Chapter 13
Building Systems

True-False Questions

1. The most common form of IT-enabled organizational change is automation.

   Answer: True **Difficulty: Medium** **Reference: p. 514**

2. Failure to address properly the organizational changes surrounding the introduction of a new system can cause the demise of an otherwise good system.

   Answer: True **Difficulty: Medium** **Reference: p. 515**

3. Rationalization of procedures describes a radical rethinking of the business models.

   Answer: False **Difficulty: Medium** **Reference: p. 515**

4. All business processes are composed of a flow of goods and services.

   Answer: True **Difficulty: Medium** **Reference: p. 520**

5. TQM describes the measurement of quality as 3.4 defects per million.

   Answer: False **Difficulty: Medium** **Reference: p. 523**

6. Thorough testing is not required if, during the programming stage, the design documents are sufficiently detailed.

   Answer: False **Difficulty: Medium** **Reference: p. 527**

7. The system is not in production until conversion is complete.

   Answer: True **Difficulty: Easy** **Reference: p. 528**

8. Documentation reveals how well the system has met its original objectives.

   Answer: False **Difficulty: Hard** **Reference: p. 528**

9. The oldest method for building information systems is prototyping.

   Answer: False **Difficulty: Medium** **Reference: p. 534**

10. Prototyping is more iterative than the conventional lifecycle.

    Answer: True **Difficulty: Medium** **Reference: p. 535**

11. A problem with prototyping is that the systems constructed using this method may not be able to handle large quantities of data in a production environment.

Answer: True **Difficulty: Easy** **Reference: p. 536**

12. End-user-developed systems can be completed more rapidly than those developed through the conventional systems lifecycle.

Answer: True **Difficulty: Easy** **Reference: p. 536**

13. One advantage of fourth-generation tools is that they can easily handle processing large numbers of transactions or applications with extensive procedural logic and updating requirements.

Answer: False **Difficulty: Easy** **Reference: pp. 536–537**

14. In some forms of outsourcing, a company hires an external vendor to create the software for its system, but operates the software on its own computers.

Answer: True **Difficulty: Easy** **Reference: p. 538**

15. Systems development activities always take place in sequential order.

Answer: False **Difficulty: Medium** **Reference: p. 541**

16. A data flow diagram offers a logical and graphical model of information flow, partitioning a system into modules that show manageable levels of detail.

Answer: True **Difficulty: Medium** **Reference: p. 529**

17. A structure chart is a bottom-up chart, showing each level of design, its relationship to other levels, and its place in the overall design structure.

Answer: False **Difficulty: Medium** **Reference: p. 531**

18. Object-oriented development is more incremental than traditional structured development.

Answer: True **Difficulty: Medium** **Reference: p. 532**

19. Objects are grouped into hierarchies, and hierarchies into classes.

Answer: False **Difficulty: Medium** **Reference: p. 532**

20. CASE tools facilitate the creation of clear documentation and the coordination of team development efforts.

Answer: True **Difficulty: Easy** **Reference: p. 533**

Multiple-Choice Questions

21. *Evaluation*

What was the primary concern facing the Girl Scouts regarding their supply chain problems?

a. Ordering process was inefficient for a large volume of orders
b. High error rates in ordering and fulfillment
c. Required too much time of volunteers
d. Paper-based system was outdated

Answer: a **Difficulty: Medium** **Reference: pp. 511–512**

Evaluation in terms of assess, judge

22. *Analysis*

In which way did network economics play a role in the Girl Scouts solution to their supply chain problems?

a. The cost per user for their hosted Web solution
b. The use of a centralized database
c. Using a centralized system for orders and distribution
d. Network economics did not play a strong role in the solution

Answer: a **Difficulty: Medium** **Reference: pp. 511–512**

Analysis in terms of categorize

23. The four kinds of structural organizational change enabled by IT are:

a. rationalization, automation, reengineering, and redesigning
b. rationalization, automation, reengineering, and paradigm shift
c. automation, rationalization, restructuring, and reengineering
d. automation, restructuring, reengineering, and paradigm shift.

Answer: b **Difficulty: Medium** **Reference: p. 515**

24. Automation:

a. may change the entire nature of the business.
b. business processes are analyzed, streamlined, and reorganized to cut waste and eliminate repetitive, paper-intensive tasks.
c. standard operating procedures are streamlined to remove bottlenecks.
d. assists employees with performing their tasks more efficiently.

Answer: b **Difficulty: Easy** **Reference: p. 515**

25. *Analysis*

Based on your reading of the chapter, the redesign of mortgage application process by major mortgage banks was an example of which type of organizational change?

a. Automation
b. Paradigm shift
c. Reengineering
d. None of the above

Answer: b **Difficulty: Medium** **Reference: p. 516**

26. According to the chapter case on the SBA's redesign of its processes, the greatest gain from implementing its new information system was:

a. reduction in total claims needing processing.
b. major decreases in paperwork.
c. salary and daily expense reductions.
d. elimination of the need for processing paper-based claim forms.

Answer: c **Difficulty: Medium** **Reference: p. 519**

27. What are the two main considerations in determining which business processes should be improved for an effective reengineering project?

a. Cost and risk
b. Strategic analysis and pain points
c. Strategic analysis and workflow
d. Inputs and outputs

Answer: b **Difficulty: Medium** **Reference: p. 520**

28. What are the main dimensions used to measure business processes?

a. Cost, time, quality, and flexibility
b. Cost, time, quality, and organization
b. Inputs, outputs, cost, and quality
c. Inputs, outputs, cost, and time

Answer: a **Difficulty: Hard** **Reference: p. 521**

29. Enabling organizations to make continual improvements to many business processes and to use processes as the fundamental building blocks of corporate information systems is the goal of:

a. BPM.
b. BPR.
c. Reengineering.
c. Work flow management.

Answer: a **Difficulty: Hard** **Reference: p. 522**

30. The idea that the achievement of quality control is an end in itself describes a main concept of:

a. BPM.
b. BPR.
c. Six Sigma.
d. TQM.

Answer: d **Difficulty: Hard** **Reference: p. 523**

31. Which process develops a detailed description of the functions that a new information system must perform?

a. Feasibility study
b. Requirements analysis
c. Systems design
d. Test plan development

Answer: b **Difficulty: Medium** **Reference: p. 525**

32. *Analysis*The entire system-building effort is driven by:

a. organizational change.
b. feasibility studies.
c. the information value chain.
d. user information requirements.

Answer: d **Difficulty: Medium** **Reference: p. 525**

33. Systems design:

a. describes what a system should do to meet information requirements.
b. shows how the new system will fulfill the information requirements.
c. always tries to increase precision.
d. includes the testing phases.

Answer: b **Difficulty: Easy** **Reference: p. 525**

34. System design specifications that address the category of database design issues will include specifications for:

a. transaction volume and speed requirements.
b. data entry.
c. input, processing, and output controls.
d. program logic and computations.

Answer: a **Difficulty: Hard** **Reference: p. 526**

35. Transferring transaction data from a legacy system to the new system would be defined by which category of system design specifications?

a. Input
b. Database
c. Manual procedures
d. Conversion

Answer: d **Difficulty: Hard** **Reference: p. 526**

36. Determining methods for feedback and error handling would be defined by which category of system design specification?

a. Training and documentation
b. User interface
c. Manual procedures
d. Security and controls

Answer: b **Difficulty: Hard** **Reference: p. 526**

37. Unit testing:

a. includes all the preparations for the series of tests to be performed on the system.
b. tests the functioning of the system as a whole in order to determine if discrete modules will function together as planned.
c. tests each program separately.
d. provides the final certification that the system is ready to be used in a production setting.

Answer: c **Difficulty: Easy** **Reference: p. 527**

38. System testing:

a. includes all the preparations for the series of tests to be performed on the system.
b. tests the functioning of the system as a whole in order to determine if discrete modules will function together as planned.
c. tests each program separately.
d. provides the final certification that the system is ready to be used in a production setting.

Answer: b **Difficulty: Easy** **Reference: p. 527**

39. Acceptance testing:

a. includes all the preparations for the trials.
b. tests the functioning of the system as a whole in order to determine if discrete modules will function together as planned.
c. tests each program separately.
d. provides the final certification that the system is ready to be used in a production setting.

Answer: d **Difficulty: Easy** **Reference: p. 527**

40. In a parallel conversion strategy, the new system:

a. is tested by an outsourced company.
b. replaces the old one at an appointed time.
c. and the old are run together.
d. is introduced in stage.

Answer: c **Difficulty: Easy** **Reference: p. 527**

41. In the direct cutover conversion strategy, the new system:

a. is tested by an outsourced company.
b. replaces the old one at an appointed time.
c. and the old are run together.
d. is introduced in stages.

Answer: b **Difficulty: Easy** **Reference: p. 527**

42. Changes in hardware, software, documentation, or production to a production system to correct errors, meet new requirements, or improve processing efficiencies are termed:

a. compliance.
b. production.
c. maintenance.
d. acceptance.

Answer: c **Difficulty: Easy** **Reference: p. 528**

43. The primary tool for representing a system's component processes and the flow of data between them is the:

a. data dictionary.
b. process specifications diagram.
c. user documentation.
d. data flow diagram.

Answer: d **Difficulty: Easy** **Reference: p. 529**

44. In what stage of systems development are design specifications created?

a. Systems analysis
b. Systems design
c. Testing
d. Conversion

Answer: b **Difficulty: Medium** **Reference: p. 529**

45. To understand and define the contents of data flows and data store, system builders use a(n):

a. data dictionary.
b. process specifications diagram.
c. user documentation.
d. data flow diagram.

Answer: a **Difficulty: Medium** **Reference: p. 531**

46. To show each level of a system's design, it's relationship to other levels, and its place in the overall design structure, structured methodologies use:

a. structure charts.
b. Gantt charts and PERT.
c. process specifications.
d. data flow diagrams.

Answer: a **Difficulty: Medium** **Reference: p. 531**

47. An entire information system is broken down into its subsystems by using:

a. high-level data flow diagrams.
b. low-level data flow diagrams.
c. process specifications.
d. structured diagrams.

Answer: a **Difficulty: Medium** **Reference: p. 531**

48. *(Analysis)*

In an object-oriented development framework for a university, how would the classes Degree, Mathematics, and Physics be related?

a. Degree would be a sister class to Mathematics and Physics
b. Degree is a superclass to Mathematics and Physics
c. Mathematics and Physics would be ancestors to Degree
d. Degree would be a subclass to Mathematics and Physics

Answer: b **Difficulty: Medium** **Reference: p. 532**

49. Object-oriented modeling is based on the concepts of:

a. objects and relationships.
b. classes and objects.
c. class and inheritance.
d. objects and inheritance.

Answer: c **Difficulty: Medium** **Reference: p. 532**

50. Object-oriented development could potentially reduce the time and cost of writing software because:

a. object-oriented programming requires less training.
b. iterative prototyping is not required.
c. objects are reusable.
d. a single user interface object can be used for the entire application.

Answer: c **Difficulty: Easy** **Reference: p. 533**

51. Back-end CASE tools focus on:

a. converting specifications into program code.
b. capturing design specifications in the early stages of development.
c. integrating legacy tools with systems in development.
d. integrating databases with user interfaces.

Answer: a **Difficulty: Medium** **Reference: p. 533**

52. The oldest method for building information systems is the:

a. component-based development.
b. prototyping.
c. object-oriented development.
d. systems development lifecycle.

Answer: d **Difficulty: Easy** **Reference: p. 534**

53. In the traditional systems development lifecycle, end users:

a. are important and ongoing members of the team from the original analysis phase through maintenance.
b. are important only in the testing phases.
c. have no input.
d. are limited to providing information requirements and reviewing the technical staff's work.

Answer: d **Difficulty: Easy** **Reference: p. 534**

54. In which type of systems building are the development stages organized so that tasks in one stage are completed before the tasks in the next stage begun?

a. Traditional
b. Prototyping
c. RAD
d. All of the above

Answer: a **Difficulty: Easy** **Reference: p. 534**

55. *(Synthesize)*

As a technical project manager you have decided to propose implementing a prototyping methodology for a small Web-based design project. What is the order of steps you will follow in this project?

a. Develop the prototype; use the prototype; revise and enhance the prototype.
b. Identify user requirements, develop the prototype, use the prototype, revise and enhance the prototype.
c. Define the requirements, develop solutions, select the best prototype, and implement the prototype.
d. Define the requirements, develop the prototype, revise and enhance the prototype.

Answer: b **Difficulty: Medium** **Reference: p. 535**

(Synthesize in terms of arrange, compose)

56. A systems building approach in which the system is developed as successive versions, each version reflecting requirements more accurately, is described to be:

a. end-user oriented
b. iterative
c. object-oriented
d. progressive

Answer: b **Difficulty: Medium** **Reference: p. 535**

57. When systems are created rapidly, without a formal development methodology:

a. end users can take over the work of IT specialists.
b. the organization quickly outgrows the new system.
c. hardware, software, and quality standards are less important.
d. testing and documentation may be inadequate.

Answer: d **Difficulty: Easy** **Reference: p. 537**

58. Management should control the development of end-user applications by:

a. developing a formal development methodology.
b. requiring cost justification for end-user IS projects.
c. establishing standards for user-developed applications.
d. both b and c.
e. both a and b.

Answer: d **Difficulty: Hard** **Reference: p. 537**

59. Which type of fourth-generation language tools are end-users most likely to work with?

a. Report generators and query languages
b. Report generators and application generators
c. PC software tools and query languages
d. PC software tools and report generators

Answer: c **Difficulty: Hard** **Reference: p. 536**

60. Which type of fourth-generation language tool contains preprogrammed modules that can be used to create entire applications?

a. PC software tools
b. Report generator
c. Application generator
d. Application software package

Answer: c **Difficulty: Easy** **Reference: p. 537**

61. Fourth-generation tools cannot replace conventional development tools because:

a. they cannot handle large numbers of transactions or extensive procedural logic.
b. they are not designed to integrate with legacy systems.
c. they do not incorporate methods for documentation.
d. they do not incorporate methods for testing.

Answer: a **Difficulty: Hard** **Reference: pp. 536–537**

62. If an organization's requirements conflict with the software package chosen and the package cannot be customized, the organization will have to:

a. change its procedures.
b. outsource the development of the system.
c. redesign the RFP.
d. change the evaluation process.

Answer: a **Difficulty: Easy** **Reference: p. 538**

63. "Hidden costs" such as _____ can easily undercut anticipated benefits from outsourcing.

a. monitoring vendors to make sure they often are fulfilling their contractual obligations
b. transitioning to a new vendor
c. identifying and evaluating vendors of information technology services
d. all of the above

Answer: d **Difficulty: Easy** **Reference: p. 539**

64. The process of creating workable information systems in a very short period of time is called:

a. RAD.
b. JAD.
c. prototyping.
d. both b or c.

Answer: a **Difficulty: Easy** **Reference: pp. 539–541**

65. The chapter case on outsourcing models describes the outsourcing model of transaction relationships as one in which:

a. both the vendor and firm co-manage the project.
b. the firm contracts for relatively small chunks of IT services that are well-defined.
c. the firm's internal staff are used on a transaction basis by the vendor.
d. use of the vendor's systems are contracted for on a use or transaction basis.

Answer: c **Difficulty: Medium** **Reference: p. 540**

66. This type of systems development is characterized by significantly speeding up the design phase and the generation of information requirements and involving users at an intense level.

a. RAD
b. JAD
c. Prototyping
d. End-user development

Answer: b **Difficulty: Medium** **Reference: p. 541**

67. *(Synthesis)*

You are an IT project manager for an advertising firm. The firm wishes to create an online survey tool that will be used to survey focus group reactions to products in development. The most important consideration for the firm is being able to offer the tool as soon as possible as a new corporate service. However, you know that many of the senior managers that are business owners of this project have difficulty in understanding technical or software development issues, and are likely to change their requirements during the course of development. What development method would be most successful for this project?

a. RAD
b. JAD
c. End-user development
d. Prototyping

Answer: d **Difficulty: Medium** **Reference: pp. 534–541**

68. Groups of objects are assembled into software components for common functions, which can be combined into large-scale business applications, in this type of software development.

a. Object-oriented development
b. Component-based development
c. Structured methodologies
d. RAD

Answer: b **Difficulty: Easy** **Reference: p. 542**

69. Compared to the use of proprietary components, Web services promise to be less expensive and less difficult to implement because of:

a. their ability to integrate seamlessly with legacy systems.
b. the use of universal standards.
c. the ubiquity of the Internet.
d. the ability to reuse Web services components.

Answer: b **Difficulty: Easy** **Reference: p. 542**

70. As discussed in the chapter case on the U.S. Army payroll systems, the primary cause of errors in the system were due to:

a. lack of integration between two systems used for payroll.
b. vendor unfamiliarity with the U.S. Army's business processes.
c. lack of documentation in the reengineering process.
d. poorly documented processes used for determining pay.

Answer: a **Difficulty: Easy** **Reference: p. 549**

Fill in the Blanks

71. A systems analysis includes a(n) ***feasibility study*** that is used to determine whether the solution is achievable, from a financial, technical, and organizational standpoint.

Difficulty: Medium **Reference: p. 525**

72. ***Information requirements*** contain a detailed statement of the information needs that a new system must satisfy; identifies who needs what information, and when, where, and how the information is needed.

Difficulty: Medium **Reference: p. 525**

73. A(n) ***systems design*** is the model or blueprint for an information system solution and consists of all the specifications that will deliver the functions identified during systems analysis.

Difficulty: Medium **Reference: p. 525**

74. ***Conversion*** is the process of changing from the old system to the new system.

Difficulty: Easy **Reference: p. 527**

75. The conversion strategy in which the old and new systems are run concurrently is called a(n) ***parallel strategy***.

Difficulty: Medium **Reference: p. 527**

76. ***Process specifications*** describe the transformation occurring within the lowest level of the data flow diagrams.

Difficulty: Easy **Reference: p. 531**

77. ***Computer-aided software (systems) engineering (CASE)*** provides software tools to automate the methodologies to reduce the amount of repetitive work in systems development.

Difficulty: Medium **Reference: p. 533**

78. A(n) ***request for proposal (RFP)*** is a detailed list of questions submitted to external vendors to determine how well they meet the organization's specific requirements.

Difficulty: Easy **Reference: p. 538**

79. ***Joint application design*** is a process used to accelerate the generation of information requirements by having end-users and information system specialists work together in intensive interactive design sessions.

Difficulty: Easy **Reference: p. 541**

80. ***Web services*** loosely coupled, reusable software components based on extensible markup language (XML) and other open protocols and standards that enable one application to communicate with another with no custom programming required.

Difficulty: Medium **Reference: p. 542**

Essay Questions

81. *Synthesis*

Describe each type of organizational change enabled by information technology. Give an example of each type of change, as it might be illustrated through the operations of a hotel.

1. In automation, employees are assisted with performing tasks automatically. In a hotel, this might mean that a system is set up for the reservations desk to record and process customer reservations.
2. In rationalization of procedures, standard operating procedures are streamlined. In a hotel, this might mean that a reservation system that required three or four steps for checking a customer in would be reduced to one or two steps.
3. In business process reengineering, business processes are analyzed, simplified and redesigned. In a hotel, the reservation and check-in system might be designed to allow the customers to reserve rooms and check in themselves, without the need of a hotel employee to confirm the process.
4. In paradigm shift, the very nature of the business is rethought and new business models are defined. In a hotel, this might mean that the idea of renting rooms on a night-by-night basis to clients might be rethought of as an extended stay place, or perhaps even as a condominium or other business type.

Difficulty: Medium **Reference: pp. 514–515**

Synthesis in terms of model

82. *Synthesis*

You are consulting for the information technology division of a state university to guide and facilitate the design of a new system for handling college applications, which has previously been handled entirely with a paper-based process. They would like to set up a system by which prospective students can apply online. What factors should they consider before embarking on systems development?

Student answers will vary, but should include an understanding of the elements of reviewing an identified business process to understand how the process works. An example answer is:

The university has decided which business process they wish to enable through information technology. Now they should perform some more analysis on that process itself. Factors they will need to look at include:

- identifying the inputs and outputs.
- identifying the flow of this process.
- identifying the various activities and buffers or time delays in the process.
- identifying the resources: capital, labor, and time involved in the process.
- identifying the information structure and flow.
- identifying the process owner.
- identify other process actors and decision makers.

They will need to review the existing process and determine what steps can be automated or reengineered. A systems analysis with feasibility study should ultimately be conducted.

Difficulty: Hard **Reference: p. 520**

Synthesis in terms of propose

83. **Describe how business processes are measured.**

There are four main dimensions used to measure business processes:

- Process cost: the total cost of the process for a typical transaction.
- Process time: the total decision and activity time of all actors.
- Process flexibility: the ability of the process to produce a variety of outputs or change in the face of environmental pressures.
- Process quality: the amount of time and money spent to correct defective parts and service.

Difficulty: Medium **Reference: p. 521**

84. **What is the purpose of systems analysis? What does the systems analyst do to achieve these goals?**

It consists of defining the problem, identifying its causes, specifying the solution, and identifying the information requirements that must be met by a system solution.

The system analyst creates a road map of the existing organization and systems, identifying the primary owners and users of data in the organization. From this organizational analysis, the systems analyst details the problems of existing systems. By examining documents, work papers, and procedures; observing system operations; and interviewing key users of the systems, the analyst can identify the problem areas and objectives a solution would achieve. Often the solution requires building a new information system or improving an existing one.

The systems analysis itself would include a feasibility study to determine whether the solution suggested would be achievable from a financial, technical, and organizational standpoint.

Difficulty: Medium **Reference: pp. 524–525**

85. **List and describe at least nine factors considered in the design specifications for a new system. Give at least two examples for each one.**

- **Output.** Medium, content, timing
- **Input.** Origins, flow, data entry
- **User interface.** Simplicity, efficiency, logic, feedback, errors
- **Database design.** Logical data model, volume and speed requirements, organization and design, record specifications
- **Processing.** Computations, program modules, required reports, timing of outputs
- **Manual procedures.** What activities, who performs them, when, how, where
- **Controls.** Input controls, processing controls, output controls, procedural controls
- **Security.** Access controls, catastrophe plans, audit trails
- **Documentation.** Operations documentation, systems documents, user documentation
- **Conversion.** Transfer files, initiate procedures, select testing method, cut over to new system
- **Training.** Select training techniques, develop training modules, identify training facilities
- **Organizational changes.** Task redesign, job design, process design, organization structure design, reporting relationships

Difficulty: Medium **Reference: p. 526**

86. **You work for the IT department of a startup ASP, and it is your job to set up the testing processes for a new enterprise system the company will be hosting. Describe the processes you will recommend. What unique considerations will you have?**

The first step is to prepare the test plan. Any individual components will need to be tested separately, first, and then the system as a whole will need to be tested. Because this is a hosted application, the system will need to be tested as accessed from the variety of platforms that are supported by the application. If the hosted application supports both Mac and Windows users, the system and its parts will need to be tested using client computers running these systems.

Difficulty: Hard **Reference: p. 527**

87. *Evaluation*

What are the advantages and disadvantages of prototyping? Describe the steps in prototyping. Give at least two circumstances under which prototyping might be useful.

Prototyping is most useful when there is some uncertainty about requirements or design solutions. Because prototyping encourages intense end-user involvement throughout the process, it is more likely to produce systems that fulfill user requirements. Working prototype systems can be developed very rapidly and inexpensively.

Rapid prototyping can gloss over essential steps in systems development. If the completed prototype works reasonably well, management may not see the need for reprogramming, redesigned, full documentation in testing to build a polished production system. This can backfire later with large quantities of data or large numbers of users in a production environment.

The steps in prototyping are:

- identify the user's basic requirements.
- develop an initial prototype.
- use the prototype.
- revise and enhance the prototype.

Prototyping might be especially useful in designing end-user interfaces, or situations in which the users have no clear ideas of what their information requirements are.

Difficulty: Medium **Reference: pp. 534–536**

88. **List the identifying features of each of the five systems development approaches.**

- **Systems lifecycle.** Sequential step-by-step formal process, written specification and approvals, limited role of users
- **Prototyping.** Requirements specified dynamically with experimental system; rapid, informal, and iterative process; users continually interact with the prototype
- **Applications software package.** Commercial software eliminates the need for internally developed software programs
- **End-user development.** Systems created by end users using fourth-generation software tools, rapid and informal, minimal role of information systems specialists
- **Outsourcing.** Systems built and sometimes operated by an external vendor

Difficulty: Medium **Reference: pp. 534–539**

89. *Evaluation*

What qualities of object-oriented development make this method especially suitable for Internet applications?

Object-oriented development uses the object as the basic unit of systems analysis and design. The system is modeled as a collection of objects and the relationships between them.

E-commerce companies need to be able to add, change, and retire their technology capabilities very rapidly. Object-oriented development allows objects to be reused and repackaged with other objects to create new software, saving money and development time.

Difficulty: Medium **Reference: p. 533**

Evaluation in terms of assess, judge

90. *Evaluation and synthesis*

Discuss the role and influence the user plays in software development.

The user is the primary focus of software development. Whether a new information system succeeds or fails largely depends on the roles of users. Building successful information systems requires close cooperation among end users and information systems specialists throughout the systems development process. If users are heavily involved in the development of a system, they have more opportunities to mold the system according to their priorities and business requirements, and more opportunities to control the outcome. They also are more likely to react positively to the completed system because they have been active participants in the change process. Incorporating user knowledge and expertise leads to better solutions.

The role of the user in the development of software depends on the method of development used. In SLDC work, end users are limited to providing information requirements and reviewing the technical staff's work. In prototyping, users are involved throughout development, through the use and review of iterative steps of the prototype. In end-user development, the users themselves create the system. Users are typically more involved also in RAD, through the use of prototyping and JAD. In joint application design, end users and information systems specialists work together in an interactive session to discuss design.

Difficulty: Medium **Reference: pp. 526–528, 534–541**

Evaluation in the sense of making judgments; synthesis in the sense of generalizing.