Managing the Information Systems Project

Learning Objectives

- ✓ Discuss skills required to be an effective project manager
- ✓ Describe skills and activities of a project manager during project initiation, planning, execution and closedown
- ✓ Discuss critical path scheduling
- ✓ Explain Gantt Charts and Network Diagrams

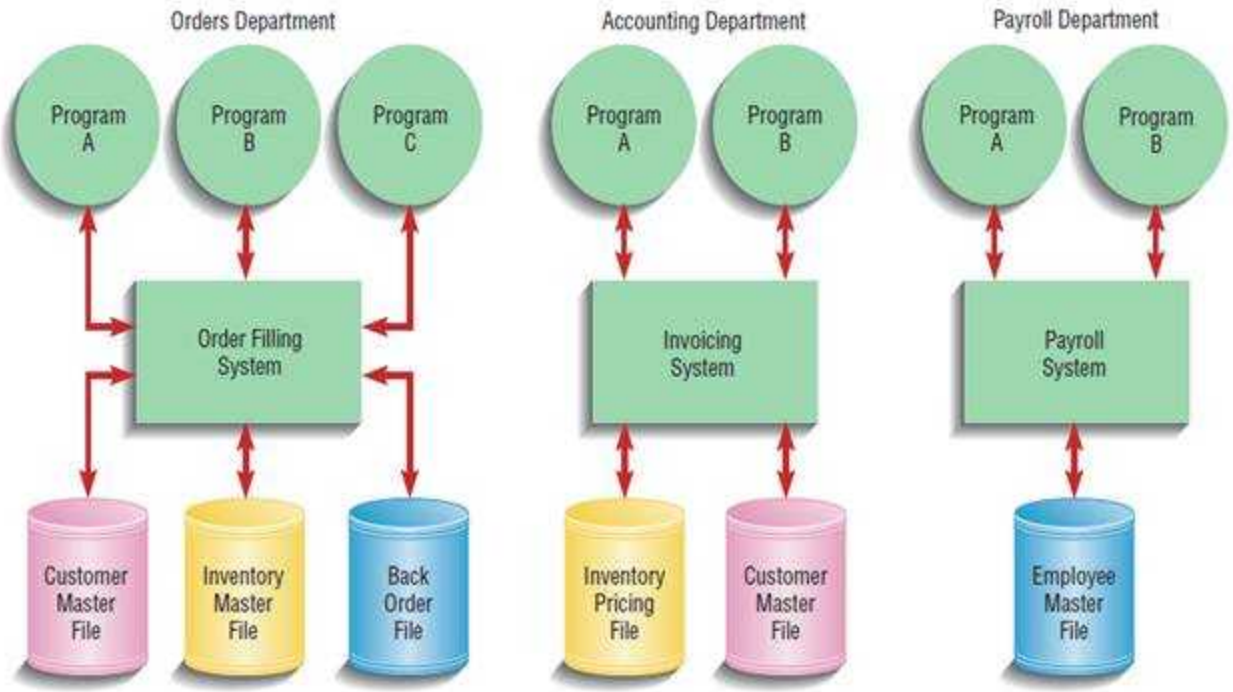
Pine Valley Furniture

- Manufacturing Company
  - Product: Wood Furniture
  - Market: United States
  - Organized into functional areas:
    - Manufacturing, Sales, Orders, Accounting, Purchasing
  - Three independent computer systems were converted to a database in 1990s

Pine Valley Furniture

FIGURE 3-2
Three computer applications at Pine Valley Furniture: order filling, invoicing, and payroll.

Source: Hoffer, Ramesh, and Topi, 2011.



Managing the Information Systems Project

- Focus of Project Management
  - To assure that information system projects meet customer expectations
    - Delivered in a timely manner
    - Meet constraints and requirements
- PM's Motto:
  - High quality deliverables, on time, on budget

Management 101

The four fundamental activities of management:

- Planning
- Organizing
- Monitorng and Controlling
- Leading (influencing)

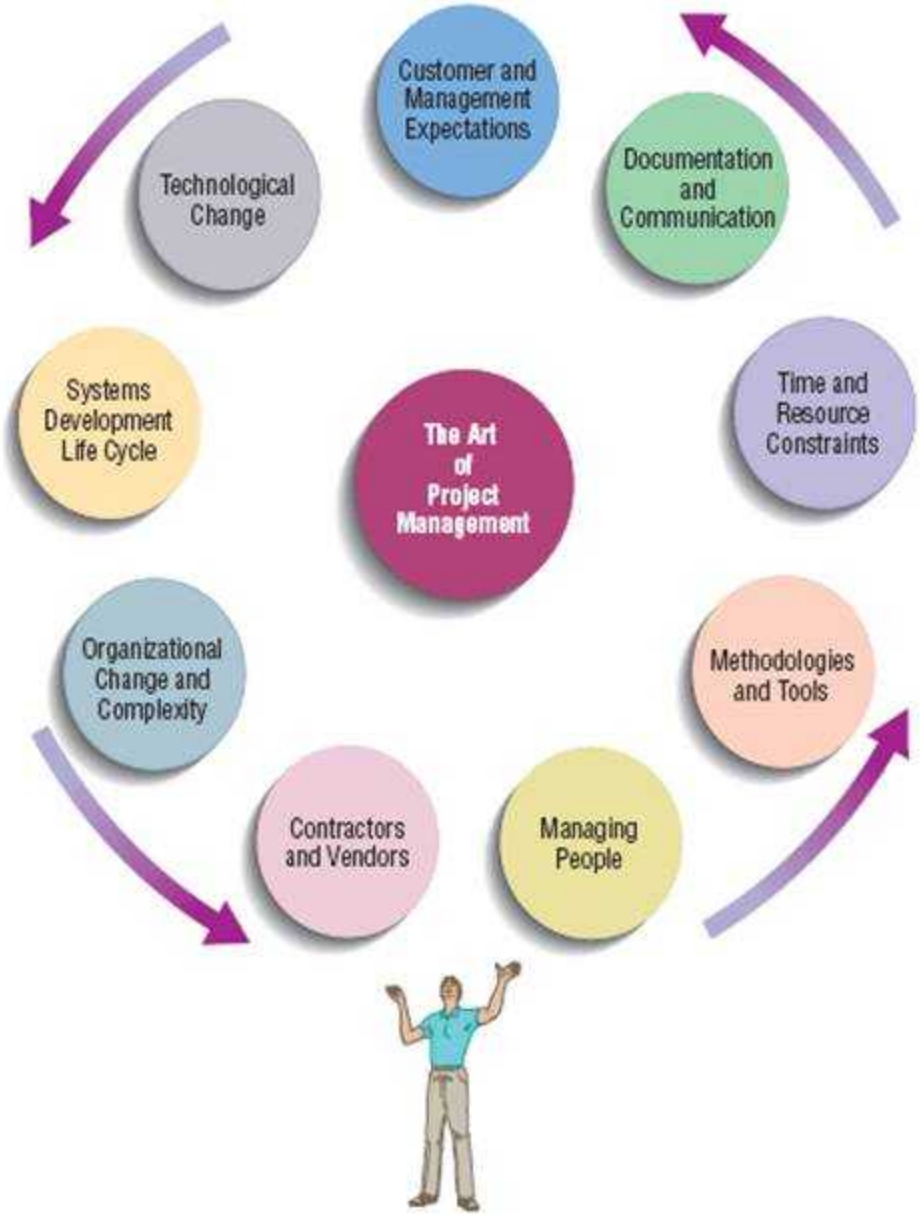
Project Manager

A system analyst with a diverse set of skills:- management, leadership, technical, conflict management, and customer relationship- who is responsible for initiating, planning, executing and closing down a project.

Managing the Information Systems Project

- Project Manager
  - Requires diverse set of skills
    - Planning
    - Organizing
    - Monitor and Control
    - Leadership
    - Customer relations
    - Technical problem solving
    - Conflict management
    - Communications
    - Risk management
    - Change management

FIGURE 3-5
A project manager juggles numerous activities.



Project Management Process

- Project
  - Planned undertaking of related activities to reach an objective that has a start and an end
- Launched by a System Services Request
- **Four Phases**
  - **Initiating**
  - **Planning**
  - **Executing**
  - **Closing down**

Initiating the Project

- During **Project Initiation**, the project manager performs several activities to assess the size, scope and complexity of the project and to accomplish procedures to support later project activities.

Initiating the Project

1. Establish the project initiation team- **This activity involves organizing an initial core of project team members to assist in accomplishing the project activities.**
2. Establish a relationship with the customer- **A thorough understanding of your customers builds stronger partnerships and higher levels of trust.**
3. Establish the project initiation plan-**Translate the business requirements into a written request for an improved information system. This requires collection, analysis, organization and transformation of a lot of information. This step lead to the creation of SSR form. See example p. 48**
4. Establish management procedures-**Establishing procedures such as developing team communication, job assignments and roles, project change procedures and determining how project funding and billing will be handled .**

Initiating the Project

5. Establish the project management environment and workbook- **The focus of this activity is to collect and organize the tools that you will use while managing the project and to construct the project workbook. Diagrams, charts and system descriptions provide much of the project workbook contents. The project workbook can be stored as an online electronic document or in a large hard copy binder. Project workbook is used by all team members and is useful for project audits, orientation of new team members, communication with management and customers, identifying future projects and performing post project reviews.** **See example p. 53**

6. Develop the project charter- **The project charter (Prepared for the customer) is a short (usually one page) high-level document prepared for the customer that describes what the project will deliver and outlines many of the key elements of the project.**

Project Charter contains:

- Project title
- Date of authorization
- Customer name and contact info
- Project start and end dates
- Project description and objectives
- Key assumptions or approach
- Stakeholders, roles, responsibilities
- Signatures

See example p.54

Planning the Project

- **Project Planning** involves defining clear, discrete activities and work needed to complete each activity within a single project. It often requires you to make numerous assumptions about the availability of resources such as hardware, software and personnel.

Planning the Project

1. Describe project scope, alternatives and feasibility
   - Scope and Feasibility
     - Understand the project
     - What problem is to be addressed
     - What results are to be achieved
     - Measures of success, Completion criteria
     - Alternatives / Feasibility analysis
2. Divide the project into manageable tasks
   - Work breakdown structure
   - Gantt chart

Planning the Project

3. Estimate resources (person days/costs) and create a resource plan
4. Develop a preliminary schedule
   - Utilize Gantt Charts and Network Diagrams
5. Develop a communication plan
   - It includes when and how written and oral reports will be provided by the team, how team members will coordinate work etc….
   - Outline communication processes among customers, team members and management
   - Define types of reports and their distribution

Planning the Project

6. Determine project standards and procedures
   - Specify how deliverables are to be tested and produced , the team must decide on which tools to use.
7. Identify and assess risk
   - Identify sources of risk (new technology, users' resistance to change, changes in business policies etc…)
   - Estimate probability / impact of risk
8. Create a preliminary budget (Planned expenses and revenues)

Planning the Project

9. Develop a project scope statement
   - Describe what the project will deliver. Useful to make sure that you, the customer, the other project team members have a clear understanding of the intended project size, duration and outcomes.
10. Set a baseline project plan
   - Baseline project plan provides an estimate of project's tasks and resource requirements and is used to guide the next phase- **execution** .

Executing the Project

- **Project Execution** puts the Baseline Project Plan into action. Within the context of the SDLC, project execution occurs primarily during the **analysis, design and implementation phase.**

Executing the Project

1. Execute baseline project plan
   - Acquire and assign resources
   - Train new team members
   - Keep project on schedule
2. Monitor project progress
   - Adjust resources, budget, and/or activities [if project gets ahead of (or behind) schedule, you may have to adjust resources, activities and budgets.]

Executing the Project

3. Manage changes to baseline project plan
   - Slipped completion dates
   - Bungled activity that must be redone
   - Changes in personnel
   - New activities
   - Unforeseen change in personnel due to sickness, resignation or termination.
4. Maintain project workbook
   - Provides the documentation new team members require to assimilate project tasks quickly.
   - Primary source of information for producing all project reports.
5. Communicate project status **(answers to ad hoc information requested by stakeholders)**

Closing the Project

- **Closing** includes the formal acceptance of the project and the ending thereof. Administrative activities include the archiving of the files and documenting lessons learned.

Closing Down the Project

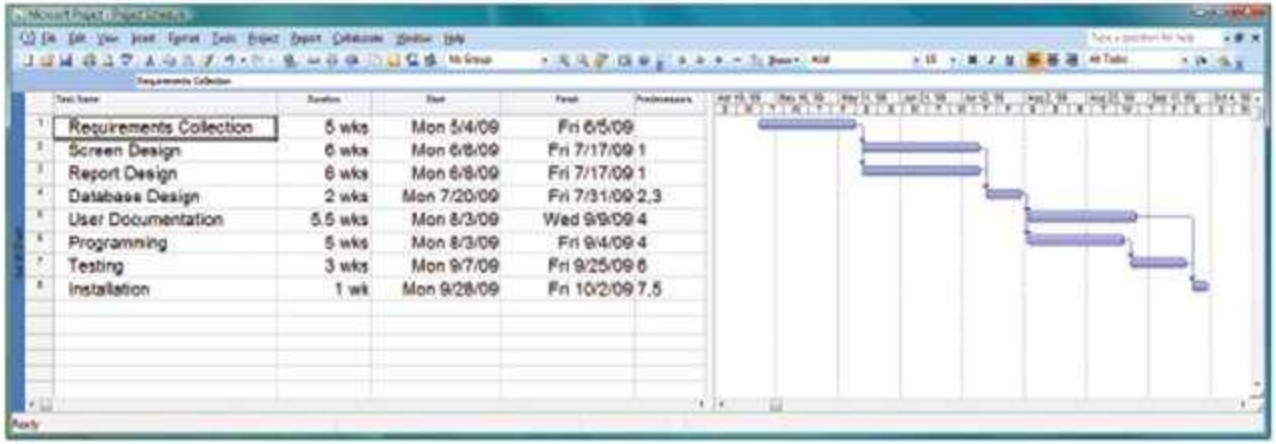
1. Termination [Closing Down the Project]
   - Types of termination:
     - Natural
       - Requirements have been met
     - Unnatural
       - Project stopped
   - Salary, career advice to team members, send Thank You Letter ☺

Closing Down the Project

2. Conduct post-project reviews
   - Determine strengths and weaknesses of Project deliverables
   - Development process [it is important that everyone understands what went right and what went wrong in order to improve the process for the next project.]
3. Close customer contract
   - The focus of this activity is to ensure that all contractual terms of the project have been met.

Representing and Scheduling Project Plans

- Gantt Charts
  - Useful for depicting simple projects or parts of large projects
  - Show start and completion dates for individual tasks on a calendar
- Network Diagrams
  - Show order of activities (dependencies)
  - But not on a calendar



	Task Name	Duration	Start	Finish	Predecessors
1	Requirements Collection	5 wks	Mon 5/4/09	Fri 6/5/09	
2	Screen Design	6 wks	Mon 6/8/09	Fri 7/17/09	1
3	Report Design	6 wks	Mon 6/8/09	Fri 7/17/09	1
4	Database Design	2 wks	Mon 7/20/09	Fri 7/31/09	2,3
5	User Documentation	5.5 wks	Mon 8/3/09	Wed 9/9/09	4
6	Programming	5 wks	Mon 8/3/09	Fri 9/4/09	4
7	Testing	3 wks	Mon 9/7/09	Fri 9/25/09	6
8	Installation	1 wk	Mon 9/28/09	Fri 10/2/09	7,5

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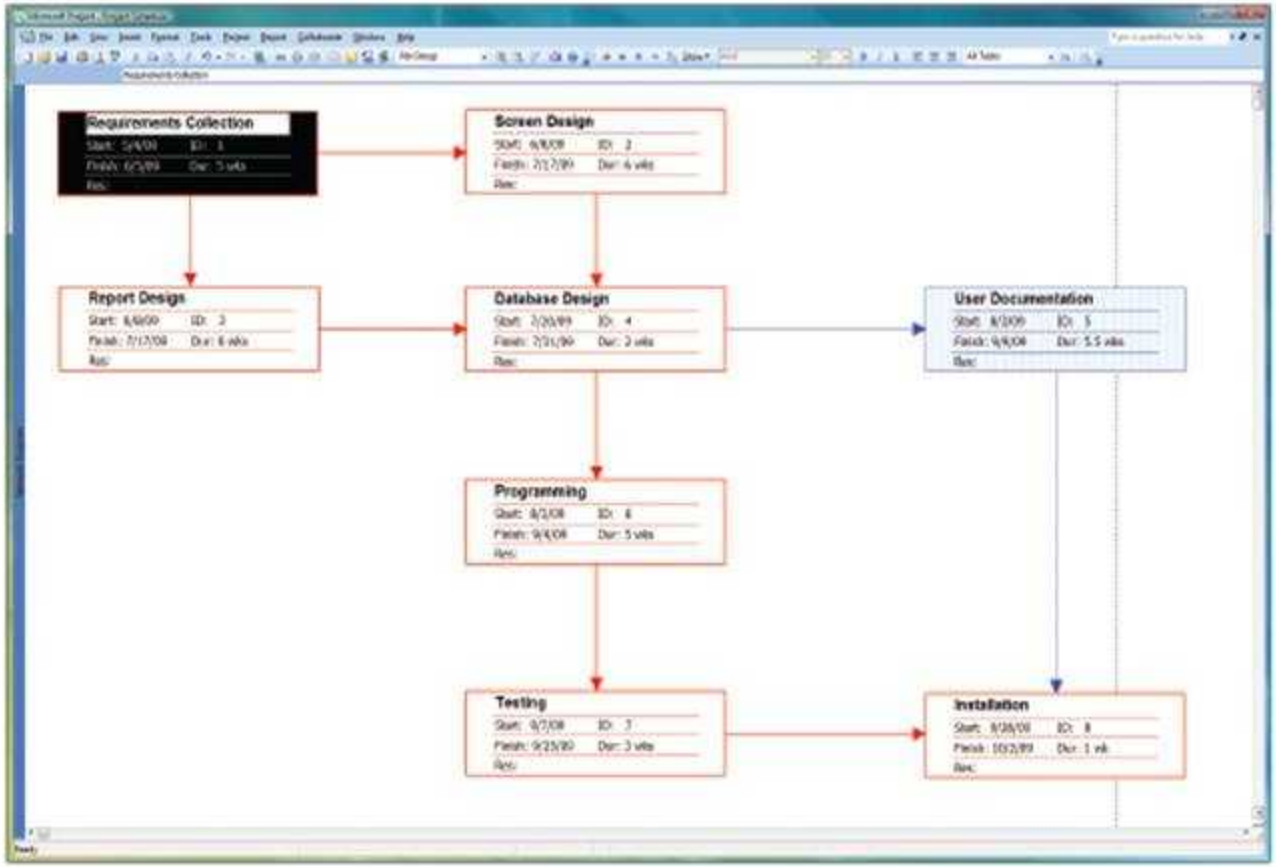

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FIGURE 3-20
Graphical Diagrams That Depict Project Plans
(A) A Gantt Chart
(B) A Network Diagram

Comparison of Gantt Charts and Network Diagrams

- Gantt Charts
  - Visually show duration of tasks; not dependencies
  - Visually show time overlap between tasks
  - Visually show slack time in schedule
- Network Diagrams
  - Visually show dependencies between tasks
  - Visually show which tasks can be done in parallel
  - Show slack time by data in rectangles

Representing Project Plans

- Network diagramming is a critical path scheduling technique
- Contains Program Evaluation and Review Technique (PERT) information
  - Time to complete estimate
- Used when tasks
  - Are well-defined with a clear start and end point
  - Can be worked on independently of other tasks
  - Are ordered
  - Serve the purpose of the project
- Major strength is ability to show how completion times vary for activities

Gantt Chart and Network Diagram for Pine Valley Furniture

- Steps
  1. Identify each activity
     - Requirements collection
     - Screen design
     - Report design
     - Database construction
     - User documentation creation
     - Software programming
     - Installation and testing

Gantt Chart and Network Diagram for Pine Valley Furniture (continued)

2. Determine time estimates and expected completion times for each activity

***o* = optimistic, *p* = pessimistic, *r* = realistic**

ACTIVITY	TIME ESTIMATE (in weeks) *o*	*r*	*p*	EXPECTED TIME (ET) $\frac{o + 4r + p}{6}$
1. Requirements Collection	1	5	9	5
2. Screen Design	5	6	7	6
3. Report Design	3	6	9	6
4. Database Design	1	2	3	2
5. User Documentation	3	6	7	5.67
6. Programming	4	5	6	5
7. Testing	1	3	5	3
8. Installation	1	1	1	1

FIGURE 3-23
Estimated Time Calculations for the SPTS Project

Gantt Chart and Network Diagram for Pine Valley Furniture (continued)

3. Determine sequence of activities

FIGURE 3-24
Sequence of Activities within the SPTS Project

ACTIVITY	PRECEDING ACTIVITY
1. Requirements Collection	—
2. Screen Design	1
3. Report Design	1
4. Database Design	2,3
5. User Documentation	4
6. Programming	4
7. Testing	6
8. Installation	5,7

Gantt Chart and Network Diagram for Pine Valley Furniture (continued)

4. Determine the critical path
   - Sequence of events that produces the shortest time to completion (final project delivery date)

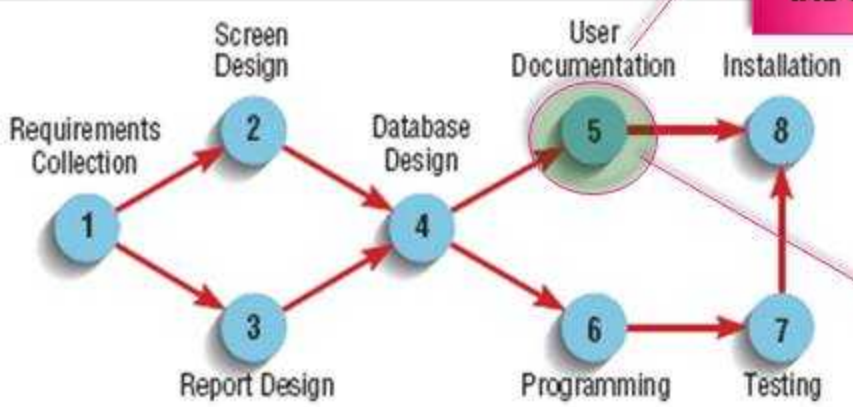
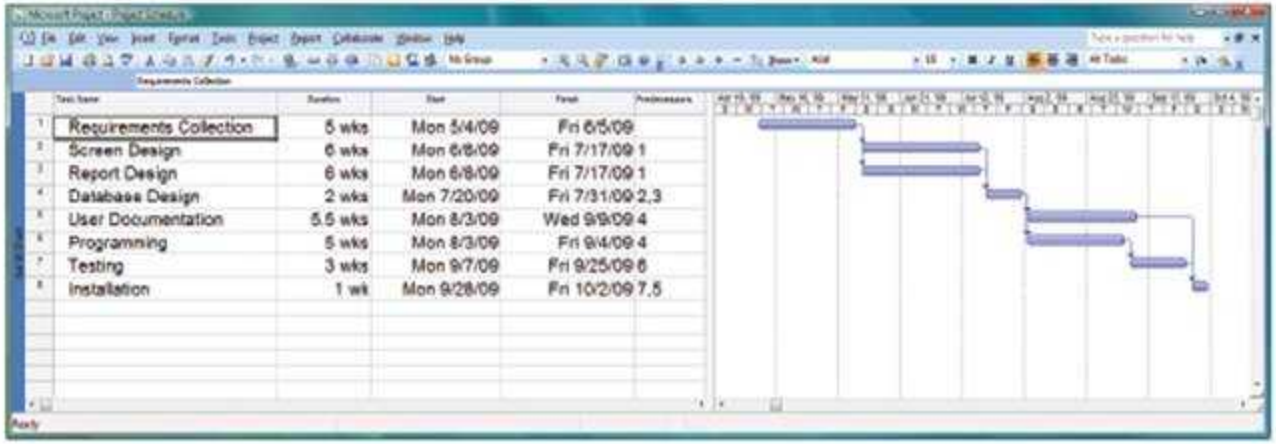


FIGURE 3-26
A Network Diagram That Illustrates the Activities (Circles) and the Sequence (Arrows) of Those Activities



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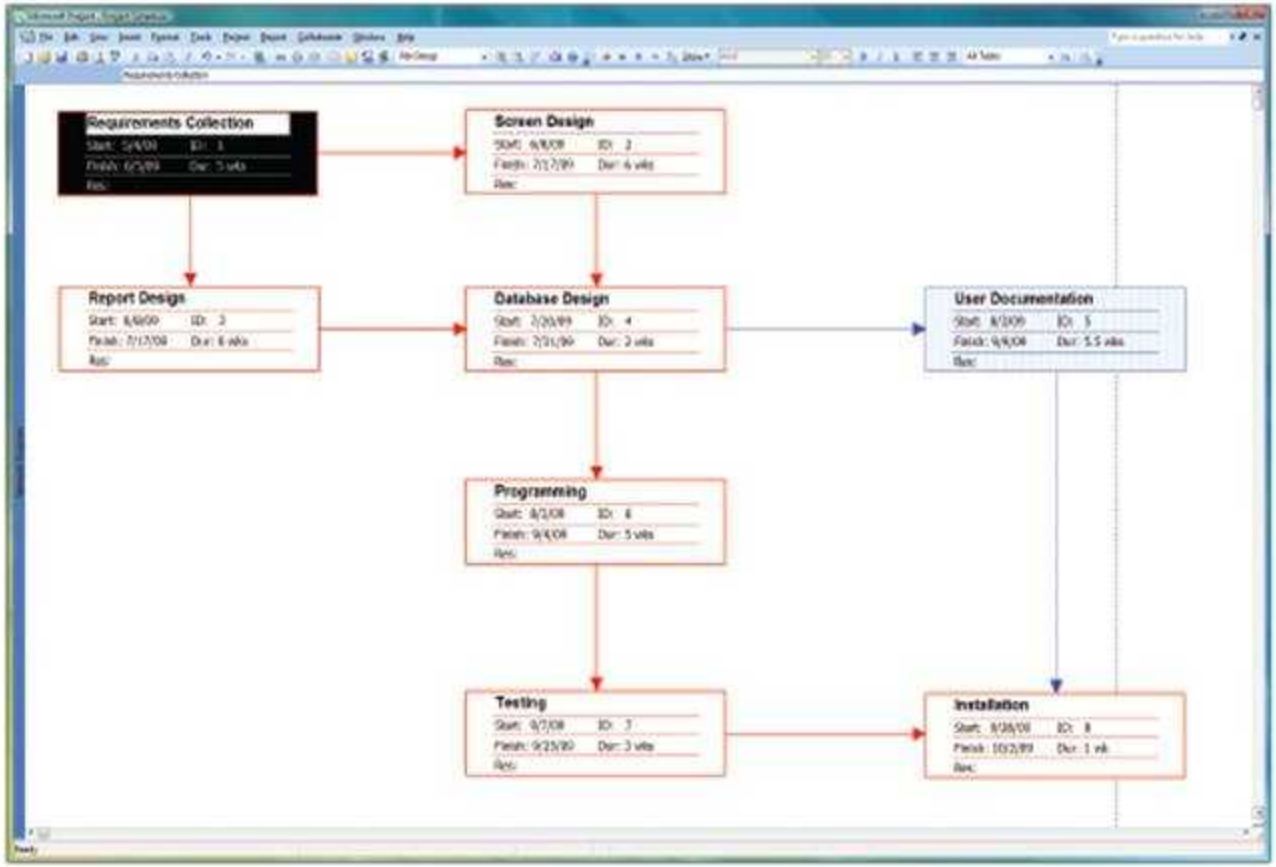

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FIGURE 3-20
Graphical Diagrams That Depict Project Plans
(A) A Gantt Chart
(B) A Network Diagram

Commercial Project Management Software

- Many systems are available
- Three activities are required:
  - Establish project start or end date
  - Enter tasks and assign task relationships
  - Select scheduling method to review project reports