

Decision Support and Business Intelligence Systems, 9e (Turban)
Chapter 2 Decision Making, Systems, Modeling, and Support

1) When trying to solve a problem, developers at the manufacturer HP consider the three phases in developing a model. Their first phase is problem analytics.

Answer: FALSE

Diff: 2 Page Ref: 39

2) If a problem arises due to misalignment of incentives or unclear lines of authority or plans, then no model can help solve that root problem.

Answer: TRUE

Diff: 2 Page Ref: 39

3) When developers design and develop tools, the first guideline is to develop a prototype to test the designs and get early feedback from the end users to see what works for them and what needs to be changed.

Answer: TRUE

Diff: 2 Page Ref: 39

4) It is important to remove unneeded complexity from a model before handoff because as a tool becomes more complex it requires more automation.

Answer: FALSE

Diff: 3 Page Ref: 39

5) Groupthink among decision makers can help lead to the best decisions.

Answer: FALSE

Diff: 3 Page Ref: 41

6) Experimentation with a real system is possible only for one set of conditions at a time and can be disastrous.

Answer: TRUE

Diff: 2 Page Ref: 41

7) Collecting information and analyzing a problem are the fastest and least expensive parts of decision-making.

Answer: FALSE

Diff: 2 Page Ref: 41

8) Fast decision-making requirements tend to reduce decision quality.

Answer: TRUE

Diff: 1 Page Ref: 41

9) According to Simon, managerial decision making is synonymous with managers using decision support systems.

Answer: FALSE

Diff: 1 Page Ref: 42

10) Most Web-based DSS are focused on improving decision efficiency.

Answer: FALSE

Diff: 1 Page Ref: 42

11) Personality temperament tests are often used to determine decision styles.

Answer: TRUE

Diff: 2 Page Ref: 43

12) Problem identification is the conceptualization of a problem in an attempt to place it in a definable category, possibly leading to a standard solution approach.

Answer: FALSE

Diff: 3 Page Ref: 48

13) One approach to solving a complex problem is to divide it into simpler subproblems and then solve those subproblems.

Answer: FALSE

Diff: 2 Page Ref: 49

14) A problem exists in an organization only if someone or some group takes on the responsibility of attacking it and if the organization has the ability to solve it.

Answer: TRUE

Diff: 2 Page Ref: 50

15) The process of modeling involves determining the (usually mathematical, sometimes symbolic) relationships among the variables.

Answer: TRUE

Diff: 1 Page Ref: 51

16) "Humans are economic beings whose objective is to maximize the attainment of goals" is one of the assumptions of rational decision makers.

Answer: TRUE

Diff: 2 Page Ref: 52

17) The idea of "thinking with your gut" is a heuristic approach to decision making.

Answer: TRUE

Diff: 1 Page Ref: 52

18) Rationality is bounded only by limitations on human processing capacities but not by individual differences.

Answer: FALSE

Diff: 2 Page Ref: 55

19) In general, people have a tendency to measure uncertainty and risk badly; for example, people tend to be overconfident and have an illusion of control in decision making.

Answer: TRUE

Diff: 2 Page Ref: 56

20) Web-based systems have clearly influenced how decision making is supported.

Answer: TRUE

Diff: 2 Page Ref: 63

21) Groupthink tends to _____ the quality of decisions.

A) be detrimental to

B) improve

C) prolong

D) complicate

Answer: A

Diff: 2 Page Ref: 41

22) Decision making that involves too much information may lead to a condition known as _____.

A) groupthink

B) information overload

C) experimentation

D) over assumption

Answer: B

Diff: 1 Page Ref: 41

23) Decisions are often made by _____, especially at lower managerial levels and in small organizations.

A) groups

B) management teams

C) individuals

D) computerized systems

Answer: C

Diff: 2 Page Ref: 42

24) Different decision styles require different types of support. A major factor that determines the type of required support is whether the decision maker is _____.

A) autocratic

B) consultative

C) an individual or a group

D) democratic

Answer: C

Diff: 2 Page Ref: 43

25) Which of the following is a physical replica of a system, usually on a different scale from the original?

- A) Complex model
- B) Iconic model
- C) Duplicated model
- D) Composite model

Answer: B

Diff: 2 Page Ref: 44

26) Which of the following model behaves like the real system but does not look like it?

- A) Composite model
- B) Analog model
- C) Dense model
- D) Iconic model

Answer: B

Diff: 2 Page Ref: 44

27) There is a continuous flow of activity from one phase to the next phase in a decision making process, but at any phase there may be a return to a previous phase. _____ is an essential part of this process.

- A) Testing
- B) Trial-and-error
- C) Experimenting
- D) Modeling

Answer: D

Diff: 2 Page Ref: 46

28) The identification of organizational goals and objectives related to an issue of concern and determination of whether they are being met is the beginning of the _____ of decision making.

- A) initial phase
- B) intelligence phase
- C) brainstorming phase
- D) generation phase

Answer: B

Diff: 2 Page Ref: 46

29) Which of the following involves finding or developing and analyzing possible courses of action in a decision making phase?

- A) Consultation phase
- B) Communication phase
- C) Intelligence phase
- D) Design phase

Answer: D

Diff: 2 Page Ref: 46

30) A(n) _____ is a criterion that describes the acceptability of a solution approach. In a model, it is a result variable.

- A) principle of choice
- B) optimization variable
- C) trade-off
- D) worst-case criterion

Answer: A

Diff: 3 Page Ref: 51

31) Which of the following describes normative models?

- A) These models are based on anomalies in rational decision making.
- B) They are models in which the chosen alternative is demonstrably the best of all possible alternatives.
- C) They are models based on the phenomenon of preference reversal.
- D) They lead to an approach known as suboptimization.

Answer: B

Diff: 3 Page Ref: 51

32) Which of the following, by definition, requires a decision maker to consider the impact of each alternative course of action on the entire organization because a decision made in one area may have significant effects in other areas?

- A) Satisfaction
- B) Worst-case
- C) Feasibility
- D) Optimization

Answer: D

Diff: 1 Page Ref: 51

33) "Thinking with your gut" is a heuristic approach to decision making that would work best for _____.

- A) amateur chefs
- B) payroll processors and accountants
- C) experienced firefighters and military personnel on the battlefield
- D) structured decision situations

Answer: C

Diff: 3 Page Ref: 52

34) With _____, the performance of the system is checked for a given set of alternatives, rather than for all alternatives. Therefore, there is no guarantee that an alternative selected is optimal.

- A) analytical analysis
- B) descriptive analysis
- C) optimization analysis
- D) quantitative analysis

Answer: B

Diff: 3 Page Ref: 54

35) The usual reasons for _____ are time pressures and recognition that the marginal benefit of a better solution is not worth the marginal cost to obtain it

- A) satisficing
- B) settling
- C) compromising
- D) rationalizing

Answer: A

Diff: 3 Page Ref: 55

36) A _____ describes the decision and uncontrollable variables and parameters for a specific modeling situation.

- A) statement
- B) model
- C) program
- D) scenario

Answer: D

Diff: 2 Page Ref: 57

37) Which of the following is a study of the effect of a change in one or more input variables on a proposed solution?

- A) Sensitivity analysis
- B) Boundary analysis
- C) Fish bone analysis
- D) Input-output analysis

Answer: A

Diff: 2 Page Ref: 58

38) A _____ can help a decision maker sketch out the important qualitative factors and their causal relationships in a messy decision-making situation.

- A) mathematical map
- B) cognitive map
- C) qualitative map
- D) narrative map

Answer: B

Diff: 2 Page Ref: 62

39) The _____ of a proposed solution to a problem is the initiation of a new order of things or the introduction of change.

- A) method
- B) implementation
- C) approach
- D) style

Answer: B

Diff: 2 Page Ref: 62

40) The Museum of Natural History in Aarhus, Denmark uses _____ to collect detailed information about visitors' use of the exhibits to help determine visitors' behavior to identify high-demand exhibits.

- A) group decision systems
- B) algorithms
- C) RFID
- D) expert systems

Answer: C

Diff: 2 Page Ref: 71

41) _____ is synonymous with the whole process of management.

Answer: Decision making

Diff: 1 Page Ref: 41

42) A _____ is a simplified representation or abstraction of reality.

Answer: model

Diff: 1 Page Ref: 44

43) _____ are the descriptive representations of decision-making situations that we form in our heads and think about.

Answer: Mental models

Diff: 2 Page Ref: 44

44) The _____ phase in decision making involves scanning the environment and collecting information.

Answer: intelligence

Diff: 2 Page Ref: 46

45) Problem _____ is the conceptualization of a problem in an attempt to place it in a definable category, possibly leading to a standard solution approach.

Answer: classification

Diff: 3 Page Ref: 49

46) The process of modeling is a combination of art and science. As an art, a level of creativity and finesse is required when determining what simplifying _____ are appropriate and helpful.

Answer: assumptions

Diff: 2 Page Ref: 50

47) A _____ describes the alternatives a manager must choose among, e.g., like how many cars to deliver to a specific rental agency or how to advertise at specific times.

Answer: decision variable

Diff: 2 Page Ref: 50

48) A _____ is a model that prescribes how a system should operate.

Answer: normative model

Diff: 2 Page Ref: 51

49) _____ may also involve simply bounding the search for an optimum by considering fewer criteria or alternatives or by eliminating large portions of the problem from evaluation.

Answer: Suboptimization

Diff: 3 Page Ref: 53

50) A _____ is extremely useful in DSS for investigating the consequences of various alternative courses of action under different configurations of inputs and processes.

Answer: descriptive model

Diff: 2 Page Ref: 54

51) _____ is the imitation of reality and has been applied to many areas of decision making.

Answer: Simulation

Diff: 1 Page Ref: 54

52) Another descriptive decision-making model is the use of _____ to describe a decision-making situation. It is extremely effective when a group is making a decision and can lead to a more common frame.

Answer: narratives

Diff: 2 Page Ref: 54

53) _____ is a willingness to settle for a satisfactory solution that is, in effect, suboptimizing.

Answer: Satisficing

Diff: 2 Page Ref: 55

54) Aside from estimating the potential utility or value of a particular decision's outcome, the best decision makers are capable of accurately estimating the _____ associated with the resultant outcomes resulting from making each decision.

Answer: risk

Diff: 1 Page Ref: 56

55) A _____ asks a computer what the effect of changing some of the input data or parameters would be.

Answer: what-if analysis

Diff: 2 Page Ref: 58

56) The model is the critical component in the decision-making process, but one may make a number of errors in its development and use. _____ the model before it is used is critical.

Answer: Validating

Diff: 1 Page Ref: 57

57) A(n) _____ is a step-by-step search in which improvement is made at every step until the best solution is found.

Answer: algorithm

Diff: 2 Page Ref: 58

58) _____ is the critical act of decision making when the actual decision and commitment to follow a certain course of action are made.

Answer: Choice

Diff: 1 Page Ref: 58

59) A data warehouse can support the intelligence phase by continuously monitoring both internal and external information, looking for early signs of problems and opportunities through a Web-based enterprise information portal called a(n) _____.

Answer: dashboard

Diff: 2 Page Ref: 60

60) Much of the information used in seeking new opportunities is _____, or soft.

Answer: qualitative

Diff: 1 Page Ref: 60

61) Discuss the importance of decision style.

Answer: Decision style is the manner in which decision makers think and react to problems. This includes their cognitive response, their values, beliefs, and perceptions. These factors can vary greatly amongst individuals; as a result decisions can vary greatly.

Diff: 1 Page Ref: 42

62) Describe the three classifications of models.

Answer:

- *Iconic*. An iconic model is a physical replica of a system, usually on a different scale.
- *Analog*. An analog model is more abstract than an iconic model. It is a model that behaves like a system but does not physically look like the system.
- *Mathematical*. The complexity of relationships in many organizational systems cannot be represented by icons or analogically because such representations would soon become cumbersome, and using them would be time-consuming. Therefore, more abstract models are described mathematically.

Diff: 2 Page Ref: 44

63) List five benefits of using models.

Answer:

- Model manipulation is easier than manipulating the real system.
- Models enable compression of time.
- The cost of model analysis is less than the cost of a similar experiment using the real system.
- The cost of making mistakes during the trial-and-error experiment is less using a model.
- Models enable managers to estimate the risk of their actions.
- Mathematical models enable analysis of a large number of possible solutions.
- Models enhance learning and training.
- Models are readily available over the Web.
- There are many Java applets that readily solve models.

Diff: 2 Page Ref: 45

64) Briefly describe Simon's four phases of decision making.

Answer:

- *Intelligence phase.* Reality is examined, and the problem is identified and defined.
- *Design phase.* A model that represents the system is constructed by making assumptions that simplify reality. The model is then validated, and criteria are determined for evaluation of the alternative courses of action that are identified.
- *Choice phase.* Select a proposed solution to the problem.
- *Implementation phase.* Successful implementation results in solving the real problem. Failure leads to a return to an earlier phase of the process.

Diff: 1 Page Ref: 46

65) Briefly describe the four steps in the intelligence phase of decision making.

Answer:

- *Problem identification.* The intelligence phase begins with the identification of organizational goals and objectives related to an issue of concern, and determination of whether they are being met.
- *Problem classification.* Problem classification is the conceptualization of a problem in an attempt to place it in a definable category.
- *Problem decomposition.* Many complex problems can be divided into subproblems. Solving the simpler subproblems may help in solving the complex problem.
- *Problem ownership.* A problem exists in an organization only if someone or some group takes on the responsibility of attacking it and if the organization has the ability to solve it.

Diff: 2 Page Ref: 48

66) Briefly describe problem decomposition and its benefits.

Answer: Many complex problems can be divided into subproblems. Solving the simpler subproblems may help in solving the complex problem. Also, seemingly poorly structured problems sometimes have highly structured subproblems. Just as a semistructured problem results when some phases of decision making are structured while other phases are unstructured, so when some subproblems of a decision making problem are structured with others unstructured, the problem itself is semistructured. Decomposition also facilitates communication among decision makers.

Diff: 2 Page Ref: 49

67) Describe the three assumptions of rational decision makers used in Normative decision theory.

Answer:

- Humans are economic beings whose objective is to maximize the attainment of goals; that is, the decision maker is rational. (More of a good thing [revenue, fun] is better than less; less of a bad thing [cost, pain] is better than more.)
- For a decision-making situation, all viable alternative courses of action and their consequences, or at least the probability and the values of the consequences, are known.
- Decision makers have an order or preference that enables them to rank the desirability of all consequences of the analysis (best to worst).

Diff: 2 Page Ref: 52

68) Compare the normative and descriptive approaches to decision making.

Answer: Normative refers to models that tell you what you should do. These are prescriptive models that usually utilize **optimization**.

Descriptive models are those that tell you "what-if." These are usually **simulation** models.

Diff: 1 Page Ref: 51, 54

69) Discuss why scenarios play an important role in management support systems.

Answer:

- They help identify opportunities and problem areas.
- They provide flexibility in planning.
- They identify the leading edges of changes that management should monitor.
- They help validate major modeling assumptions.
- They allow the decision maker to explore the behavior of a system through a model.
- They help to check the sensitivity of proposed solutions to changes in the environment as described by the scenario.

Diff: 2 Page Ref: 57

70) Describe 3 findings about decision making in the Digital Age.

Answer: More decisions are being made in less time.

Respondents are missing opportunities.

Many feel as if they are losing the race.

Many barriers to speed are human.

IT clearly has a widespread influence.

Sources of information are constantly changing.

Decision-making amnesia is rampant. Organizations are not good at preserving their decision-making experiences.

Diff: 2 Page Ref: 61