
Marie Marcus	5.0		MM	15	7	2	1	1												
Don Stevens	5.0		DS	4	4	5	4	5	1											
Casual	5.0		CASL		3	4	3			4	7	9	5	3	2					
Kathy Mendez	5.0		KM		1	5	16	20	19	22	19	20	18	20	11	2				
Anna Borden	5.0		AB					9	10	16	15	11	12	19	10	7	1			
Gail Loring	5.0		GL		3	6	5	9	10	17	18	17	10	13	10	10	7	17		
UNASSIGNED	0.0		X										9			236	225	230	14	13
Co-op	5.0		CO		6	4				2	3	4	4	2	4	16			216	178
Casual	5.0		CAUL								3	3	3							
TOTAL DAYS				49	147	176	196	194	174	193	195	190	181	140	125	358	288	284	237	196	12

FIGURE 14-4C

A PERT CHART

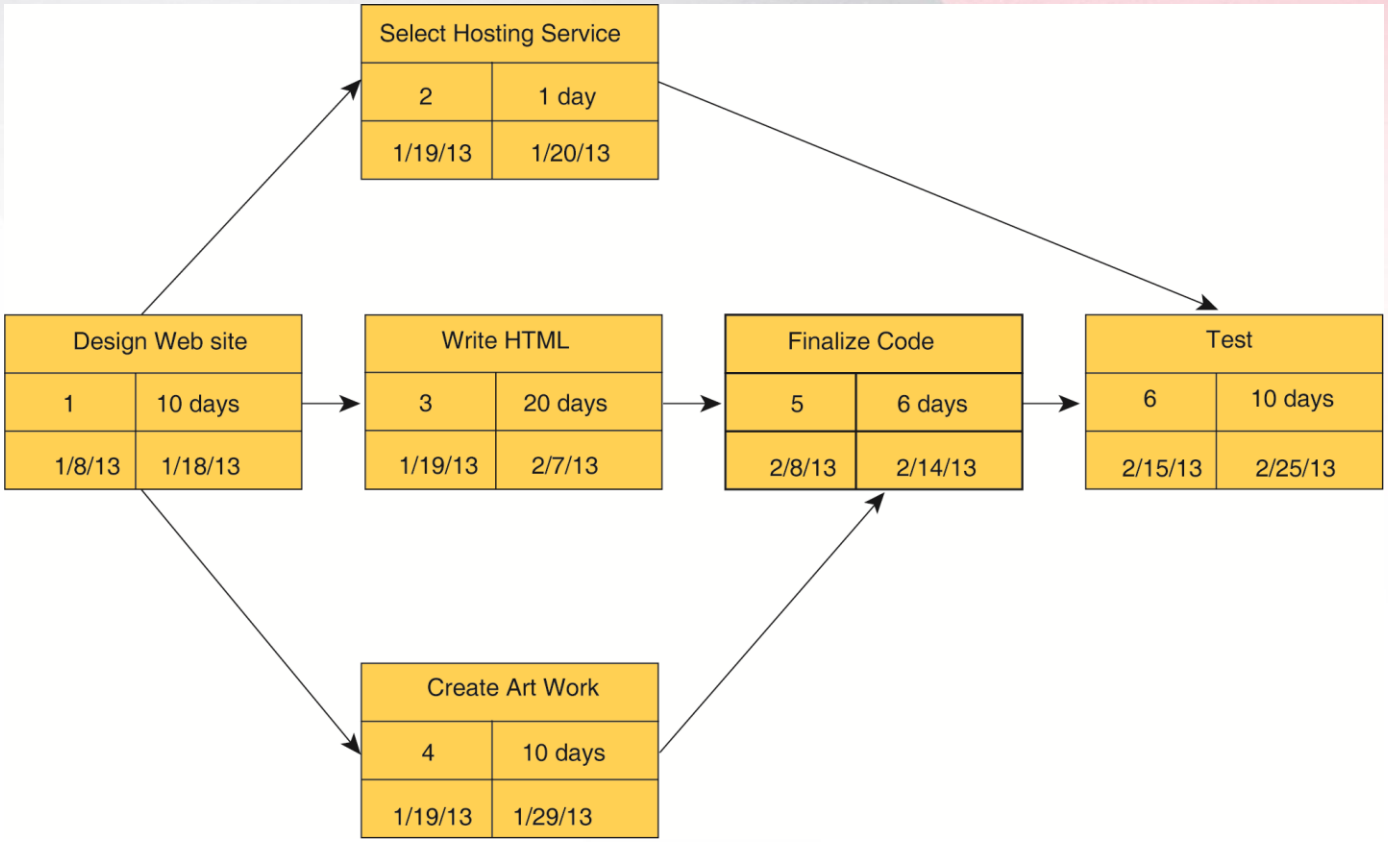


FIGURE 14-5 This is a simplified PERT chart for creating a small Web site. It shows the ordering of project tasks and the relationship of a task with preceding and succeeding tasks.

Managing Project Risk

- **Increasing user involvement and overcoming user resistance**
  - **External integration tools**
    - Link work of implementation team to users at all levels
  - **User resistance to organizational change**
    - Users may believe change is detrimental to own interests
    - Counterimplementation: Deliberate strategy to thwart implementation of a system or innovation in an organization
      - For example, increased error rates, disruptions, turnover, sabotage

- Strategies to overcome user resistance
  - User participation
  - User education and training
  - Management edicts and policies
  - Incentives for cooperation
  - Improvement of end-user interface
  - Resolution of organizational problems prior to introduction of new system

Managing Project Risk

- **Designing for the organization**
  - **Need to address ways in which organization changes with new system**
    - Procedural changes
    - Job functions
    - Organizational structure
    - Power relationships
    - Work structure
  - **Ergonomics: Interaction of people and machines in work environment**
    - Design of jobs
    - Health issues
    - End-user interfaces

Managing Project Risk

- **Organizational impact analysis**
  - **How system will affect organizational structure, attitudes, decision making, operations**
- **Sociotechnical design**
  - **Addresses human and organizational issues**
    - Separate sets of technical and social design solutions
    - Final design is solution that best meets both technical and social objectives

Managing Project Risk

- **Project management software**
  - **Can automate many aspects of project management**
  - **Capabilities for:**
    - Defining, ordering, editing tasks
    - Assigning resources to tasks
    - Tracking progress
  - **Microsoft Project 2010**
    - Most widely used project management software
    - PERT, Gantt charts, critical path analysis
  - **Increase in SaaS, open-source software**
  - **Project portfolio management software**

- **Thankyou**