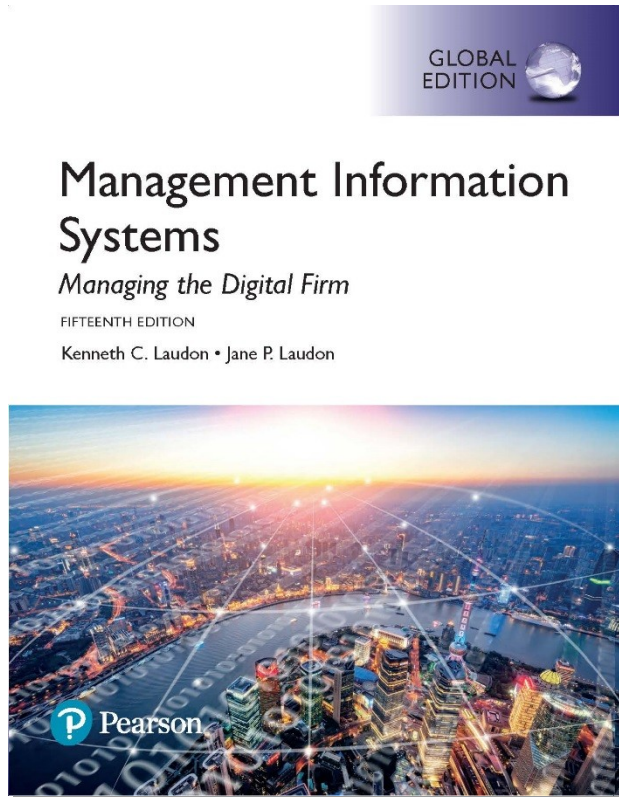


# Management Information Systems: Managing the Digital Firm

Fifteenth edition



## Chapter 14 Managing Projects

# Learning Objectives

- **14-1** What are the objectives of project management, and why is it so essential in developing information systems?
- **14-2** What methods can be used for selecting and evaluating information systems projects and aligning them with the firm's business goals?
- **14-3** How can firms assess the business value of information systems?
- **14-4** What are the principal risk factors in information systems projects, and how can they be managed?

# Video Cases

- Case 1: Blue Cross Blue Shield: Smarter Computing Project
- Case 2: NASA Project Management Challenges

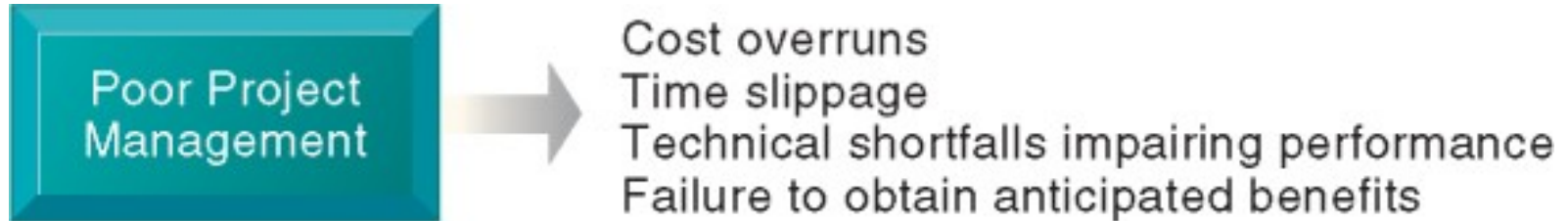
# Intuit Counts on Project Management

- Problem
  - Fragmented data and systems
- Solutions
  - Hadoop, analytic tools
- Intuit implemented strong project management, breaking huge project into chunks, to create an enterprisewide data analytics resource, the Intuit Analytics Cloud
- Illustrates the influence of project management in implementing successful IT projects

# Runaway Projects and System Failure

- Runaway projects: 30–40 percent 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

# Figure 14.1: Consequences of Poor Project Management



# Project Management Objectives

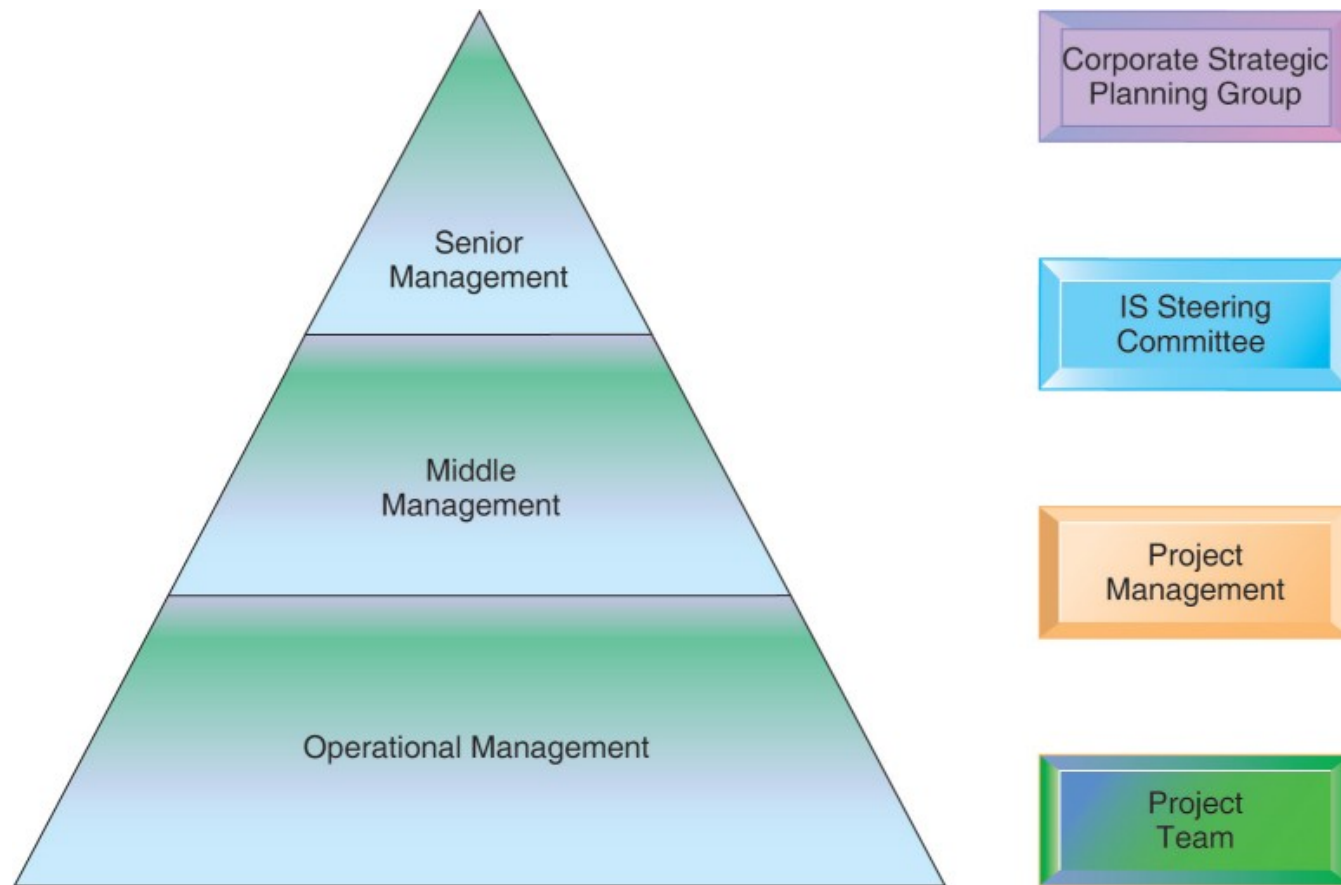
- Project management
  - Activities include planning work, assessing risk, estimating resources required, organizing the work, assigning tasks, controlling project execution, reporting progress, analyzing results
- Five major variables
  - Scope
  - Time
  - Cost
  - Quality
  - Risk

# Management Structure for Information Systems Projects

- 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



# Figure 14.2: Management Control of Systems Projects



# Information Systems Plan (1 of 2)

- 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

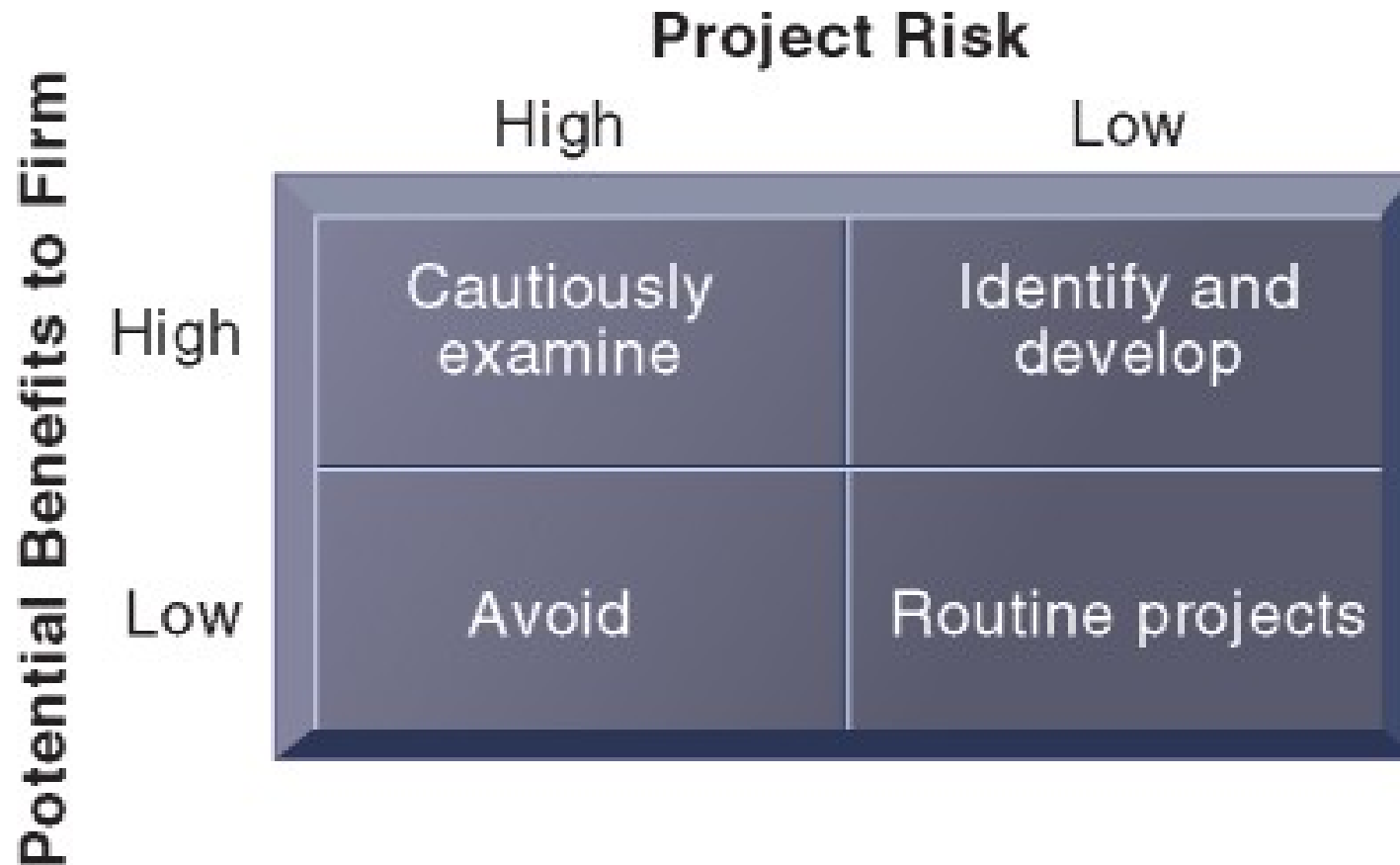
# Information Systems Plan (2 of 2)

- For effective plan
  - Document existing systems and infrastructure components
  - Identify decision-making improvements
  - Develop 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

# 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

# Figure 14.3: A System Portfolio



# Scoring Models

- Used to evaluate alternative system projects, especially when many criteria exist
- Assigns weights to various features of system and calculates weighted totals
- Many qualitative judgments involved
- Requires experts who understand the issues and the technology

# Table 14.2 Example of a Scoring Model for an ERP System

CRITERIA	WEIGHT	ERP SYSTEM A %	ERP SYSTEM A SCORE	ERP SYSTEM B %	ERP SYSTEM B SCORE
1.1 Online order entry	4	67	268	73	292
1.2 Online pricing	4	81	324	87	348
1.3 Inventory check	4	72	288	81	324
1.4 Customer credit check	3	66	198	59	177
1.5 Invoicing	4	73	292	82	328
2.1 Production forecasting	3	72	216	76	228
2.2 Production planning	4	79	316	81	324
(etc.)	(etc.)	(etc.)	(etc.)	(etc.)	(etc.)
GRAND TOTALS	-	-	3,128	-	3,300

# 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 long-term capital investment projects
  - Rely on measures of the firm's cash outflows and inflows
- Principle capital budgeting models used to evaluate IT projects
  - Payback method
  - Accounting rate of return on investment (ROI)
  - Net present value
  - Internal rate of return (IRR)
- Limitations of financial models

# Dimensions of Project Risk

- Project size
  - Cost
  - Time
  - Number of organizational units affected
  - Organizational complexity
- Project structure
  - Structured, defined requirements run lower risk
- Experience with technology
  - Team familiar with hardware and software

# Interactive Session: Management: Can the National Health Service Go Paperless?

- Class discussion

- Why is paperless NHS a risky project? Identify the key risk factors.
- What management, organization, and technology problems is the paperless NHS likely to encounter?
- What steps should be taken to make the paperless NHS more successful?

# Change Management and the Concept of Implementation (1 of 2)

- Change management
  - Required for successful system building
  - New information systems have powerful behavioral and organizational impact
- 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

# Change Management and the Concept of Implementation (2 of 2)

- 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
- Management support and commitment
  - Effects positive perception by both users and technical staff
  - Ensures sufficient funding and resources
  - Helps enforce required organizational changes

# User–designer communication gap

**TABLE 14.4 THE USER DESIGNER COMMUNICATIONS GAP**

USER CONCERNS	DESIGNER CONCERNS
Will the system deliver the information we need for our work?	What demands will this system put on our servers?
Can we access the data on our iPhones, BlackBerrys, tablets, and PCs?	What kind of programming demands will this place on our group?
What new procedures do we need to enter data into the system?	Where will the data be stored? What's the most efficient way to store them?
How will the operation of the system change employees' daily routines?	What technologies should we use to secure the data?

# Change Management Challenges for Business Process Reengineering, Enterprise Applications, and Mergers and Acquisitions

- Very high failure rate among enterprise application and BPR projects (up to 70 percent for BPR)
  - Poor implementation and change management practices
    - Employee 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

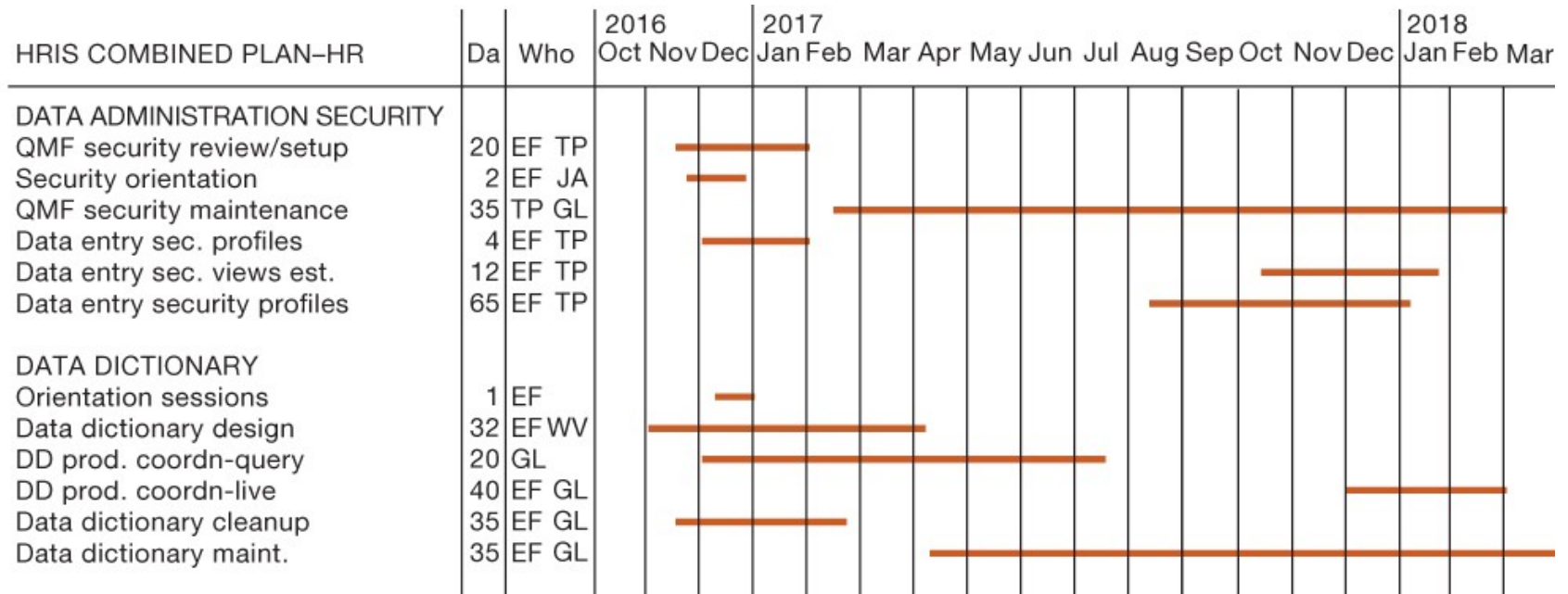
- First step in managing project risk involves identifying nature and level of risk of project.
- Each project can then be managed with tools and risk-management approaches geared to level of risk.
- Managing technical complexity
  - Internal integration tools
    - Project leaders with technical and 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 charts
  - Graphically depict tasks and interrelationships
  - Indicate sequence of tasks necessary

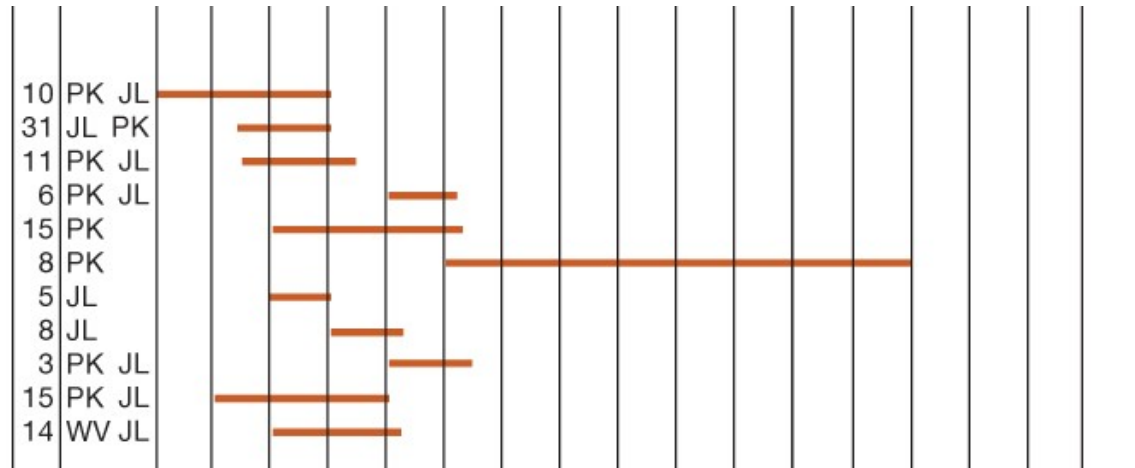
# Figure 14.4: A Gantt Chart (1 of 3)



# Figure 14.4: A Gantt Chart (2 of 3)

## PROCEDURES REVISION DESIGN PREP

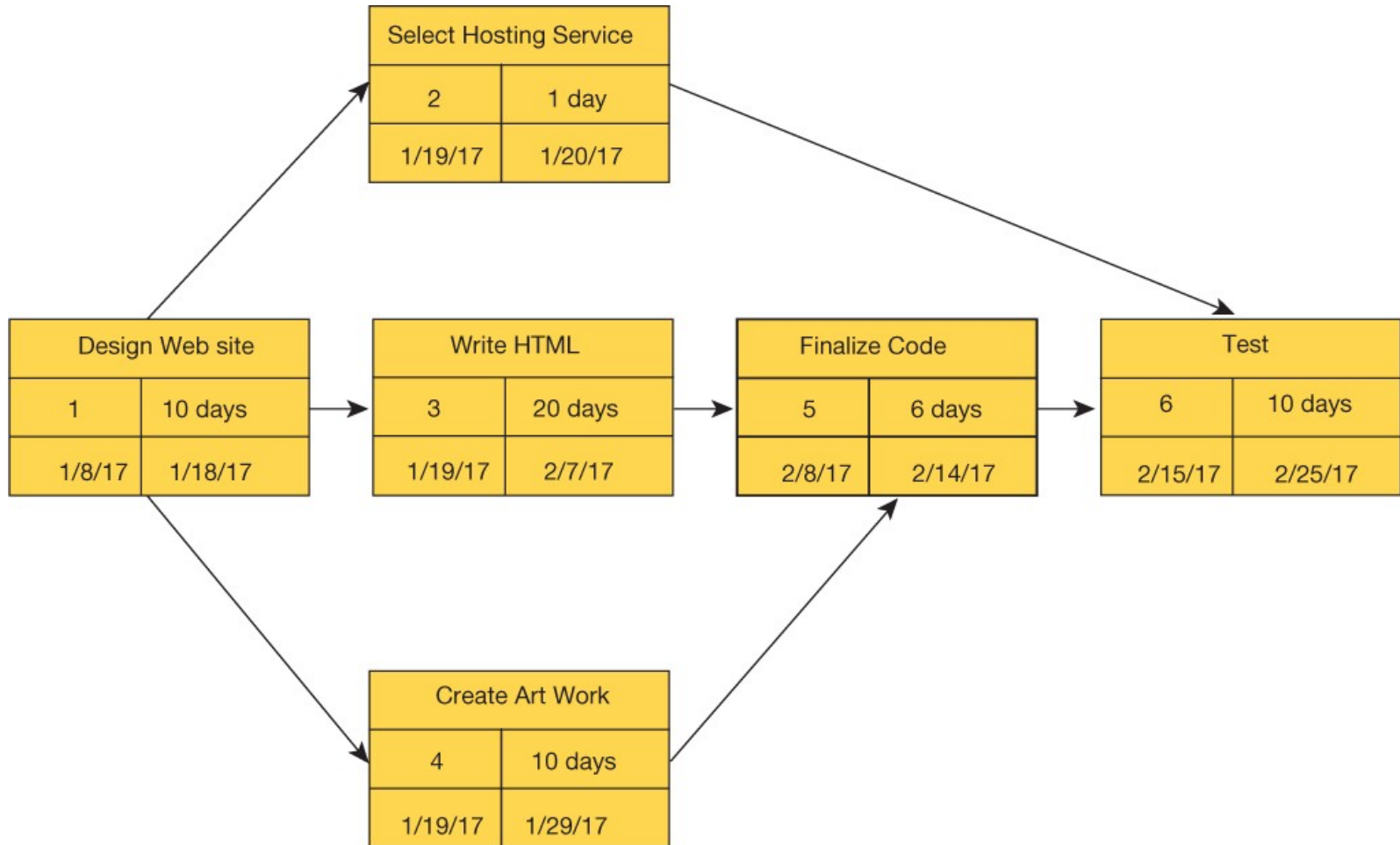
Work flows (old)  
Payroll data flows  
HRIS P/R model  
P/R interface orient. mtg.  
P/R interface coordn. 1  
P/R interface coordn. 2  
Benefits interfaces (old)  
Benefits interfaces (new flow)  
Benefits communication strategy  
New work flow model  
Posn. data entry flows



# Figure 14.4: A Gantt Chart (3 of 3)

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 14.5: A PERT Chart



# 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
  - Counterimplementation
- Strategies to overcome user resistance
  - User participation, 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

# Interactive Session: Organizations: Hilti AG: Putting Things Together with New Project Management Tools

- Class discussion
  - Why is paperless NHS a risky project? Identify the key risk factors.
  - What management, organization, and technology problems is the paperless NHS likely to encounter?
  - What steps should be taken to make the paperless NHS more successful?

# Designing for the Organization

- Need to address ways in which organization changes with new system
- Ergonomics
  - Interaction of people and machines in work environment
- Organizational impact analysis
  - How system will affect organizational structure, attitudes, decision making, operations
- Sociotechnical design
  - Addresses human and organizational issues



# Project Management Software Tools

- Can automate many aspects of project management
- Capabilities for defining, ordering tasks
  - Assigning resources to tasks, tracking progress
  - Manage very large numbers of tasks and relationships
- Microsoft Project
- Cloud-based software
- Project portfolio management software

**TABLE 14.5 ORGANIZATIONAL FACTORS IN SYSTEMS PLANNING AND IMPLEMENTATION**

Employee participation and involvement

Job design

Standards and performance monitoring

Ergonomics (including equipment, user interfaces, and the work environment)

Employee grievance resolution procedures

Health and safety

Government regulatory compliance