



Systems Analysis and design - 2

Slide Adapted from:

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(**Modern Systems Analysis and Design**, 7th Edition, Pearson Prentice Hall)

Chapter 14

Maintaining Information Systems



Learning Objectives

- ✓ Explain and contrast four types of system maintenance.
- ✓ Describe several factors that influence the cost of maintaining an information system and apply these factors to the design of maintainable systems.
- ✓ Describe maintenance management issues, including alternative organizational structures, quality measurement, processes for handling change requests, and configuration management.
- ✓ Explain the role of CASE tools in maintaining information systems.

Maintaining Information Systems

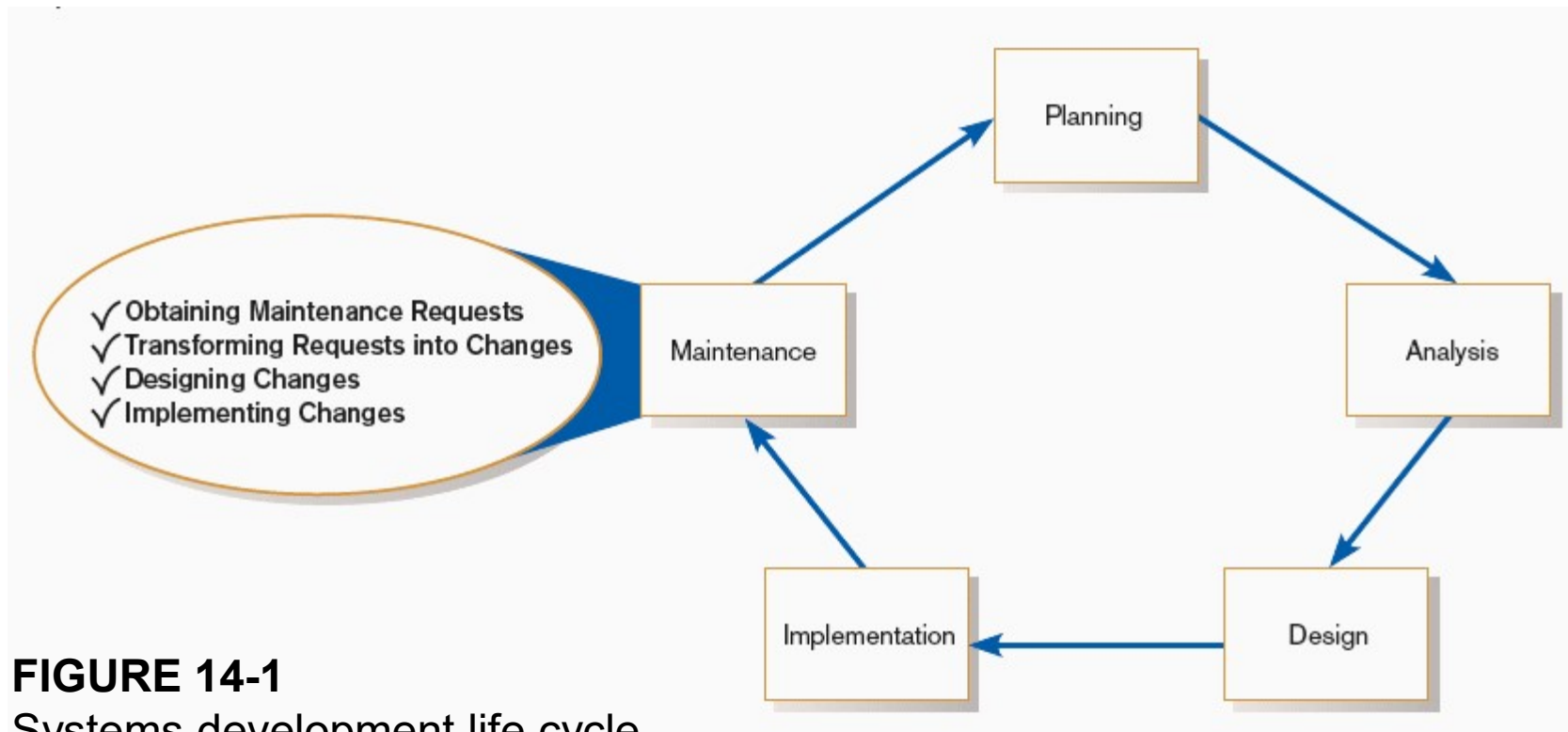



FIGURE 14-1
Systems development life cycle



The Process of Maintaining Information Systems

- Process of returning to the beginning of the SDLC and repeating development steps focusing on system change until the change is implemented
- Maintenance is the longest phase in the SDLC.



The Process of Maintaining Information Systems (Cont.)

- Four major activities:
 - Obtaining maintenance requests
 - Transforming requests into changes
 - Designing changes
 - Implementing changes



FIGURE 14-2
 System Service Request
 for purchasing
 fulfillment system (Pine
 Valley Furniture)

**Pine Valley Furniture
 System Service Request**

REQUESTED BY Juanita Lopez DATE November 5, 2014

DEPARTMENT Purchasing, Manufacturing Support

LOCATION Headquarters, 1-322

CONTACT Tel: 4-3267 FAX: 4-3270 e-mail: jlopez

TYPE OF REQUEST		URGENCY	
<input checked="" type="checkbox"/>	New System	<input type="checkbox"/>	Immediate—Operations are impaired or opportunity lost
<input type="checkbox"/>	System Enhancement	<input type="checkbox"/>	Problems exist, but can be worked around
<input type="checkbox"/>	System Error Correction	<input checked="" type="checkbox"/>	Business losses can be tolerated until new system is installed

PROBLEM STATEMENT

Sales growth at PVF has caused greater volume of work for the manufacturing support unit within Purchasing. Further, more concentration on customer service has reduced manufacturing lead times, which puts more pressure on purchasing activities. In addition, cost-cutting measures force Purchasing to be more aggressive in negotiating terms with vendors, improving delivery times, and lowering our investments in inventory. The current modest systems support for manufacturing purchasing is not responsive to these new business conditions. Data are not available, information cannot be summarized, supplier orders cannot be adequately tracked, and commodity buying is not well supported. PVF is spending too much on raw materials and not being responsive to manufacturing needs.

SERVICE REQUEST

I request a thorough analysis of our current operations with the intent to design and build a completely new information system. This system should handle all purchasing transactions, support display and reporting of critical purchasing data, and assist purchasing agents in commodity buying.

IS LIAISON Chris Martin (Tel: 4-6204 FAX: 4-6200 e-mail: cmartin)

SPONSOR Sal Divario, Director, Purchasing

----- TO BE COMPLETED BY SYSTEMS PRIORITY BOARD -----

<input type="checkbox"/>	Request approved	Assigned to _____
		Start date _____
<input type="checkbox"/>	Recommend revision	
<input type="checkbox"/>	Suggest user development	
<input type="checkbox"/>	Reject for reason _____	



Deliverables and Outcome

- The maintenance phase of the SDLC is basically a subset of the activities of the entire development process.



Deliverables and Outcome (Cont.)

- The deliverables and outcomes from the process are the development of a new version of the software and new versions of all design documents created or modified during the maintenance effort.



Types of System Maintenance (Cont.)

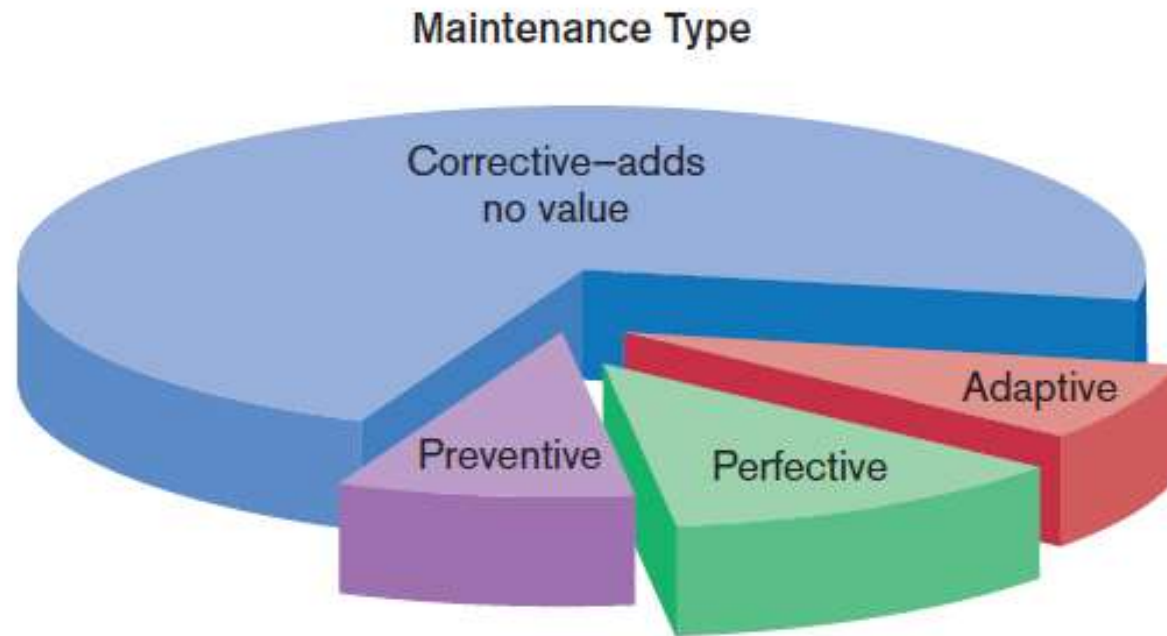


Figure 14-4

Value and non-value adding of different types of maintenance
(Sources: Based on Andrews and Leventhal, 1993; Pressman, 2005.)

Controlling Maintenance Requests (Cont.)

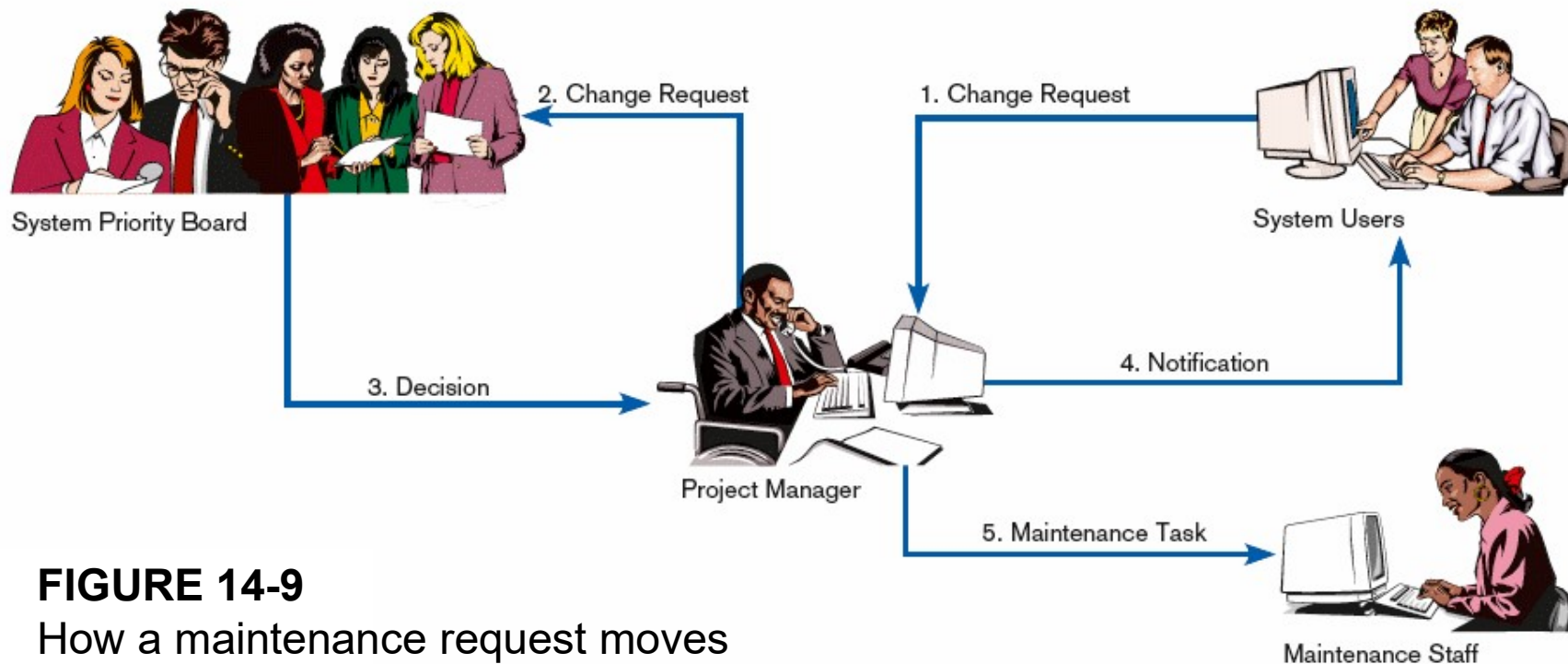


FIGURE 14-9
How a maintenance request moves through an organization



Web Site Maintenance

- Special considerations:
 - 24 X 7 X 365
 - Nature of continuous availability makes maintenance challenging.
 - Pages under maintenance can be locked.
 - Consider using date and time stamps to indicate when changes are made instead.



Web Site Maintenance (Cont.)

- Check for broken links
- HTML Validation
 - Pages should be processed by a code validation routine before publication.
- Reregistration
 - When content significantly changes, site may need to be reregistered with search engines.



Web Site Maintenance (Cont.)

□ Future Editions

- Consistency is important to users.
- Post indications of future changes to the site.
- Batch changes.



Summary

- In this chapter you learned how to:
 - ✓ Explain and contrast four types of system maintenance.
 - ✓ Describe several facts that influence the cost of maintaining an information system and apply these factors to the design of maintainable systems.
 - ✓ Describe maintenance management issues, including alternative organizational structures, quality measurement, processes for handling change requests, and configuration management.
 - ✓ Explain the role of CASE tools in maintaining information systems.