Chapter 2: Project Identification and Selection

Multiple Choice

1. The person who identifies the business value that can be gained from using information technology is called the _____.
    a. manager
    b. project sponsor
    c. staff member
    d. system analyst
    e. system request

    Ans: b
    Response: See page 42

2. In order to approve a system request, the approval committee must know
    a. all of the details of the ultimate system to be developed.
    b. the high level functionality of the system.
    c. what the screens and reports will look like in the final system.
    d. who the end users of the system will be and exactly how they will use it in their jobs.
    e. all of the above.

    Ans: b
    Response: See page 43

3. _____ value can be quantified during the project initiation phase.
    a. Expected
    b. Tangible
    c. Intangible
    d. Real
    e. Salvage

    Ans: b
    Response: See page 44

4. _____ is the process of examining the technical, economic, and organizational pros and cons of developing a new system.
    a. Committee approval

b. Feasibility analysis
c. Functionality determination
d. Risk analysis
e. System request

Ans: b
Response: See pages 45-46

5. Most system requests include all of the following except _____.
   a. business need
   b. business requirements
   c. project sponsor
   d. project manager
   e. business value

Ans: d
Response: See page 45

6. The four elements commonly found on a system request are _____.
   a. economic, organizational, technical, and operational feasibility
   b. project sponsor, business need, business requirements, and business value
   c. risk analysis, familiarity, project size, and cost-benefit analysis
   d. training, software, installation, and equipment
   e. upgrades, licensing fees, repairs, and charges

Ans: b
Response: See page 45

7. Suppose a proposed new financial reporting system for the AMF Biotech Corporation must be completed by the start of the next fiscal year in order to comply with new government regulations. This information should be included as part of the _____ section of the system request.
   a. business need
   b. business value
   c. business requirements
   d. special issues or constraints
   e. none of the above

Ans: d
Response: See page 45

8. Explaining “the business capabilities of the information system” is written in the _____ section of the system request.
    a. business need
    b. business value
    c. business requirements
    d. project need
    e. special issues

    Ans: c
    Response: See page 45

9. Feasibility analysis may be defined as a(n)_____.
    a. assessment of ability of the ultimate users of the system to accept the system and incorporate it into the ongoing operations of the organization
    b. determination of the extent to which the system can be technically designed, developed, and installed
    c. guide to determining whether to proceed with a project
    d. identification of only the costs and benefits associated with the project
    e. none of the above

    Ans: c
    Response: See pages 44-45

10. Which of the following factors could be included in a technical risk assessment?
    a. Cost of a new Web server
    b. Cost of hiring a Webmaster
    c. No previous experience with Java within the IS department
    d. Some fear of job loss among order entry department personnel
    e. All of the above

    Ans: c
    Response: See pages 46-47

11. Which of the following factors would tend to increase the technical risk of a project?
    a. familiarity with the technology
    b. large project size
    c. creating an application that is familiar to the users and analysts
    d. small project size
    e. the number of other applications under development in the firm

    Ans: b
    Response: See pages 46-47

12. _____ feasibility is determined by identifying costs and benefits associated with the system.
    a. Economic
    b. Functional
    c. Organizational
    d. Intangible
    e. Technical

    Ans: a
    Response: See page 47-48

13. Examples of development costs include all EXCEPT _____.
    a. consultant fees
    b. hardware expenses
    c. salaries for the project team
    d. software licensing fees
    e. none of the above

    Ans: d
    Response: See page 48

14. Operational costs that are examined during feasibility analysis include _____.
    a. data conversion cost
    b. development training
    c. user training
    d. equipment upgrades
    e. initial consultant fees

    Ans: d Response: See page 48

15. The calculation that measures the amount of money an organization receives in return for the money it spends is called the _____.
    a. cash flow
    b. net present value
    c. total investment
    d. tangible costs
    e. return on investment

    Ans: e
    Response: See page 51

16. The level of acceptance by the users of a system and the extent to which the new system will be incorporated into the operations of the organization are expressed in the _____ feasibility.
    a. economic
    b. familiarity
    c. functional
    d. organizational
    e. technical

    Ans: d
    Response: See page 56

17. The project champion is a(n)_____.
    a. high-level IS executive who is usually but not always the project sponsor who initiated the system request
    b. mid-level IS manager who has the responsibility of controlling and directing the development process
    c. high-level non-IS executive who is usually but not always the project sponsor who initiated the system request
    d. senior member of the user group who participated in the RAD sessions
    e. none of the above

    Ans: c
    Response: See page 56

18. Peter is the vice president of accounting and finance. For the past year he has solely provided the resources necessary to get the just-in-time accounting system through the planning and analysis phases of the SDLC. Other managers have openly stated that the JIT system is not worth the investment. The SEC has just placed Peter under investigation for insider trading and the board has asked him to resign. This project is failing _____ feasibility analysis.
    a. organizational
    b. champion
    c. functional
    d. economic
    e. technical

    Ans: a
    Response: See pages 56-57

19. If end users feel fearful or threatened by a proposed new system, this factor should be included as a part of the _____.
    a. economic feasibility assessment
    b. organizational feasibility assessment

c. system proposal
d. system request
e. technical feasibility assessment

Ans: b
Response: See page 57

True/False

1. Familiarity with the application and technology are major factors considered under economic feasibility.

   Ans: False
   Response: See pages 48-49

2. Cost benefit analysis identifies the financial costs and benefits associated with a systems project.

   Ans: True
   Response: See page 48

3. To identify the costs and benefits related to the computer technology for a project the systems analyst should rely on the business users.

   Ans: False
   Response: See page 48

4. Happy customers is a tangible cost that can be included in a cost-benefit analysis.

   Ans: False
   Response: See page 48-49

5. A 20% increase in sales volume is a tangible benefit that can be included in a cost-benefit analysis.

   Ans: True

Response: See page 49

6. A limitation of a formal cost-benefits analysis is that it contains the costs and benefits for just one year.

   Ans: False
   Response: See pages 49-50

7. A high return on investment (ROI) results when benefits far outweigh the cost of a new project or information system.

   Ans: True
   Response: See page 51

8. How well a system is accepted by the users and incorporated into the ongoing operations of the business is defined in the technical feasibility.

   Ans: False
   Response: See page 52-53

9. Project size is an important consideration in technical feasibility. Larger projects create more risk, both because they are more complicated to manage and because there is a greater chance that some important system requirements will be overlooked or misunderstood.

   Ans: True
   Response: See page 47

10. Economic feasibility includes an assessment of financial impact in four categories: (1) development costs, (2) operational costs, (3) tangible benefits, and (4) intangible costs and benefits.

    Ans: True
    Response: See page 48

11. The return on investment (ROI) should be used as the sole indicator of a project's worth because it considers the end points of the investment, not the cash flow in between.

Ans: False
Response: See pages 51-52

12. User participation should be promoted throughout the development process to make sure that the final system will be accepted and used.

    Ans: True
    Response: See pages 56-57

13. Economic feasibility is determined by identifying costs and benefits associated with the system, assigning values to them, and then calculating the cash flow and return on investment for the project.

    Ans: True
    Response: See page 48

14. The champion is a high-level IS executive who initiates the system request and supports the project by providing time, resources, and political support within the organization by communicating the importance of the system to other organizational decision makers.

    Ans: False
    Response: See page 57

15. Economic feasibility focuses on whether the system can be built by examining the risks associated with the users' and analysts' familiarity with the application, familiarity with the technology, and project size.

    Ans: False
    Response: See pages 48-

16. It is not necessary to assign dollar values to intangible costs and benefits; it is almost impossible to come up with reasonable numbers for all of the costs and benefits that haven't happened yet.

    Ans: False
    Response: See page 50

17. Project initiation begins when the project sponsor identifies business value that can be gained by using information technology.

    Ans: True
    Response: See page 42

20. System requests often include the project team members including the project manager and the analysts.

    Ans: False
    Response: See page 45

21. A feasibility analysis includes whether the project has been permitted by the CIO of the company.

    Ans: False
    Response: See pages 44-45

22. The feasibility analysis helps the approval committee determine whether or not to proceed with a project.

    Ans: True
    Response: See page 44-45

23. Technical feasibility focuses on whether the system can be built by examining the risks associated with the application.

    Ans: True
    Response: See page 46-47

24. Lauren, a systems analyst, is concerned that she and the end-users at her company do not have experience with a new scanner technology that will soon be implemented. This identified risk falls under economic feasibility.

    Ans: False
    Response: See page 46-47

25. Nicole has identified development and operational costs for a soon-to-be built information system. Her findings will be listed under economic feasibility in the analysis report.

    Ans: True
    Response: See page 48

26. Development costs that are examined during feasibility analysis include costs for software licenses and software upgrades.

    Ans: False
    Response: See page 49

27. Natalie has been asked by her project manager to list the possible intangible benefits for a new system. Her list will include reduced expenses for the company.

    Ans: False
    Response: See page 49

28. ROI calculations do not consider the present value of future money.

    Ans: True
    Response: See pages 51-53

29. Organizational feasibility can be evaluated by conducting a(n) stakeholder analysis.

    Ans: True
    Response: See page 56

30. Kelly Smith, the vice president of marketing, has provided resources and political support for the new production management information system. She has acted as the project manager for the project.

    Ans: False
    Response: See page 56

31. The person or group that funds a project and enthusiastically promotes the project throughout the organization is the project champion.

    Ans: True
    Response: See page 56-57

32. The organizational management of a business is involved in hands-on activities related to the project.

    Ans: False
    Response: See page 57

33. During organizational feasibility analysis the system users are the stakeholders that are responsible for providing enough budget and promoting the project.

    Ans: False
    Response: See page 57

34. System users are stakeholders who perform hands-on activities related to the project.

    Ans: True
    Response: See page 57

35. Present value calculation takes inflation and time into account.

    Ans: True
    Response: See page 51-52

36. The formula for net present value (NPV) is the ratio of (Total benefits – Total Costs) to Total Costs.

    Ans: False
    Response: See page 52

37. Calculating the break-even point helps in understanding how long it will take before the system creates real value for the organization.

    Ans: True

Response: See page 53

38. Determining whether the new system will be compatible with the existing technology that already exists in the organization is part of the organizational feasibility study.

Ans: False
Response: See page 47

Short Answer

1. Economic feasibility includes an assessment of financial impacts in four categories. What are these four financial categories and how are values assigned to each?

Ans: The four financial categories of an economic feasibility are development costs, operational costs, tangible benefits, and intangible benefits and costs. Development costs are one-time-only costs that are incurred during the construction of the system, such as the salaries of the project team, and hardware and software expenses. Operational costs are the recurring variable costs that are required to operate the system for its lifetime. Tangible benefits are the revenues and cost savings that the system enables the organization to collect or avoid. Tangible benefits include items such as increased sales and reductions in staff. Intangible benefits and costs are difficult to put into hard numbers. Examples of intangibles include improved customer service and a decrease in goodwill.

To assign values for these financial categories it is normally best to rely on the people who have the best understanding of them. Costs and benefits related to technology can be provided by the IS group or external consultants. Business users, such as sales managers or plant managers, can develop the numbers associated with the business. It is more difficult to apply values to intangible costs and benefits. Some organizations list intangible cost and benefits without values other attempt to provide projection based on estimates. An example of an intangible projection based on an estimate is that an increase in customer service may result in a 10% decrease in customer complaints. A 10% decline in phone calls will decrease the $200,000 cost of the customer service phone system to $180,000 per year.
Response: See pages 48-56

2. Jane, the head nurse on the surgery recovery floor, is going to place a request for a system that will create a report from data already in the patient record system and print this report to printers located just outside each of 12 patient's rooms and the central nurses station. Jane feels that a graphical report that combines the patient record of pain and pain medication received is absolutely necessary for the doctors and nursing staff to make proper medical decisions concerning patient recovery. Nurses already record the date, time, and severity of pain each time the patient complains or notifies them of discomfort. The pharmacy nurse records the amount of pain medication administered to each patient immediately after administration. Jane feels that combining these two pieces of information will improve medical decision making and provide better care to the patient. In addition, this method will increase the accuracy of reporting and reduce cost. Assist Jane by completing a System Request.

Ans:
Project Name: Patient record of pain and pain medication received Report

Project Sponsor: Jane, Head Nurse, Surgery Recovery

Business Need: Doctors and Nurses need to know at the bedside amount of pain a patient is having and a record of the amount of pain medication the patient has received.

Business Requirements: The patient record of pain and pain medication received report should present graphically the time, date and severity of pain for each occurrence based on the patient's notification and the amount of pain medication received from the pharmacy nurse.

Business Value:
Tangible: Reduced costs and increase accuracy.

Intangible: Combining these two pieces of information will improve medical decision-making and provide better care to the patient.

Response: See pages 44-46

3. Jane, the head nurse on the surgery recovery floor, is going to place a request for a system that will create a report from data already in the patient record system. This report should be sent to new printers (cost per printer is approximately $2,000) located just outside each of 12 patient's rooms and the central nurse's station. Jane feels that a graphical report that combines the patient record of pain and pain medication received is absolutely necessary for the doctors and nursing staff to make proper medical decisions concerning patient recovery. Nurses already record the date, time, and severity of pain each time the patient complains or notifies them of discomfort. The pharmacy nurse records the amount of pain medication administered to each patient immediately after administration. Jane feels that combining these two pieces of information will improve medical decision making and provide better care to the patient. The IS manager has approved $50,000 for the development of the system and estimates that maintaining the system for the next five years will cost $2,000 per year. In addition, this method will increase the accuracy of reporting by 10% per year for three years and reduce pharmacy costs (cost of pain reducing drugs) by 15% in the first year of introduction. Current expenses credited to inaccurate data gathering are $100,000 per year. Pharmacy costs are currently $10 million.

    Identify the costs and benefits in the four financial categories assessed during a feasibility analysis.

Ans: The intangible benefits for the new system are “improved medical decision making” and “better care to the patient.”

The tangible benefits for the new system are increased accuracy of reporting by 10% per year for three years and reduced pharmacy costs by 15% in the first year of introduction.

The new system's development costs are the price of 12 printers at $2,000 each and $50,000 for the software development.

The operational costs are estimated at $2,000 per year for next five years.
Response: See pages 48-56

4. Revenue estimates for CD Selection's new Internet music business were computed using three different methods. What is the purpose and value of performing so many computations in determining these estimates?

Ans: In this case, the new system under consideration was an entirely new line of business for the company - sales of product via the Internet. Because this is essentially a new business venture made possible by Internet technology, it was not a straightforward task to project expected revenues. None of the previous business models (such as the opening of a new store) really applied. Therefore, it was essential to use a variety of approaches to generate revenue estimates. A range of estimates could then be established; conservative projections would fall in the low end of the range, while optimistic estimates would fall in the high end of the range. There is far too much uncertainty in this situation to rely on one method of revenue estimation alone.
Response: See pages 48-56

5. The feasibility study is performed during project initiation. How can this feasibility assessment be accurate so early in the project? Explain.

Ans: The feasibility assessment performed during project initiation is admittedly going to be imprecise. There will be a great deal of uncertainty about many of the issues included in the first feasibility study. It is essential, however, for the project team to address all the issues required in the feasibility study even at an early stage in the project. That way, the team becomes more familiar with the nuances of the specific project, and is alert to new information that will have an impact on the project's feasibility. The feasibility assessment should be modified throughout the project to ensure that new information is incorporated into the analysis as it becomes available. It is certainly possible that a system that once appeared feasible becomes infeasible at a later time because of new information that is discovered.
Response: See pages 44-48

6. Assigning values to costs and benefits involves making some difficult predictions of the future. How can the project team improve the accuracy of these estimates?

Ans: There are several things that can improve the accuracy of cost and benefit estimates. Most importantly, the project team should contact those persons or groups who are most likely to have accurate information about the factor under study. For example, the organization's market researchers or a marketing research consulting firm should be contacted to provide sales projections rather than the project team developing its own. Another way to improve estimates is to keep detailed records about estimates made for previous projects. Those project estimates can be compared to 'what really

happened,' and the estimating process can be improved by learning from previous successes and failures. A third way to improve estimates is to use a variety of approaches and assumptions in the estimating process. This can help the project team avoid the inadvertent omission of key factors in the analysis.
Response: See pages 48-56

7. Compare and contrast the Cash Flow, Return on Investment, and Net Present Value methods of assessing a project's economic feasibility.

Ans: All three methods require that initial and annual costs and benefits be projected for the expected life of the system (usually considered 3-5 years). In the Cash Flow method, all costs and benefits are totaled over the system's life, and the net benefits are computed. The higher the net benefit figure, the more desirable the project. The Return on Investment method divides the total net benefits over the system's life by the total costs of the system. This ratio of net benefits to total costs indicates a rough return on investment figure, and the higher the ratio, the more positive the project. The Net Present Value method discounts the initial and annual costs and benefits to their present value equivalents using a required rate of return factor, then compares the present value of total benefits to the present value of total costs. If this figure is zero or more, the project is considered viable. Although all three methods are based on the same cash inflow and outflow projections, the Cash Flow and Return on Investment methods do not consider the timing of the cash flows or the time value of money. Therefore, the Net Present Value method is preferred from a financial standpoint.
Response: See pages 48-56

8. Explain the role and interests of the project champion, organizational management, and end users regarding a new system project. How will each impact the organizational feasibility of the project?

Ans: The project champion serves as a highly visible promoter of the system. The project champion plays an important role in generating excitement and interest in the system, and often smoothes the way politically for the new system's introduction in the organization. There have been many instances of an otherwise viable systems development project being derailed due to the departure of the project champion from the organization. Organizational management has an interest in seeing that resources are used effectively in the project and that a successful system is produced. By showing support for the system, organizational management can help encourage the adoption of the new system upon implementation. Weak or inconsistent management support has contributed to the failure of many systems projects. End users are the recipients of the new system and will be most affected by it on a daily basis. If end users view the system as an improvement of their work life, they will support the new system. If end users are fearful or feel threatened by the new system, they will resist the new system. Two ways to gain end user support are to involve them in the development of the system, and to provide training and education that helps prepare them for the new work environment.
Response: See pages 56-57

9. Why is it important for systems developers to consider the area of organizational politics when creating a new system?

Ans: It is likely that a new information system will create a change in the power structure of a firm. The text quotes Machiavelli about the difficulties that will be encountered when a "new order of things" is created, and that is certainly what a large number of new systems do in organizations. A systems developer should be aware of the changes that the system will cause in the organization and plan accordingly.
Response: See pages 56-57

10. Explain different sections of a system request.

Ans: System request consists of the following sections: Project Sponsor, Business Need, Business Requirements, Business Value, Special Issues or Constraints. Project sponsor is the person who initiates the project and who serves as a contact on the business side. Business need articulates the reasons on why the system is needed, while business value summarizes the tangible and intangible benefits that the organization may receive from the proposed system. Business requirements summarize what the system functionality should be at a high level. Special issues list constraints such as specific deadlines or other issues that the approval committee must take into consideration.
Response: See page 45

11. Explain the three different aspects of a feasibility analysis.

Ans: Feasibility analysis includes technical, economic and organizational feasibility. Technical feasibility answers the question "Can the organization build the system?" It considers issues such as organization's familiarity with technology, familiarity with the application, project size and compatibility. Economic feasibility answers the question "Should the organization build the system?" It considers issues such as development costs, annual operating and support costs for the system, annual benefits and intangible costs and benefits. Finally, organizational feasibility addresses the question "If the system is built, will it be used effectively in the organization?" Organizational feasibility is often conducted by an analysis of the stakeholders: users, organization management and the project champion.
Response: See pages 44-46

12. Identify the seven steps involved in conducting the economic feasibility.

Ans: (1) Identify costs and benefits (2) Assign values to costs and benefits (3) Determine cash flow (4) Determine net present value (5) Determine return on investment (6) Calculate break-even point (7) Graph break-even point
Response: See page 49

13. Explain the role of the project champion.

Ans: The project champion is a high-level non-IS executive who is usually but not always the person who created the system request. The champion supports the project by providing time, resources, and political support within the organization. The champion effectively communicates the importance of the project to organizational decision makers. Often more than one project champion is desirable, to account for the possibility that the champion may leave his/her current job within the organization.
Response: See page 57

14. Explain four different dimensions that a technical feasibility analysis should consider.

Ans: Technical feasibility is concerned with the question "Can we build it?" To answer this question, the following four dimensions should be evaluated: (1) familiarity with the application (2) familiarity with technology (3) project size, and (4) compatibility. *Familiarity with the application* is an important source of risk because, if the analysts are not familiar with the application, there is a high probability that the system requirements and opportunities for improvements may be misunderstood. In addition, construction of a new system is more risky than enhancing an existing system. *Familiarity with technology* --- or lack there of --- in an organization can increase the risk of the project. If the technology required to complete the project was never used before in the organization, there is a high probability that it will lead to unexpected delays for the project. The larger the *project size*, the greater the chance that some important aspects of the system may have been missed or misunderstood. Larger projects also pose challenges in project management. Finally, the extent to which the new system will be *compatible* with the existing technology and infrastructure of the organization should be considered in technical feasibility analysis. If the new system does not integrate well with the existing technological environment and infrastructure, it increases the risk of the project.
Response: See page 46-47