



## Chapter 14

# Managing Projects

### VIDEO

*Video Case 1: Blue Cross Blue Shield: Smarter Computing Project*

*Video Case 2: NASA Project Management Challenges*

*Instructional Video 1: Software Project Management in 15 Minutes, Part 1*

*Instructional Video 1: Software Project Management in 15 Minutes, Part 2*



# Management Information Systems

## Chapter 14: Managing Projects

### Learning Objectives

- Describe the objectives of project management and why it is so essential in developing information systems.
- Describe methods used for selecting and evaluating information systems projects and aligning them with the firm's business goals.
- Explain how firms assess the business value of information systems projects.
- Describe the principal risk factors in information systems projects.
- Describe strategies that are useful for managing project risk and system implementation.



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## Chapter 14: Managing Projects

### Nu Skin's New Human Resources System Project Puts People First

- **Problem:** Need to implement enterprise-wide HR system with new and automated business processes
- **Solutions:**
  - SAP ERP Human Capital Management
  - Planning and implementation managed by cross-functional project team representing different business and user interests
- Illustrates need for organizational and project management to ensure success of new technology



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## Chapter 14: Managing Projects

### The Importance of Project Management

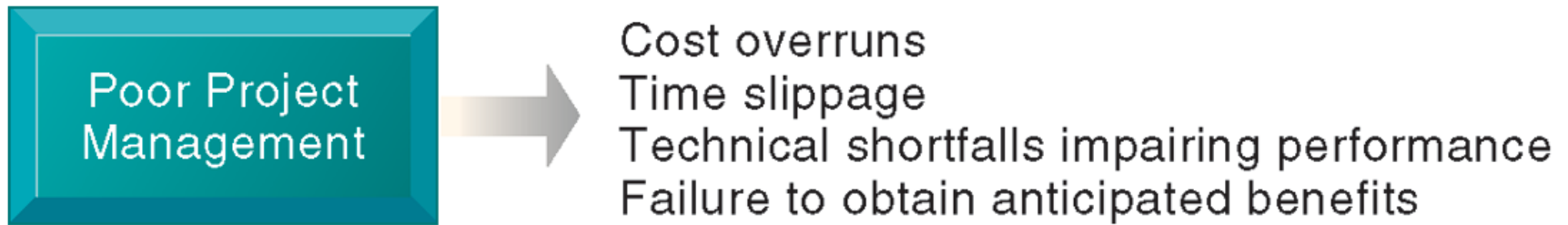
- **Runaway projects and system failure**
- **Runaway projects: 30%–40% IT projects**
  - Exceed schedule, budget
  - Fail to perform as specified
- **Types of system failure**
  - Fail to capture essential business requirements
  - Fail to provide organizational benefits
  - Complicated, poorly organized user interface
  - Inaccurate or inconsistent data



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### *CONSEQUENCES OF POOR PROJECT MANAGEMENT*



**FIGURE 14-1** Without proper management, a systems development project takes longer to complete and most often exceeds the allocated budget. The resulting information system most likely is technically inferior and may not be able to demonstrate any benefits to the organization.



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## Chapter 14: Managing Projects

### *Interactive Session: Management*

## **Austin Energy's Billing System Can't Light Up**

*Read the Interactive Session and discuss the following questions*

- Is the Austin Energy project a failure? Explain your answer.
- Describe the business impact of the faltering Austin Energy project.
- To what degree was IBM responsible for the problems countered by the Austin Energy billing project? Was Austin Energy at fault for the problems?
- What were the specific organizational or technical factors as well as management factors involved in this project failure?
- Describe the steps Austin Energy and IBM should have taken to better manage this project.





### The Importance of Project Management

- **Project management**
  - Activities include planning work, assessing risk, estimating resources required, organizing the work, assigning tasks, controlling project execution, reporting progress, analyzing results
  - Five major variables
    1. Scope
    2. Time
    3. Cost
    4. Quality
    5. Risk



### Selecting Projects

- **Management structure for information systems projects**
  - **Hierarchy in large firms**
    - Corporate strategic planning group
      - Responsible for firm's strategic plan
    - Information systems steering committee
      - Reviews and approves plans for systems in all divisions
    - Project management group
      - Responsible for overseeing specific projects
    - Project team
      - Responsible for individual systems project





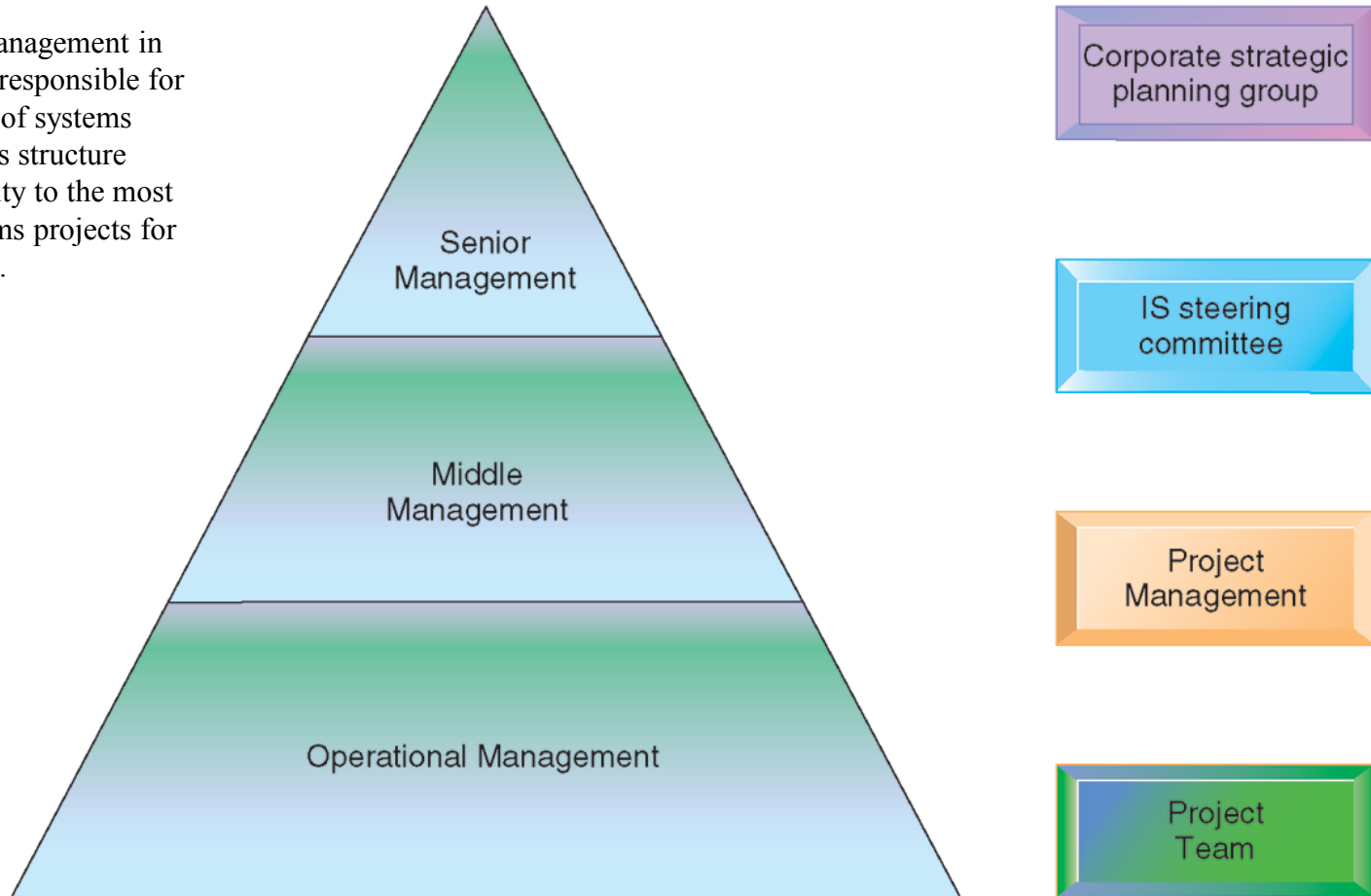
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## Chapter 14: Managing Projects

### ***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.

**FIGURE 14-2**





### Selecting Projects

- **Information systems plan:**
  - Identifies systems projects that will deliver most business value, links development to business plan
  - Road map indicating direction of systems development, includes:
    - Purpose of plan
    - Strategic business plan rationale
    - Current systems/situation
    - New developments
    - Management strategy
    - Implementation plan
    - Budget



### Selecting Projects

- **For effective plan**
  - **Inventory and document**
    - Existing systems and components
    - Decision-making improvements
    - Metrics established for quantifying values
  - **Clear understanding of long-term and short-term information requirements**
- **Key performance indicators (KPIs)**
  - **Strategic analysis identifies small number of KPIs, determined by managers**
    - Production costs, labor costs, and so on



### Selecting Projects

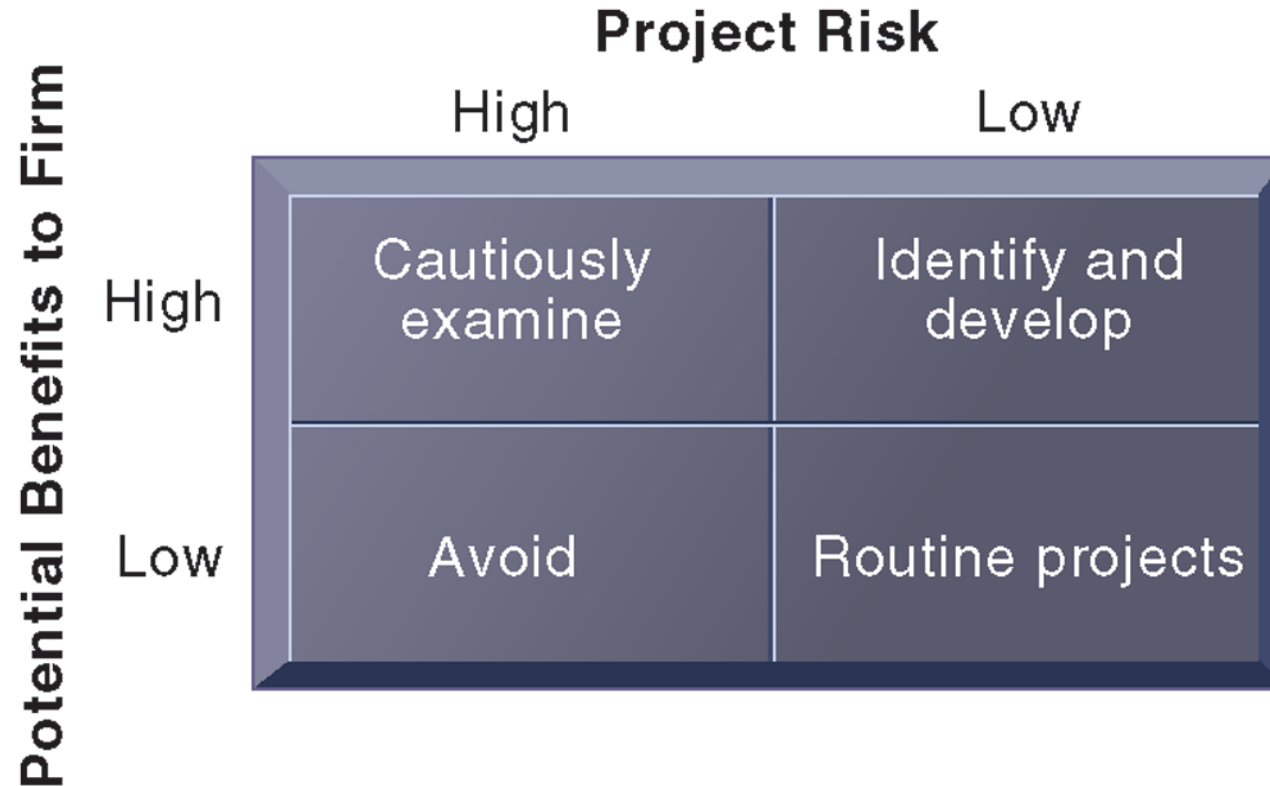
- **Portfolio analysis**
  - Used to evaluate alternative system projects
  - Inventories all of the organization's information systems projects and assets
  - Each system has profile of risk and benefit
    - High benefit, low risk
    - High benefit, high risk
    - Low benefit, low risk
    - Low benefit, high risk
  - To improve return on portfolio, balance risk and return from systems investments



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## Chapter 14: Managing Projects

### *A SYSTEM PORTFOLIO*



**FIGURE 14-3** Companies should examine their portfolio of projects in terms of potential benefits and likely risks. Certain kinds of projects should be avoided altogether and others developed rapidly. There is no ideal mix. Companies in different industries have different profiles..



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## Chapter 14: Managing Projects

### Selecting Projects

- **Scoring models**

- Used to evaluate alternative system projects, especially when many criteria exist
- Assigns weights to various features of system and calculates weighted totals

CRITERIA	WEIGHT	SYSTEM A %	SYSTEM A SCORE	SYSTEM B %	SYSTEM B SCORE
Online order entry	4	67	268	73	292
Customer credit check	3	66	198	59	177
Inventory check	4	72	288	81	324
Warehouse receiving	2	71	142	75	150
ETC					
GRAND TOTALS			3128		3300





### 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



# Management Information Systems

## Chapter 14: Managing Projects

### Establishing the Business Value of Information 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)



# Management Information Systems

## Chapter 14: Managing Projects

### Establishing the Business Value of Information Systems

- **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



### Managing Project Risk

- **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



# Management Information Systems

## Chapter 14: Managing Projects

### 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



### Managing Project Risk

- **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



### Managing Project Risk

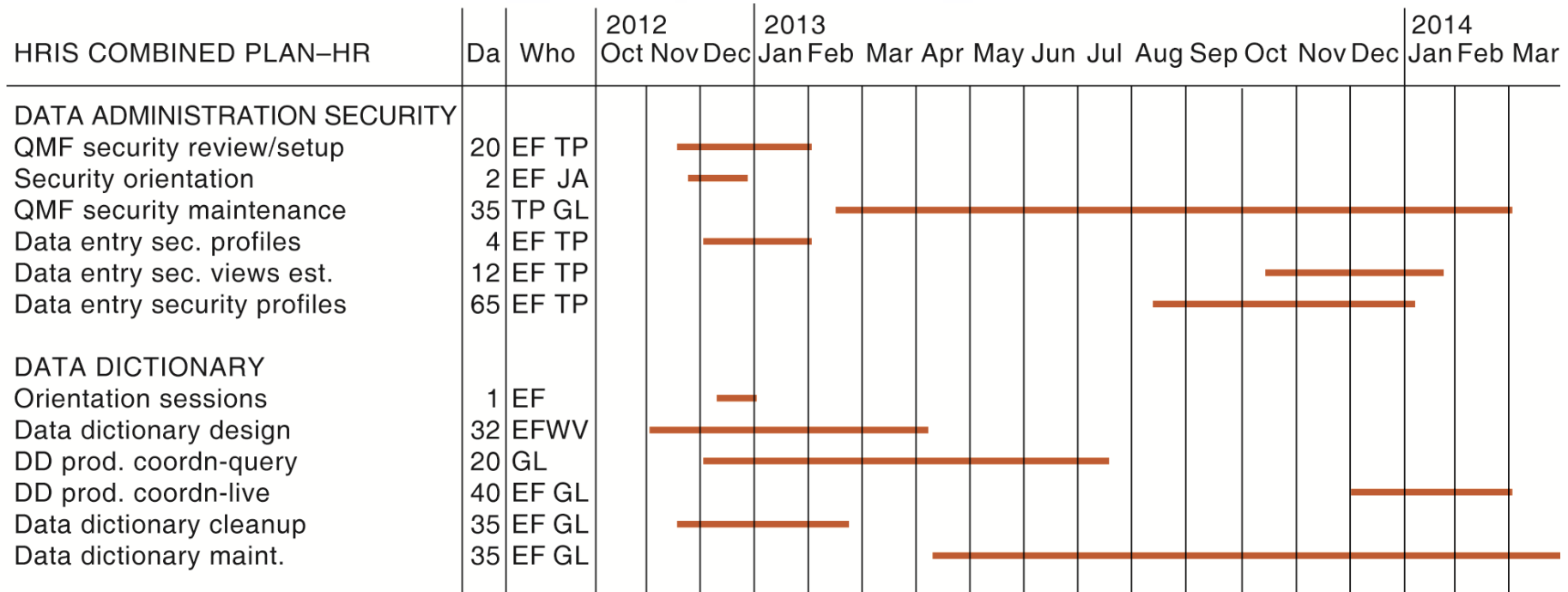
- **Formal planning and control tools**
  - Used for documenting and monitoring project plans
  - Help identify bottlenecks and impact of problems
  - **Gantt charts**
    - Visual representation of timing and duration of tasks
    - Human resource requirements of tasks
  - **PERT (program evaluation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



# Management Information Systems

## Chapter 14: Managing Projects

### 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.



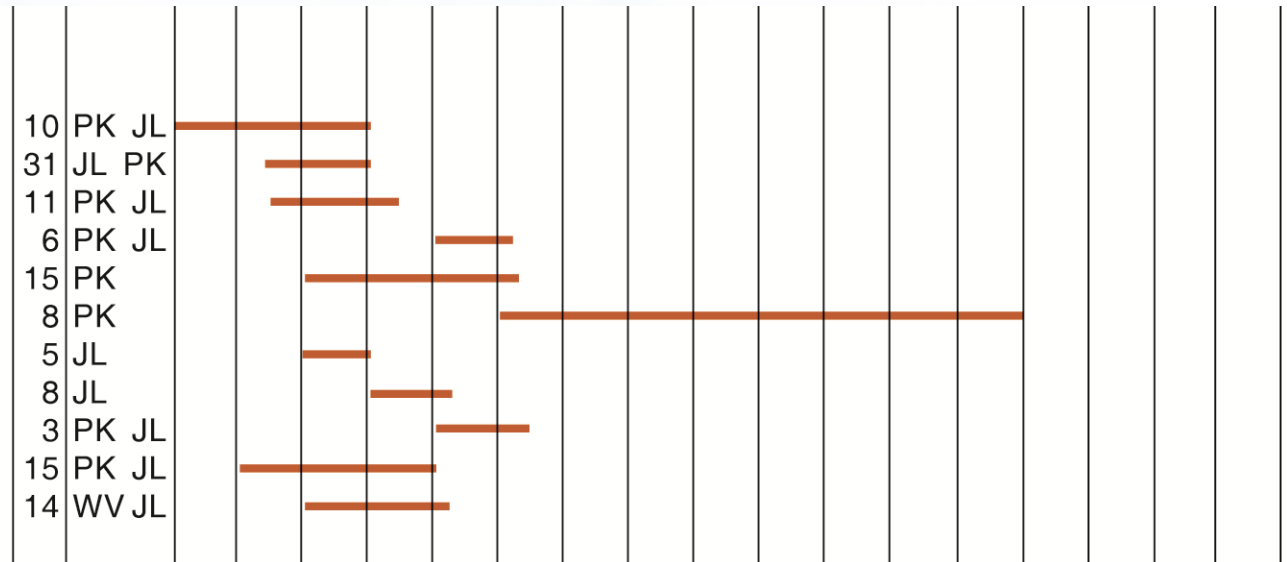


# Management Information Systems

## Chapter 14: Managing Projects

### ***A GANTT CHART***

PROCEDURES REVISION  
DESIGN PREP  
Work flows (old)  
Payroll data flows  
HRIS P/R model  
P/R interface orient. mtg.  
P/R interface coordn. 1  
P/R interface coordn. 2  
Benefits interfaces (old)  
Benefits interfaces (new flow)  
Benefits communication strategy  
New work flow model  
Posn. data entry flows



**FIGURE 14-4B**



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## Chapter 14: Managing Projects

### 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

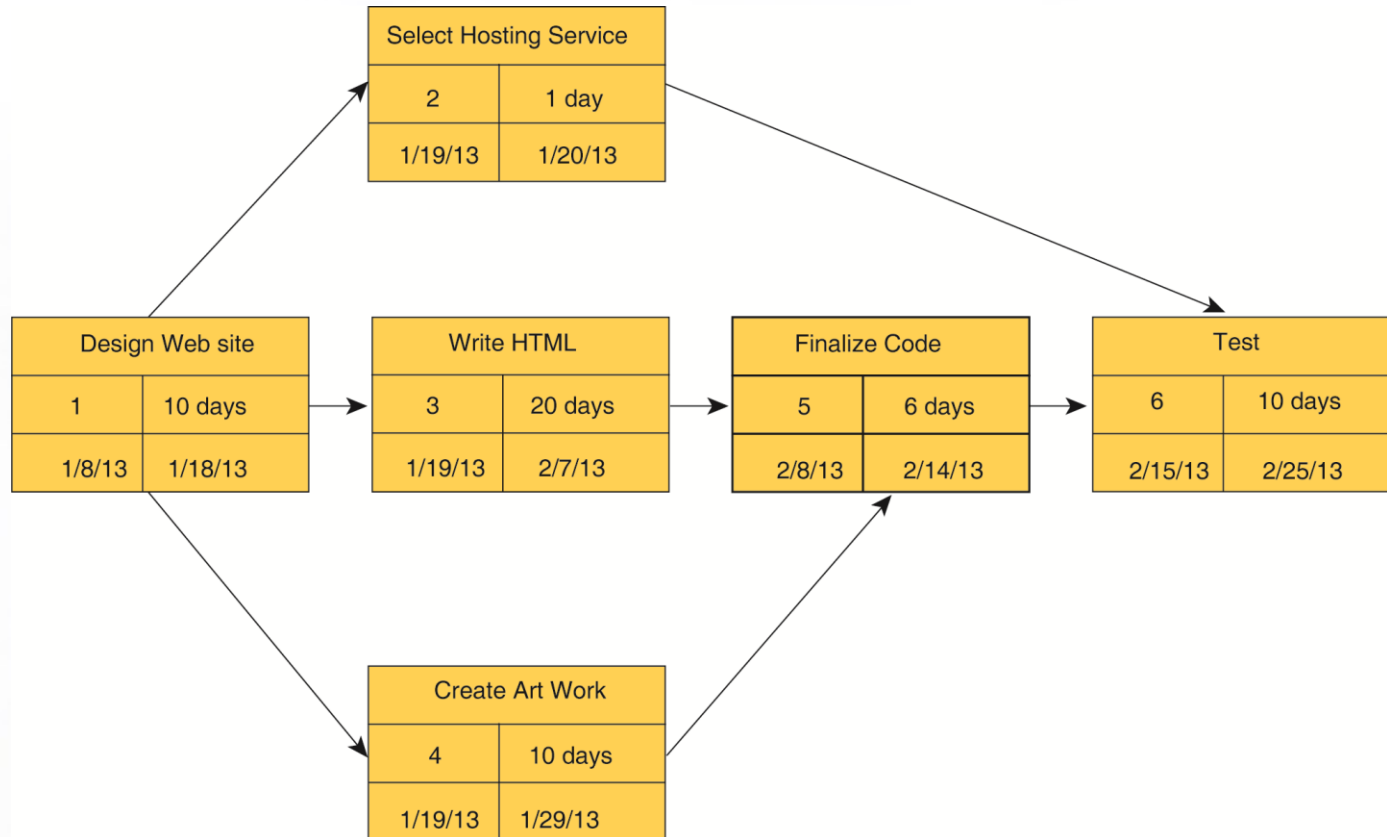
FIGURE 14-4C



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## Chapter 14: Managing Projects

### *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



### Managing Project Risk

- **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



# Management Information Systems

## Chapter 14: Managing Projects

### *Interactive Session: Organizations*

#### **Westinghouse Electric Takes On the Risks of a “Big Bang” Project**

*Read the Interactive Session and discuss the following questions*

- Identify and discuss the risks in Westinghouse Electric's Cornerstone project.
- Why was change management so important for this project and this company?
- What management, organization, and technology issues had to be addressed by the Westinghouse project team?
- Should other companies use a “big-bang” implementation strategy? Why or why not?





### 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**



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## Chapter 14: Managing Projects



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