Turner/Accounting Information Systems, 3e
Solutions Manual
Chapter2

Concept Check

1. d
2. c
3. b
4. c
5. a
6. b
7. b
8. c
9. c
10. c
11. b
12. d

Discussion Questions

13. (SO 1) *What is the relationship between business processes and the accounting information system?* As the systematic steps are undertaken within a business processes, the corresponding data generated must be captured and recorded by the accounting information system.

14. (SO 1) *Why is it sometimes necessary to change business processes when IT systems are applied to business processes?* When IT systems are applied to business processes, some of the detailed transaction data may no longer be taken from paper-based source documents, and manual processing may no longer be needed to summarize and post that data. Accordingly, some of the related manual steps within the business process can be eliminated or changed.

15. (SO 2) *Are manual systems and processes completely outdated?* No, manual systems and business processes are not completely outdated. Manual records and tasks may still be involved in the business processes of even the largest and most sophisticated accounting information systems.

16. (SO 2) *What is the purpose of source documents?* Source documents capture the key data of a transaction, including date, purpose, entity, quantities, and dollar amounts.

17. (SO 2) *What are some examples of turnaround documents that you have seen?* An example of a turnaround document, as described in the chapter, is a credit card statement, where the statement itself (as received in the mail by the credit card holder) represents the output of the credit card company's accounting information system. When the credit card holder returns the top portion of the statement with his or her payment, it then becomes an input to the company's cash collection process.

18. (SO 2) *Why would the training of employees be an impediment to updating legacy systems?* One of the advantages of legacy systems is that they are well supported and understood by existing personnel who are already trained to use the system. Since those legacy systems are not generally based on user-friendly interfaces and they tend to be use software written in older computer languages, there is likely to be a significant investment of time and human resources required to maintain the system. In addition, legacy systems are often difficult to modify. Employees may be reluctant to forego their investment or to commit additional time in support of an updated system that becomes more challenging to maintain.

    1.

19. (SO 2) *Why is it true that the accounting software in and of itself is not the entire accounting information system?* The accounting software is not the entire accounting information system; rather, it is a tool that supports the organization's unique business processes. The software must often be customized to meet the needs of the organization and to integrate well with the manner in which transactions are processed. The human resources and/or manual records and documents that are part of the business processes are also an integral part of the accounting information system.

20. (SO 2) *How is integration across business processes different between legacy systems and modern, integrated systems?* Integration across business processes within a legacy system is extremely challenging and costly, as those systems are usually not based on user-friendly interfaces that are difficult to modify. It is also difficult to find programmers to perform such tasks. The result is that organizations which integrate business processes between legacy systems typically must resort to enhancements to their existing software or bridging their existing software to new systems or interfaces. On the other hand, modern, integrated systems are based on a single software system that integrates many or all of the business processes within the organization, thus eliminating the coordination and updating efforts required by the older systems.

21. (SO 3) *How does client-server computing divide the processing load between the client and server?* In client-server computing, the processing load is assigned to either the server or the client on the basis of which one can handle each task most efficiently. The server is more efficient in managing large databases, extracting data from databases, and running high-volume transaction processing software applications. The client is more efficient at manipulating subsets of data and presenting data in a user-friendly, graphical-interface environment.

22. (SO 3) *Why do you think the client computer may be a better computer platform for presentation of data?* The client computer is better for presentation of data because it manipulates subsets of data without being bogged down by the processing load of the entire data set. In addition, the client computer maintains presentation software in a user-friendly format for reporting purposes.

23. (S04) *What are the distinguishing characteristics of cloud computing?* Cloud computing is a centralized approached to computing, whereby computing services are outsourced to a third party provider. Accordingly, a company's software and data may reside on the server of the provider. This offers many advantages, including the ability to scale the level of service to the needs of the company, as well as cost savings associated with the reduced infrastructure.

24. (S04) *Why do you think a company would benefit from using cloud computing rather than client server computing?* The primary benefits of cloud computing are in the areas of access, scalability, and cost savings. Companies are likely to benefit from using cloud computing when their employees may need to access and read data from many different locations while using different types of computing devices. In addition, since cloud computing is a pay-for-service model, companies only pay for the level of service they need, so it is not necessary to invest in capacity that may not yet be required. Also, the cost savings result from the reduced infrastructure (including equipment, hardware, software, maintenance, and technical employees).

25. (SO4) *If your personal data were stored on a computer in cloud computing, would you have any concerns about it?* Student responses may vary, and although the risks of cloud computing are discussed in a later chapter, students may identify concerns about security of private data stored in the cloud and access to data in the event of a service interruption.

26. (SO 5) *Why do you think there are different market segments for accounting software?* There are different market segments for accounting software to support the different needs of organizations depending on their size and the complexities of their business processes.

27. (SO 5) *How would accounting software requirements for large corporations differ from requirements for small companies?* Larger companies tend to need more power and functionality from their software systems because of their size and the complexities of their business processes. This may especially be true of large, multinational corporations which need to integrate business processes located all around the globe. Small companies are not likely to need such extensive power and functionality from their systems.

28. (SO 5) *What are some of the differences between ERP systems and accounting software for small companies?* ERP systems are multimodule software systems designed to manage all aspects of an enterprise. The modules (financials, sales,

purchasing, inventory management, manufacturing, and human resources) are based on a relational database system that provides extensive set-up options to facilitate customization to specific business needs. Thus, the modules work together to provide a consistent user interface. These systems are also extremely powerful and flexible. Many of the software systems in the small and mid market categories are not true ERP systems with fully integrated modules; however, these systems assimilate many of the features of ERP systems.

29. (SO 5) *Why would accounting software development companies be interested in expanding their software products into other market segments?* Software development companies and software vendors often attempt to increase the appeal of their software products to more than one market segment when the features of their products may fit the needs of different sized organizations. In addition, there is a trend toward increasing the functionality of existing systems to offer increased flexibility and functionality to meet such diverse needs. Since business organizations make considerable investments in the software products that comprise their accounting information systems, it is not surprising that there is much competition among the companies that provide these systems.

30. (SO 6) *Given the business and accounting environment today, do you think it is still important to understand the manual input of accounting data?* Manual input of data is still important to understand in today's accounting environment. Many business organizations still use some manual processes for reading source documents and keying the relevant information into the accounting information system. Even high-tech point of sale systems require manual processes to input the accounting data contained on bar codes.

31. (SO 6) *What are the advantages to using some form of IT systems for input, rather than manual input?* Using IT systems for input has the advantages of reducing the time, cost, and errors that tend to occur with manual data input.

32. (SO 6) *Why would errors be reduced if a company switched input methods from manual keying of source documents to a bar code system?* With manual input, human efforts are required to write on the source documents and to manually key in the data. Errors tend to occur from time-to-time with such a system. On the other hand, the manual steps of writing and keying are eliminated when using a bar code system, thus reducing the likelihood of error.

33. (SO 7) *In general, what types of transactions are well suited to batch processing?* Batch processing is best suited to applications having large volumes of similar transactions that can be processed at regular intervals, such as payroll.

34. (SO 7) *Why might the time lag involved in batch processing make it unsuitable for some types of transaction processing?* By necessity, batch systems involve a time lag while all transactions in the batch are collected. This means that available information in files will not always be current, as it would be in real-time systems.

Therefore, when constantly up-to-date information is needed by users on a timely basis, batch processing is likely to be unsuitable for transaction processing.

35. (SO 7) *How would real-time processing provide a benefit to managers overseeing business processes?* Real-time processing is beneficial for business managers because it provides for system checks for input errors. Therefore, errors can be corrected immediately, thus increasing the quality of the information for which the manager is held accountable. In addition, real-time systems enhance the efficiency of information availability.

36. (SO 8) *How do internal reports differ from external reports?* Although internal and external reports are both forms of output from an accounting information system, they have different purposes. Internal reports provide feedback to managers to assist them in running the business processes under their control. On the other hand, external reports (such as the financial statements) are used by external parties to provide information about the business organization.

37. (SO 8) *What are some examples of outputs generated for trading partners?* Invoices and account statements are examples of outputs generated for customers; whereas checks and remittance advices are examples of outputs sent to vendors.

38. (SO 8) *Why might it be important to have internal documents produced as an output of the accounting information system?* It is important to produce internal documents as an output of an accounting information system because internal documents provide feedback needed by managers assist them in running the business processes under their control. These internal documents can be customized to allow a manger to “drill down” into the details of the process being managed.

39. (SO 9) *How does documenting a system through a pictorial representation offer benefits?* A pictorial representation of an accounting information system is beneficial because it provides a concise and complete way for accountants to analyze and understand the procedures, processes, and the underlying systems that capture and record the accounting data.

Brief Exercises

40. (SO 1) *Think about your most recent appointment at the dentist’s office. Describe the business process that affected you as the patient/customer. In addition, describe the administrative and accounting processes that are likely to support this business.*

As a patient, you would experience the revenue processes as you receive services from the hygienist and dentist. You would also be affected by the billing and

collections processes when you receive an invoice for services rendered and submit payment for those services.

The dental office would need to have specific steps in place for recording the services provided to each patient so that they can be properly billed and reported. These steps may be very detailed, especially in instances where patient fees must be allocated between dental insurance companies and the patients themselves. There would also need to processes in place for purchasing, as a dentist's office is expected to make regular purchases of supplies as well as to handle the other operating costs of the business. Payroll processes would also be needed to account for the time and pay of each employee in the dentist's office, and fixed asset processes would be needed to support the investments in and depreciation of office furniture and equipment, fixtures, and dental equipment. Finally, it is possible that the business may have administrative processes in place to handle investment, borrowing, and capital transactions. Once these transactions are recorded, the business must have processes in place to post the related data to the general ledger and summarize it in a manner that facilitates the preparation of financial statements and other accounting reports.

41. (SO 2) *Describe the purpose of each of the following parts of a manual system:*

a. *source document* – captures the key data of a transaction, including the date, purpose, entity, quantities, and dollar amounts.
b. *turnaround document* – provides a connection between different parts of the accounting system by serving as the output of one system and the input to another system in a subsequent transaction.
c. *general ledger* – provides details for the entire set of accounts used in the organization's accounting systems.
d. *general journal* – captures the original transactions for non routine transactions, adjusting entries, and closing entries.
e. *special journal* – captures the original transactions for routine transactions such as sales, purchases, payroll, cash receipts, and cash disbursements.
f. *subsidiary ledger* – maintains detailed information regarding routine transactions, with an account established for each trading partner.

42. (SO 2) *Consider the accounting information system in place at an organization where you have worked. Do you think that it was a manual system, legacy system, or an integrated IT system? Describe one or two characteristics of that accounting information system that lead you to your conclusion.*

Student responses are likely to vary greatly, as they may refer to any work experience. Characteristics of manual systems may include paper-based documents and records, and manual processes performed by humans. Characteristics of legacy systems may include older technology including a mainframe computer and the use of software languages such as COBOL, RPG, Basic, and PL1. Characteristics of an integrated IT system include powerful,

technologically advanced computer systems with Internet interfaces, which are typically marked by efficiencies in terms of limited paperwork and user-friendly interfaces.

43. (SO 2) *Suppose that a company wants to upgrade its legacy system, but cannot afford to completely replace it. Describe two approaches that can be used.*

    One approach to updating a legacy system is to use screen scrapers, or frontware, which add modern, user-friendly screen interfaces to an existing system. Another approach is to bridge the legacy system to new hardware and software using enterprise application integration, or EAI.

44. (SO 4) *Both Gmail and iCloud for iTunes were mentioned as examples of cloud computing. Can you describe any other examples of cloud computing?* Student responses are likely to vary greatly, but may include examples such as the following: video and photo storage in the cloud, as well as document storage; online collaboration tools to facilitate groups who hold meetings and/or work on projects requiring participation from multiple locations; online data sharing between trading partners; virtual office space for people who travel or telecommute.

45. (SO 5, 7) *Consider the real world example of Cole Haan presented in this chapter.*

    a. *Use Exhibits 2-3 and 2-4 to help you determine the approximate range of Cole Haan's annual revenues.* Since Cole Haan's ERP system, falls in the High End or Tier 1 market segment, the company's revenues must be over $100 million.

    b. *What are the advantages Cole Haan likely realized as a result of having real-time data available?* The advantages to real-time data processing include:
       - reduced errors, since the system checks inputs and corrects errors immediately
       - more timely information
       - constantly up-to-date data files
       - integrated business processes into a single database so that a single system can be achieved.

46. (SO 6) *Using IT systems to input accounting data can reduce costs, time, and errors. Give an example showing how you think IT systems can lead to these reductions (cost, time, and errors)*. Student responses may vary. The responses below apply to the savings a company would be expected to realize upon implementation of a bar code system as a method of inputting data.

    Using IT systems to input data can help reduce costs, such as when bar code systems at a self-checkout line eliminate the human resource costs of using a checkout clerk.

Using IT systems to input data can help save time, such as when bar code systems at a checkout line can reduce the checkout time to a fraction of the time required to manually record the transaction. This is because it eliminates the manual processes involved in writing data on a source document and/or keying the data into the software system.

Using IT systems to input data can help reduce errors, such as when bar code systems eliminate the duplicate manual processes involved in writing data on a source document and later keying the data into the software system.

47. (SO 8) *Identify whether the following reports would be categorized as trading partner documents, internal documents, internal reports, or external reports:*

    a. *daily cash receipts listing* – internal document
    b. *accounts receivable aging* – internal report
    c. *wire transfer of funds to a vendor* – trading partner document
    d. *customer price list* – trading partner document
    e. *general ledger* – internal report
    f. *statement of cash flows* – external report
    g. *sales invoice* – trading partner document
    h. *production schedule* – internal document
    i. *customer address list* – internal document
    j. *payroll journal* – internal report

48. (SO 8) *Which type of accounting information system reports would likely be prepared most frequently by financial accountants? By managerial accountants?* Financial accounts are most likely to prepare external reports (such as financial statements and other reports provided to external users of the company's accounting information); whereas managerial accountants are most likely to prepare internal reports (such as journals and other reports that provide feedback to managers about their areas of responsibility).

49. (SO 9) *Identify which of the cardinal relationships apply, from the following:*

a. *component part – product*	Many to many
b. *customer – product*	Many to many
c. *employee ID badge – employee*	One to one
d. *employee – supervisor*	One to many
e. *vendor – check*	One to many

Problems

50. (SO 2) *Suppose that a large company is considering replacing a legacy system that is nearing obsolescence. Describe any aspects of this decision that the company should consider*.

When considering whether or not to replace a legacy system, a company should conduct a cost-benefit analysis. A business organization may decide to maintain a legacy system if it determines that the replacement costs would be too high. In such cases, the organization would likely place strong emphasis on the advantages of its legacy system, including its degree of customization and the extent of historical data that it contains which would be difficult to integrate into a new system. On the other hand, if the organization decided to replace its legacy system, it is likely that its reasons included such things as difficulty in supporting the older hardware, software, and programming language of its legacy system, difficulty in integrating the legacy system with newer business applications, and lack of user-friendly interfaces and supporting documentation from the legacy system.

51. (SO 1, 9) *Visit the campus bookstore at your university. From what you see happening at the bookstore, try to draw a process map of how the processes at that store serve students, the customers.*

Refer to the separate Microsoft Excel file "Chapter 2 Solutions Pictorial Representations.xls

52. (SO 5) *Look at Exhibit 2-4 and pick one accounting software product from the midmarket segment and one software product from the tier 1 ERP segment. Using those brand names of software, search the Internet for information about those products*. *Based on your investigation, what are the differences between the two software products you chose? (Hint: To begin your search, you might try examining the following websites. www.accounting-software 411.com , www.findaccountingsoftware.com, and www.2020software.com)*

Student responses are likely to vary greatly, depending upon the software brands selected. However, the modules within the midmarket products may not be fully integrated or may be less complex than the Tier 1 ERP systems.

53. (SO 6) *Using the Internet or other research tool, search for the term "RFID." From the results you find, describe how RFID will be used as an input method*.

RFID stands for radio-frequency identification. RFID technology helps companies identify and manage large lots of goods, typically received and stored in cartons or on skids. The cartons or skids include tags that are encoded with identifying information about the items, their supplier, and their purchase transaction. RFID is used as an input method whereby the tags can be instantly read and recorded by using antennae or battery-operated transmitters and radio waves.

54. (SO 3) *Using the Internet or other research tool, search for the terms "client-server" and "scalable." From the results you find, explain why client-server systems are scalable.*

    Scalable systems have the ability to handle growth or increased capabilities. Thus, client-server systems are deemed to be scalable because of the manner in which tasks are divided. Since client PCs normally accomplish local processing tasks, additional client PCs could be added to the network to handle new or growing subsets of data from the server.

55. (SO 4) *Using the Internet or other research tool, search for the terms "Amazon elastic cloud." Describe what you find. Why do you believe it is called elastic?*

    Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers.

    Amazon EC2's simple web service interface allows users to obtain and configure capacity with minimal friction. It provides complete control of users' computing resources and allows users to run on Amazon's computing environment. Amazon EC2 reduces the time required to obtain and boot new server instances to minutes, allowing users to quickly scale capacity as their computing requirements change. Amazon EC2 provides developers the tools to build failure resilient applications and isolate themselves from common failure scenarios.

    The term "elastic" likely refers to the ability for users to quickly scale capacity both up and down as their computing requirements change. Thus, users can create, launch, and terminate server instances as needed.

Cases

56. *Pictorial representations of a drive-through window at a fast food chain.*

    Student responses are likely to vary, but may be similar to those shown in the Microsoft Excel file "Chapter 2 Solutions Pictorial Representations.xls"

57. *Pictorial representations of a college's parking services processes.*

    Student responses are likely to vary, but may be similar to those shown in the Microsoft Excel file "Chapter 2 Solutions Pictorial Representations.xls"