

Chapter 12

Enhancing Decision Making

True-False Questions

1. Unstructured decisions are novel and nonroutine, and there is no well-understood or agreed-on procedure for making them.

Answer: True **Difficulty: Easy** **Reference: p. 474**

2. A structured decision can be made by following a well-defined set of procedures. No “feel” or intuition is necessary.

Answer: True **Difficulty: Easy** **Reference: p. 474**

3. Unstructured decision making is most prevalent at lower organizational levels.

Answer: False **Difficulty: Easy** **Reference: p. 475**

4. Middle management tends to face more structured decision scenarios, and rarely include unstructured components.

Answer: False **Difficulty: Easy** **Reference: p. 475**

5. Rank-and-file employees tend to make more structured decisions.

Answer: True **Difficulty: Easy** **Reference: p. 475**

6. The intelligence phase of decision making consists of discovering, identifying, and understanding the problems occurring in the organization.

Answer: True **Difficulty: Easy** **Reference: p. 476**

7. The implementation phase of Simon’s decision making model includes choosing among solution alternatives.

Answer: False **Difficulty: Medium** **Reference: p. 476**

8. The first stage in Simon's decision-making process model is the design stage.

Answer: False **Difficulty: Easy** **Reference: p. 476**

9. The classical model of management does not address what exactly managers do when they plan, decide things, and control the work of others.

Answer: True **Difficulty: Medium** **Reference: p. 477**

10. MIS typically produce fixed, regularly scheduled reports based on data extracted and summarized from the firm's underlying transaction processing systems.
- Answer: True** **Difficulty: Easy** **Reference: p. 480**
11. DSS primarily address structured problems.
- Answer: False** **Difficulty: Easy** **Reference: p. 480**
12. The earliest DSS were data-driven.
- Answer: False** **Difficulty: Medium** **Reference: p. 480**
13. What-if analysis works forward from known or assumed conditions.
- Answer: True** **Difficulty: Easy** **Reference: p. 482**
14. Backward sensitivity analysis software is used for goal seeking.
- Answer: True** **Difficulty: Easy** **Reference: p. 482**
15. Data visualization technologies help distill large amounts of information into easily read lists of text.
- Answer: False** **Difficulty: Easy** **Reference: p. 490**
16. A geographic information system is a decision support system designed specifically to work with spatial information.
- Answer: True** **Difficulty: Easy** **Reference: p. 490**
17. DSS are a special category of GIS.
- Answer: False** **Difficulty: Easy** **Reference: p. 490**
18. With an environmental scanning facility, ESS are able to detect signals of problems in the organizational environment that indicate strategic threats and opportunities
- Answer: True** **Difficulty: Easy** **Reference: p. 494**
19. Web-based tools for videoconferencing and electronic meetings are the primary tools for GDSS.
- Answer: False** **Difficulty: Hard** **Reference: p. 496**
20. During a GDSS electronic meeting, the attendees control the use of GDSS tools.
- Answer: False** **Difficulty: Easy** **Reference: p. 497**

Multiple-Choice Questions

21. *Analysis*

According to your reading of the text, Procter & Gamble's use of DSS illustrates the use of information systems to implement which common business strategy?

- a. Low-cost leadership
- b. Product differentiation
- c. Focus on market niche
- d. Strengthen customer and supplier intimacy

Answer: a

Difficulty: Easy

Reference: p. 471

22. *Evaluation*

What quality of the DSS did Procter & Gamble employ that was most integral to the determination of an effective solution for optimizing their supply chain?

- a. Ability to tie numerous legacy systems into a single DSS
- b. Modeling capabilities
- c. Support of unstructured decision making
- d. Use of expert systems

Answer: b

Difficulty: Medium

Reference: pp. 471–472

23. Where there is no well-understood or agreed-on procedure for making a decision, it is said to be:

- a. undocumented.
- b. unstructured.
- c. documented.
- d. semistructured.

Answer: b

Difficulty: Easy

Reference: p. 474

24. The type of decision that can be made by following a definite procedure is called a(n):

- a. structured decision.
- b. unstructured decision.
- c. semistructured decision.
- d. procedural decision.

Answer: a

Difficulty: Easy

Reference: p. 474

25. *Analysis*

Which type of decision is deciding whether to introduce a new product line?

- a. Structured
- b. Unstructured
- c. Recurring
- d. Nonrecurring

Answer: b

Difficulty: Easy

Reference: pp. 474-475

Analysis in terms of categorize

26. *Analysis*

Which type of decision is calculating gross pay for hourly workers?

- a. Structured
- b. Unstructured
- c. Recurring
- d. Nonrecurring

Answer: a

Difficulty: Easy

Reference: p. 475

Analysis in terms of categorize

27. Which type of decision is more prevalent at lower organizational levels?

- a. Procedural
- b. Unstructured
- c. Structured
- d. Semistructured

Answer: c

Difficulty: Easy

Reference: p. 475

28. Which type of decision is most common at higher levels of management?

- a. Semistructured
- b. Unstructured
- c. Structured
- d. Undocumented

Answer: b

Difficulty: Easy

Reference: p. 475

29. Rank-and-file employees tend to make more of these types of decisions:

- a. semistructured.
- b. unstructured.
- c. structured.
- d. procedural.

Answer: c

Difficulty: Easy

Reference: p. 475

30. Simon's description of decision making consists of four stages:

- a. planning, financing, implementation, and maintenance.
- b. planning, design, implementation, and maintenance.
- c. intelligence, design, choice, and implementation.
- d. intelligence, design, financing, and implementation.

Answer: c

Difficulty: Medium

Reference: p. 476

31. Which phase of decision making finds or recognizes a problem, need, or opportunity?

- a. Design
- b. Intelligence
- c. Choice
- d. Implementation

Answer: b

Difficulty: Easy

Reference: p. 476

32. In contrast to the classical model of management, behavioral models see the actual behavior of managers as being _____.

- a. more systematic
- b. more informal
- c. more reflective
- d. more well organized

Answer: b

Difficulty: Medium

Reference: p. 477

33. Mintzberg's classification of managerial roles defines three main categories:

- a. interpersonal, informational, and decisional.
- b. symbolic, decisional, and interpersonal.
- c. symbolic, interpersonal, and technical.
- d. technical, interpersonal, and informational.

Answer: a

Difficulty: Medium

Reference: p. 477

34. The role of liaison falls into which of Mintzberg's managerial classifications?

- a. Decisional
- b. Informational
- c. Interpersonal
- d. Symbolic

Answer: c

Difficulty: Hard

Reference: p. 478

35. The role of entrepreneur falls into which of Mintzberg's managerial classifications?

- a. Decisional
- b. Informational
- c. Interpersonal
- d. Symbolic

Answer: a

Difficulty: Hard

Reference: p. 478

36. Which of the following managerial roles is not supported by information systems?

- a. Spokesperson
- b. Resource allocator
- c. Leader
- d. Nerve center

Answer: c

Difficulty: Medium

Reference: p. 478

37. As discussed in the chapter text, the three main reasons that investments in information technology do not always produce positive results are:

- a. management support, technical logistics, and user compliance.
- b. organization, environment, culture.
- c. information quality, information integrity, and information accuracy.
- d. information quality, organizational culture, and management filters.

Answer: d

Difficulty: Medium

Reference: p. 478

38. The concern that data values of an information source fall within a defined range reflects which quality dimension of information?

- a. Accuracy
- b. Integrity
- c. Validity
- d. Consistency

Answer: c

Difficulty: Hard

Reference: p. 479

39. The concern that the structure of data is consistent within an information source reflects which quality dimension of information?
- Accuracy
 - Integrity
 - Validity
 - Consistency

Answer: b **Difficulty: Hard** **Reference: p. 479**

40. MIS typically produce:
- new ways of looking at data that emphasize change, flexibility, and rapid response.
 - fixed, regularly scheduled reports based on data extracted from the organization's TPS.
 - solutions to semistructured problems appropriate for middle management decision making.
 - assumptions, responses to ad hoc queries, and graphic representations of existing data.

Answer: b **Difficulty: Easy** **Reference: p. 480**

41. Analysis

An information system for a building company that tracks construction costs for various projects across the United States would be categorized as a type of:

- DSS.
- MIS.
- GIS.
- CDSS.

Answer: b **Difficulty: Easy** **Reference: p. 480**

42. These systems support decision making by enabling users to extract useful information that was previously buried in large quantities of data:

- GSS.
- ESS.
- TPS.
- DSS.

Answer: d **Difficulty: Easy** **Reference: p. 481**

43. The components of a DSS are the:

- internal corporate database, external data sources, and analysis tools.
- data visualization tools, software, and graphics capabilities.
- database, graphics capabilities, and analysis tools.
- database, software system, and user interface.

Answer: d **Difficulty: Medium** **Reference: p. 481**

44. A DSS database is a collection of:
- historical data extracted from transaction processing systems.
 - current or historical data from several applications or groups.
 - external data typically mined from the Internet and other third-party sources.
 - the corporation's current transaction data.

Answer: b **Difficulty: Medium** **Reference: p. 481**

45. Which type of model asks what-if questions repeatedly to determine the impact on outcomes of changes in one or more factors?
- Optimization
 - Sensitivity analysis
 - Statistical
 - Forecasting

Answer: b **Difficulty: Medium** **Reference: p. 482**

46. Which type of model is used to help managers use historical data to estimate future conditions and sales figures resulting from these conditions?
- Optimization
 - Sensitivity analysis
 - Statistical
 - Forecasting

Answer: d **Difficulty: Medium** **Reference: p. 482**

47. Backward sensitivity analysis software is used for:
- supply chain optimization.
 - historical what-if analysis.
 - goal seeking.
 - reverse forecasting.

Answer: c **Difficulty: Hard** **Reference: p. 482**

48. Analysis

You would use an optimization model to:

- project future conditions and predict the effect of these conditions on sales.
- determine the proper mix of products within a given market to maximize profits.
- determine the price of a product given fluctuating sales and advertising budget.
- establish the best relationship between price and sales and marketing budgets.

Answer: b **Difficulty: Medium** **Reference: p. 482**
Analysis in terms of categorize

49. A pivot table is a:
- a. spreadsheet tool that displays two or more dimensions of data in a convenient format.
 - b. type of relational database.
 - c. chart tool that can rotate columnar data quickly and visually.
 - d. tool for performing sensitivity analysis.

Answer: a **Difficulty: Easy** **Reference: p. 482**

50. The chapter case on Renault's information systems illustrates the use of which type of system to move to a pull-based model for its supply chain?
- a. CDSS
 - b. DSS
 - c. GIS
 - d. GDSS

Answer: b **Difficulty: Medium** **Reference: p. 488**

51. *Synthesis*

Which of Porter's competitive forces was at work in the Renault's decision to develop an information system to help improve their supply chain?

- a. Substitute products and services
- b. New market entrants
- c. Traditional competitors
- d. None, in this case, Renault's problem was based on the quality of their product

Answer: c **Difficulty: Medium** **Reference: p. 488**

52. This information system uses data visualization technology to analyze and display data for planning and decision making in the form of digitized maps.

- a. GIS
- b. DSS
- c. MIS
- d. TPS

Answer: a **Difficulty: Easy** **Reference: p. 490**

53. A system that uses data mining to guide decisions about customer retention can be categorized as a:

- a. CDSS
- b. MIS
- c. DSS
- d. ESS

Answer: a **Difficulty: Medium** **Reference: p. 490**

54. *Analysis*

Dell Computer's online tools for selecting and customizing a new PC are a type of:

- a. DSS.
- b. CDSS.
- c. Web-based GIS.
- d. Intelligent agent.

Answer: a

Difficulty: Medium

Reference: p. 491

55. *Analysis*

As discussed in the chapter case, the COMPSTAT system developed by the New York City Police was a type of:

- a. CDSS.
- b. PDSS.
- c. GIS.
- d. GDSS.

Answer: c

Difficulty: Easy

Reference: p. 492

56. The easy use of graphics in an ESS allows the user to:

- a. look at more data in less time with greater clarity.
- b. use creative analysis.
- c. quickly manipulate TPS and historical data.
- d. decentralize decision making.

Answer: a

Difficulty: Easy

Reference: pp. 493–504

57. *ESS:*

- a. support the structured decision making of senior executives.
- b. have the ability to drill down into lower levels of detail.
- c. easily integrate data from different systems.
- d. are primarily driven by information derived from a company's transaction processing systems.

Answer: b

Difficulty: Medium

Reference: p. 494

58. Executives need a wide range of _____ as well as internal data.

- a. structured
- b. informal
- c. system
- d. external

Answer: d

Difficulty: Easy

Reference: p. 494

59. A well-designed ESS will allow management to:
- have greater span of control.
 - allow lower levels of management greater control.
 - lessen the need to review lower levels of operation.
 - all of the above.

Answer: d **Difficulty: Medium** **Reference: p. 494**

60. The traditional measurement of value for companies includes financial metrics such as:
- double-entry bookkeeping.
 - ING metrics analysis.
 - balanced scorecards.
 - return on investment.

Answer: d **Difficulty: Easy** **Reference: p. 495**

61. Which of the following features of an ESS supplements traditional financial metrics with measurements from additional perspectives, such as customers, or learning and growth?
- Balanced scorecards
 - Digital dashboard
 - Graphic visualization tools
 - Drill-down capabilities

Answer: a **Difficulty: Easy** **Reference: p. 495**

62. Analysis

The information system used by Caesar's Entertainment, which combines data from internal TPS with information from financial systems and external sources to deliver reports such as profit-loss statements, impact analyses, is an example of:

- DSS
- ESS
- CDSS
- MIS

Answer: b **Difficulty: Easy** **Reference: p. 496**

63. Electronic questionnaires in a GDSS:

- a. facilitate the organized integration and synthesis of ideas generated during brainstorming.
- b. document group agreement on definitions of words and terms central to the projects.
- c. use structured approaches to evaluate the impact of an emerging proposal on the organization.
- d. aid the organizers in pre-meeting planning by identifying issues of concern.

Answer: d

Difficulty: Medium

Reference: p. 497

64. Idea organizers in a GDSS:

- a. facilitate the organized integration and synthesis of ideas generated during brainstorming.
- b. document group agreement on definitions of words and terms central to the projects.
- c. use structured approaches to evaluate the impact of an emerging proposal on the organization.
- d. aid the organizers in pre-meeting planning by identifying issues of concern.

Answer: a

Difficulty: Medium

Reference: p. 497

65. Stakeholder identification and analysis tools in a GDSS:

- a. facilitate the organized integration and synthesis of ideas generated during brainstorming.
- b. document group agreement on definitions of words and terms central to the projects.
- c. use structured approaches to evaluate the impact of an emerging proposal on the organization.
- d. aid the organizers in pre-meeting planning by identifying issues of concern.

Answer: c

Difficulty: Easy

Reference: p. 497

66. An essential component in the ability of GDSS to contribute to a collaborative environment is:

- a. allowing users to contribute simultaneously.
- b. using structured methods for evaluating ideas.
- c. identifying users informally.
- d. guarantee of user anonymity.

Answer: d

Difficulty: Easy

Reference: p. 498

67. In an electronic meeting system, group interaction activities include:
- session planning, documenting organizational memory, enhancing personal productivity, and enterprise analysis.
 - session planning, prioritizing, policy development and organizational memory.
 - idea generation, evaluating complex problems, and large groups.
 - idea generation, idea organization, prioritizing, and policy development.

Answer: d **Difficulty: Hard** **Reference: p. 498**

68. GDSS:
- are designed to allow meeting attendees to share their thoughts in real-time with their peers.
 - support decisions that require knowledge about the geographic distribution of resources.
 - are typically used with geographically dispersed attendees.
 - implement structured methods for organizing and evaluating ideas.

Answer: d **Difficulty: Hard** **Reference: p. 498**

69. GDSS are most useful for tasks involving:
- session planning, organizational memory, personal productivity, and enterprise analysis.
 - idea generation, complex problems, and large groups.
 - idea generation, idea organization, prioritizing, and policy development.
 - session planning, prioritizing, policy development, and organizational memory.

Answer: b **Difficulty: Medium** **Reference: p. 499**

70. Synthesis

The chapter case discussing CPOE systems illustrates:

- the quantifiable advantages of even simple CPOE systems in reducing the high rates of adverse drug events.
- the health risks engendered by physician non-compliance with CPOE systems.
- the complexity of merging legacy systems with new CPOE systems.
- the complexity of evaluating and managing new CPOE systems.

Answer: d **Difficulty: Medium** **Reference: pp. 505–508**

Synthesis in the sense of apply

Fill In the Blanks

71. Structured decisions are repetitive and routine, for which known algorithms provide solutions.

Difficulty: Easy **Reference: p. 474**

72. The third stage in Simon's description of decision making is choice.
- Difficulty: Medium Reference: p. 476**
73. The concept of management filters describes situations in which managers act on biases that reject information that does not conform to their expectations.
- Difficulty: Medium Reference: p. 479**
74. Model-driven DSS have analysis capabilities based on strong theories and used to perform "what-if" and similar kinds of analyses.
- Difficulty: Easy Reference: pp. 480–481**
75. Of the three main DSS components, the software system comprises the tools used for data analysis.
- Difficulty: Easy Reference: p. 482**
76. A(n) model is an abstract representation illustrating the components or relationships of a phenomenon.
- Difficulty: Easy Reference: p. 482**
77. A(n) optimization model determines the best resource allocation to maximize or minimize specified variables.
- Difficulty: Medium Reference: p. 482**
78. A(n) customer decision-support system (CDSS) supports the decision-making processes of an existing or potential customer.
- Difficulty: Easy Reference: p. 491**
79. A Digital dashboard uses an easy-to-understand display to provide management with a comprehensive view of firm performance on a single screen.
- Difficulty: Hard Reference: p. 495**
80. Group decision-support systems (GDSS) facilitate the solution to unstructured problems by a set of decision-makers working together as a group.
- Difficulty: Easy Reference: p. 496**

Essay Questions

81. **Describe MIS and DSS and differentiate between them.**

MIS provide information on the firm's performance to help managers monitor and control the business. They typically produce hard copy, fixed, regularly scheduled reports based on data extracted and summarized from the organization's underlying transaction processing systems.

DSS provide new sets of capabilities for nonroutine decisions and user control.

MIS accents reports based on routine flows of data and assists in the general control of the organization. DSS emphasizes change, flexibility, and rapid response to unstructured problems.

Difficulty: Medium

Reference: p. 480

82. **What is the difference between a model-driven and a data-driven DSS?**

Model-driven DSS use some type of model to perform "what-if" and other types of analyses. Their analysis capabilities were based on a strong theory or model combined with a good user interface to make the model easy to use.

Data-driven DSS analyze large pools of data found in major organizational systems. They support decision making by allowing users to extract useful information that was previously buried in large quantities of data.

Difficulty: Medium

Reference: pp. 480–481

83. **Discuss four types of models commonly used by DSS.**

Statistical modeling software can be used to help establish relationships, such as relating product sales to differences in age, income, or other factors between communities.

Optimization models determined optimal resource allocation to maximize or minimize specified variables such as cost or time. A classic use of optimization models is to determine the proper mix of products within a given market to maximize profits.

Forecasting models are often used to forecast sales. The user of this type of model might supply a range of historical data to project future conditions and the sales that might result from those conditions. Companies often use this software to predict the actions of competitors.

Sensitivity analysis models ask "what-if" questions repeatedly to determine the impact of changes in one or more factors on outcomes.

Difficulty: Hard

Reference: p. 482

84. **What is the business value of a DSS?**

DSS can help companies improve supply chain management and customer relationship management. Some take advantage of the company-wide data provided by enterprise systems. DSS today can also harness the interactive capabilities of the Web to provide decision-support tools to both employees and customers.

Difficulty: Hard

Reference: p. 490

85. *Analysis*

If both contemporary ESS and DSS incorporate tools for modeling and analysis, what qualities distinguish the two types of system?

DSS are concerned with solving more specific business problems, such as determining the best pricing for a product, establishing optimized delivery routes, whereas ESS are designed specifically for executives to use as a way of managing the company and seeing an overview of both external and internal information in order to monitor more general business situations. The ESS modeling tools would be used to provide different views of status, rather than to analyze large amounts of data to arrive at a solution for a specific problem.

Difficulty: Medium

Reference: p. 490

Analysis in terms of differentiate

86. *Synthesis*

List and describe at least three ways in which GIS can be used by modern business.

Geographic information systems are a special category of DSS that use data visualization technology to analyze and display data for planning and decision making in the form of digitized maps. GIS can best be used to support decisions that require knowledge about the geographic distribution of people or other resources in scientific research, resource management, and development planning. GIS have modeling capabilities, allowing managers to change data and automatically revise business scenarios to find better solutions.

For instance, a company could display its customers on a map and then design the most efficient delivery route for its products. A second way in which it could be used would be to analyze demographic information to decide where to open branch restaurants. A third use could be customer demographic data and map information to locate people who are likely to become customers for the company's services.

Difficulty: Hard

Reference: p. 490

Synthesis in terms of propose, model

87. *Evaluation*

What do you see as the business value of a GDSS?

GDSS helps groups make decisions about unstructured problems. Firstly, because GDSS provides value by allowing collaboration over important decisions—the decision doesn't rest in the hands of one person alone. By having more people working on the problem, the decision is more likely to realistically reflect the needs and goals of the group, rather than just one person. Secondly, because anonymity is a feature, people are encouraged to be more honest. This will also enhance the accuracy of the solution. The ability of the GDSS to record the meeting and decisions means that the decision-making process, its ideas and solutions, can be made part of the company's knowledge base. Additionally, by providing structure, the GDSS may enhance the efficiency of the particular type of unstructured decision making.

Difficulty: Medium

Reference: pp. 498–499

Evaluation in terms of assess, judge

88. **Describe and explain how a GDSS works to enhance group decision making. What are at least four factors involved in the successful outcome of any group meeting?**

Beyond three to five attendees the traditional meeting process breaks down. GDSS software tools contribute to a more collaborative atmosphere by guaranteeing contributors' anonymity so that attendees can focus on evaluating the ideas themselves. The GDSS software tools follow structured methods for organizing and evaluating ideas and for preserving the results of meetings, allowing non-attendees to locate needed information after the meeting. The documentation of the meeting by one group at one site can also be used as input to another meeting on the same project at another site. If properly designed and supported, GDSS meetings can increase the number of ideas generated and the quality of decisions while producing the desired results in fewer meetings.

The nature of electronic meeting technology is only one of a number of factors that affect meeting processes and output. The outcome of group meetings depends upon the composition of the group, the manner in which the problem is presented to the group, the facilitator's effectiveness, the organization's culture and environment, the quality of the planning, the cooperation of the attendees, and the appropriateness of tools selected for different types of meetings and decision problems.

Difficulty: Medium

Reference: pp. 498–499

89. *Evaluation*

You have been hired as a consultant for an established bicycle parts manufacturer to assist senior management in planning a new ESS. What factors will you advise management to take into consideration?

Student answers will vary, but should take into account technical difficulties (integrating data from different systems), the types of information and overview of the organization needed, and change management. An example answer is:

A major challenge of building executive support systems has been to integrate data from systems designed for very different purposes so that senior executives can review organizational performance from a firm-wide perspective.

ESS must be designed so that high-level managers and others can use them without much training.

One area that merits special attention is the determination of executive information requirements. ESS need to have some facility for environmental scanning. A key information requirement of managers at the strategic level is the capability to detect signals of problems in the organizational environment that indicate strategic threats and opportunities. The ESS need to be designed so that both external and internal sources of information can be used for environmental scanning purposes.

Implementation of the ESS must be carefully managed to neutralize the opposition of managers at the lower levels of the organization, because ESS potentially could give top executives the ability to examine their work without their knowledge.

Difficulty: Medium

Reference: pp. 493–496

Evaluation in terms of assess

90. **What is the balanced scorecard model? Why is it particularly useful? Where does it get its information?**

The balanced scorecard is a model for analyzing firm performance that supplements traditional financial measures with measurements from additional business perspectives, such as customers, internal business processes, and learning and growth. Managers can use balanced scorecard systems to see how well the firm is meeting its strategic goals. Data to fill out the scorecard, from sources such as financial ledger applications and client retention and market penetration ratios, feed a central data warehouse. The data is mined and ad-hoc reports can be created.

Difficulty: Medium

Reference: p. 495