Essentials of Systems Analysis and Design Sixth Edition

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Chapter 3
Managing the Information Systems Project

Learning Objectives

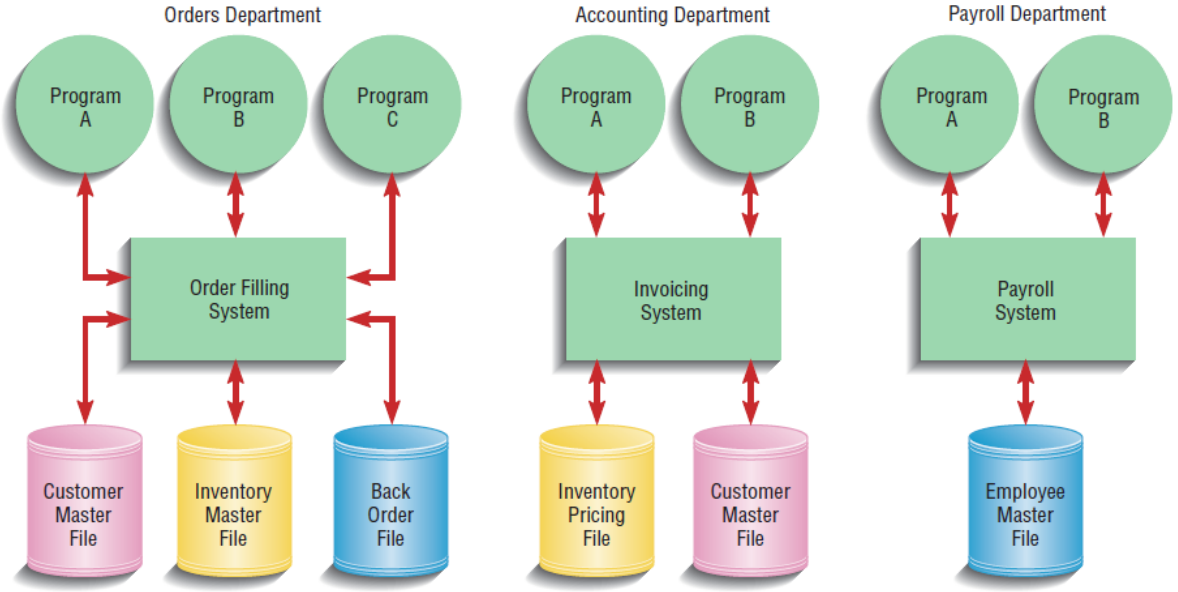
- ✓ Discuss skills required to be an **effective** project manager
- ✓ Describe **skills and activities** of a project manager during project **initiation**, **planning**, **execution** and **closedown**
- ✓ Discuss critical path **scheduling**
- ✓ Explain **Gantt** Charts and Network Diagrams
- ✓ Review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

Pine Valley Furniture

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

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**

Managing the Information Systems Project (continued)

- Project Manager
  - Systems **Analyst** responsible for
    - Project initiation
    - Initial Planning
    - Kick off and Execution
    - Closing down
  - Requires diverse set of skills
    - Management
    - Leadership
    - Technical
    - Conflict management
    - Customer relations

Project Management Process

- Project
  - Planned undertaking of related activities to reach an objective that has a beginning and an end
- Four Phases
  - Initiating
  - Planning
  - Executing
  - Closing down

Initiating the Project

1. Establish the project initiation team
2. Establish a relationship with the customer
3. Establish the project initiation plan
4. Establish management procedures
5. Establish the project management environment and workbook
6. Develop the project charter

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
2. Divide the project into manageable tasks
   - Work breakdown structure
   - Gantt chart

Planning the Project (continued)

3. Estimate resources and create a resource plan.
4. Develop a preliminary schedule
   - Utilize Gantt Charts and Network Diagrams
5. Develop a communication plan
   - Outline communication processes among customers, team members and management
   - Define types of reports and their distribution
   - Determine frequency of reports

TABLE 3-2: Project Team Communication Methods

Procedure	Formality	Use
Project workbook	High	Inform Permanent record
Meetings	Medium to high	Resolve issues
Seminars and workshops	Low to medium	Inform
Project newsletters	Medium to high	Inform
Status reports	High	Inform
Specification documents	High	Inform Permanent record
Minutes of meetings	High	Inform Permanent record
Bulletin boards	Low	Inform
Memos	Medium to high	Inform
Brown bag lunches	Low	Inform
Hallway discussions	Low	Inform Resolve issues

Planning the Project (continued)

6. Determine project standards and procedures
   - Specify how deliverables are tested and produced
7. Identify and assess risk
   - Identify sources of risk
   - Estimate consequences of risk
8. Create a preliminary budget

Planning the Project (continued)

9. Develop a project scope statement
   - Describe what the project will deliver
10. Set a baseline project plan
   - Estimate of project's tasks and resources

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

Executing the Project (continued)

3. Manage changes to baseline project plan
   - Slipped completion dates
   - Bungled activity that must be redone
   - Changes in personnel
   - New activities
4. Maintain project workbook
5. Communicate project status

Closing Down the Project

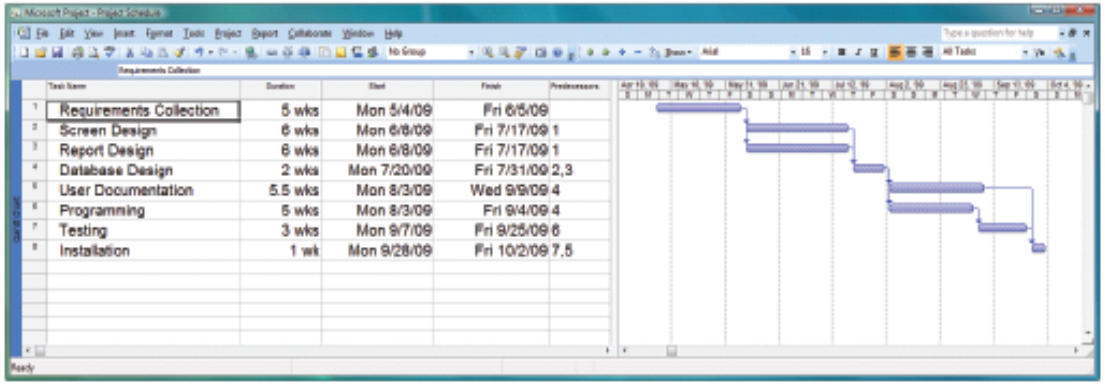
1. Termination
   - Types of termination:
     - Natural
       - Requirements have been met
     - Unnatural
       - Project stopped
   - Documentation
   - Personnel Appraisal

Closing Down the Project (continued)

2. Conduct post-project reviews
   - Determine strengths and weaknesses of
     - Project deliverables
     - Project management process
     - Development process
3. Close customer contract

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
- Network Diagrams
  - Show order of activities



	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

A

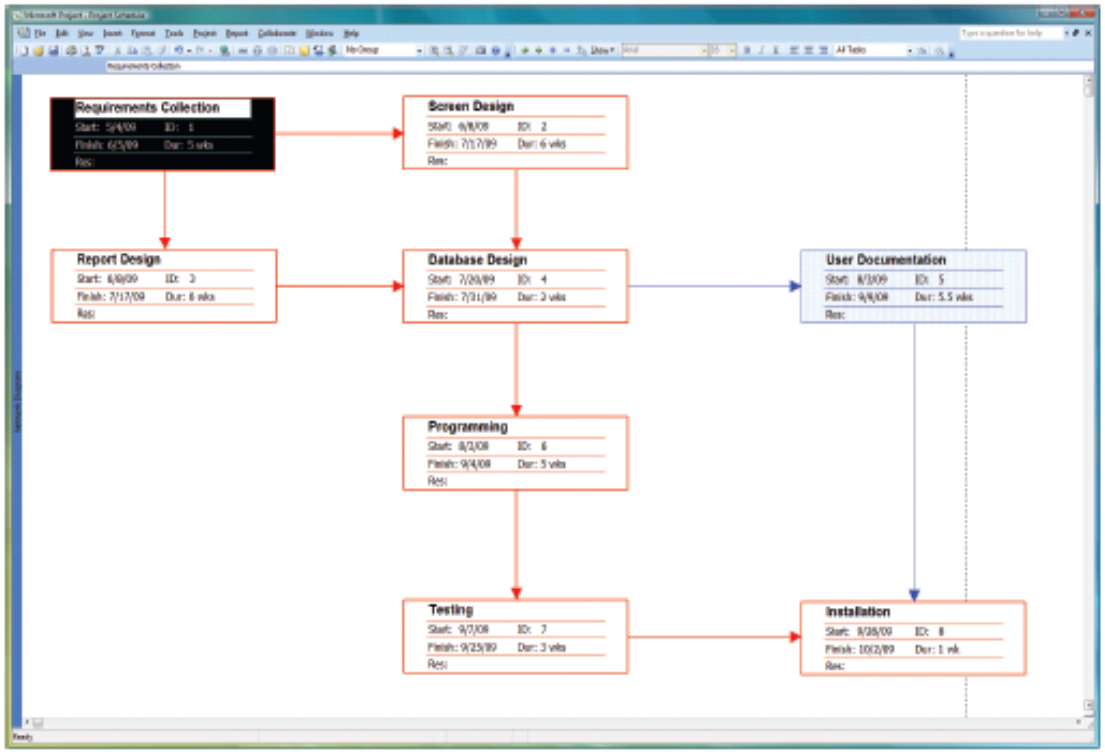


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FIGURE 3-20
Graphical Diagrams That Depict Project Plans
(A) A Gantt Chart
(B) A Network Diagram

Comparison of Gantt Charts and Network Diagrams

- Gantt Charts
  - Visually show duration of tasks
  - Visually show time overlap between tasks
  - Visually show slack time
- 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
- Used when tasks
  - Are well-defined and have a clear beginning 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 by activity

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
     - Testing, Migration, Installation

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

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

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

- o represents the optimistic time estimate: the shortest time in which the task can be completed, assuming everything proceeds better than is normally expected.

- r represents the Most Likely time estimate (Realistic time): the completion time having the highest probability. This is multiplied by 4 because it's considered the most probable outcome and thus has more weight in the calculation.

- p represents pessimistic time estimate: the longest time that a task may take to complete, assuming that everything goes wrong (but excluding major catastrophes).

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

3. Determine sequence of activities

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 will affect the final project delivery date

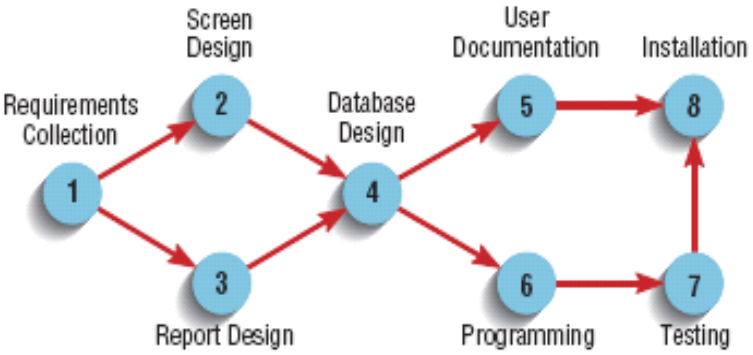

FIGURE 3-26
A Network Diagram That Illustrates the Activities (Circles) and the Sequence (Arrows) of Those Activities

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

Summary

- Skills of An Effective Project Manager
- Activities of Project Manager
  - Initiation
  - Planning
  - Execution
  - Close down
- Gantt Charts and Network Diagrams
- Commercial PM Software