

SOLUTIONS FOR CHAPTER 1

Discussion Questions

DQ 1-1 *“I just want to be a good accountant, technology does not interest me.”*
Comment on this statement, considering today’s technology environment.

ANS. Possible points that could be made:

- a. Distinguish between an accountant and a bookkeeper. An understanding of accounting software and related technology would enable one to advance beyond entry-level positions.
- b. Without knowledge of computer technology, an accountant can be a bookkeeper/accountant for a small firm that does not use computers *at all*. (With the ubiquitous nature of computers, this has become a weak argument, at best.) More realistically, with the low cost of accounting software, only very select organizations may not benefit from automation. Examples of those organizations would include businesses that sell a low volume of unique products.
- c. Because the ability to access data, present data for decision making, audit an accounting system, and so on are all affected by computer technology, the career path for an accountant will be severely limited by a lack of knowledge of computer technology.
- d. The public accounting profession is competitive and the effective use of technology helps maintain a competitive edge. For example, an auditor can usually complete an audit engagement in less time—and be surer of the findings—than he/she would be without using technology in the audit. This will permit the auditor to charge less for the work and to obtain more clients. And, if the auditor’s findings can be supported, he/she will be less likely to experience legal ramifications (e.g., from the SEC, from stockholders, and so on).
- e. The Sarbanes-Oxley Act of 2002 requires that the CFO (and CEO) sign the financial statements and attest to their accuracy, that companies notify the Securities and Exchange Commission of material events within two days, and that companies file their earnings statements within 35 days of the end of a quarter. All of these requirements have implications for the organization’s accounting information system and the ability of the CFO to understand and monitor its operation.

2 Solutions for Chapter 1

DQ 1-2 *Examine Figure 1.1. Based on any work experience you have had, with which elements are you least comfortable? With which are you most comfortable? Discuss your answers.*

ANS. See DQ 1-3.

DQ 1-3 *Examine Figure 1.1. Based on your college education to date, with which elements are you comfortable? With which are you least comfortable? Discuss your answers.*

ANS. The point of both of these questions (DQ 1-2 and DQ 1-3) is to get the students to see the breadth of coverage of the AIS course and to see how the course will help fill in gaps in their background that they may have. Also, the figure and the discussion should help the student recognize the practical and academic background that needs to be brought forward into this course.

For example, students with practical experience may have a good background in business operations, information processing, and management decision making. Students with computer coursework or practical experience may have background in databases and technology. If the students have completed intermediate accounting, accounting principles and reporting may be familiar.

DQ 1-4 *Why might you have more trouble assessing the success of a not-for-profit organization or federal government entitlement program than you would have judging the success of a business organization?*

ANS. The purpose of this question is to get the students to understand the relationship of “success” and “accomplishing specific objectives.”

The issues are similar for any organization. After we move beyond generally accepted, easily measured objectives, we will have difficulty determining effectiveness. We must establish objectives and criteria or indicators that can measure our success in achieving the objectives.

A business organization either explicitly or implicitly establishes objectives such as market share, profits, and earnings per share. Measuring achievement of these objectives is fairly straightforward.

The objectives for a federal government entitlement program or not-for-profit (NFP) organization are often subjective and may not be acknowledged by all parties. And measures of success may be elusive. For example, are programs for the NFP successful when the number of people assisted is high or when the number is low, or does it depend on the program? The Red Cross helps with disaster relief on a large scale as well as operating smaller programs such as a local blood drive. Or do we measure performance on the basis of program costs per person assisted? Without an acknowledged set of objectives and measurable success criteria, we have difficulty *knowing* we have been effective.

For non-private (governmental) organizations there is some guidance available to directly address this issue. The Government Performance and Results Act of 1993 (P.L. 103-62) was enacted to “provide for the establishment of strategic planning and performance measurement in the U.S. Federal Government.” To comply with this act, the managers of all agencies of the federal government must prepare five-year strategic plans setting forth the goals and objectives that measure mission achievement and the approaches that will be used in achieving those goals. Annual plans must include performance indicators and a statement of how measured values will be verified.

A business, or any nongovernmental organization, may take on broader social responsibilities and establish related objectives. These objectives might include those for environmental impact, treatment of employees, relations with unions, and impact on the surrounding community. Measurement of achievement of such objectives can be problematic.

DQ 1-5 *Why must you have knowledge of a system’s objectives to study that system?*

ANS. With this question, we try to establish the connection between a system’s purpose and its procedures.

Understanding and evaluating a system’s procedures must be studied in light of the system’s objectives. For example, in an accounts receivable process, we periodically send customer statements and follow up on delinquent receivables found in those statements. Why? To ensure timely receipt of all outstanding receivables (i.e., an accounts receivable process objective).

DQ 1-6 *Do you think your accounting education is preparing you effectively to practice accounting? Why or why not? Discuss, from both a short-term (i.e., immediately on graduation) and a long-term (i.e., 5 to 10 years after beginning your career) standpoint.*

ANS. This question is a follow-up to Discussion Questions 1-2 and 1-3. The purpose is to see that some of the skills and areas of study in Figure 1.1 are short-term in focus and some are long-term. For example, accounting and auditing principles, business operations, and events processing are necessary entry-level skills. Management decision making, communications, and systems development and operation may be longer-term skills.

DQ 1-7 *Examine Figure 1.9. Discuss the importance of horizontal information flows and vertical information flows to the daily operations of a manufacturing entity.*

4 Solutions for Chapter 1

ANS. An information system captures and records data as business operations take place. This business event processing or horizontal information flow is the very basis of the AIS. From such horizontal flows, manufacturing entities would communicate between operations and inventory functions to ensure proper levels for current production. Similarly, operations would communicate with sales to ensure that needed products are being produced. The flows may take many forms, such as electronic inquiries or paper reports.

Vertical information flows, derived from the horizontal flows, provide managers with information with which to plan, manage, and control operations. Manufacturing would provide data to be accumulated/summarized and used in vertical flows. The vertical flows then may be used in strategic and/or tactical decisions such as plant expansions or new product decisions. The accountant participates in the processes (summarize, calculate, filter, consolidate, etc.) necessary to produce the vertical flows.

DQ 1-8 *Examine Figure 1.9. Discuss how vertical information flows may be important to the executive director of an organization that is a public charity.*

ANS. To provide direction to a public charity, the executive director needs to know vertically accumulated/aggregated information to provide guidance and accountability for the charity. The director would need to know information such as donor categories for contributions, total donations, total restricted donations, etc. Such information may also be required when attending board meetings and meetings with other constituents such as government agencies. Government agencies may have specific requirements at a considerable level of detail. Generally, most information from a public charity is publicly disclosed and accessible to the news media. The executive director needs to be apprised of anything that may be made public about which there may be questions.

DQ 1-9 *Give several examples not mentioned in the chapter of potential conflicts between pairs of information qualities.*

ANS. *Note:* Pairs discussed in the text include completeness and timeliness, and accuracy and timeliness. This question is open-ended and presents almost unlimited opportunities to analyze the “qualities” of information and to explain them in context rather than merely regurgitating definitions.

Tradeoff	Example
Timeliness versus accuracy and completeness	Timeliness (e.g., accelerating the frequency with which reports are prepared) compromises several other qualities. For example, shortening the delay between the actual shipment and reporting the data related to the shipment produces risks that the reported sales will be inaccurate and/or incomplete.
Validity versus timeliness	The time spent to edit information to ensure its validity may sacrifice the timeliness of the information. For example, we may review all inventory receipts to ensure that all reported receipts represent goods actually received. When the edits are completed, the information may no longer be needed.
Relevance versus accuracy	Unless data is accurate, it may not be relevant for certain decisions. For example, sales recorded in the sales journal must be accurate as to quantity and price. On the other hand, sales reported for sales analysis need not be so accurate.

DQ 1-10 *Regarding financial reporting, which quality of information do you think should be superior to all other qualities? Discuss your answer.*

ANS. In *Statement of Financial Accounting Concepts No. 2: Qualitative Characteristics of Accounting Information*, the Financial Accounting Standards Board (FASB) elevated *understandability* to the status of being the overall goal of financial reporting. According to Concepts Statement No. 2, financial reporting procedures are to be chosen on the basis of their capability to make financial information understandable to the decision maker.

Certainly, the superiority of other qualities might be discussed. For example, in Figure 1.6 in this text, we elevated *decision usefulness* to a position superior to understandability. We did so because we wanted to present a hierarchy germane to all decisions and decision makers and were not as concerned, as was the FASB, that financial information must be understood by a variety of users.

DQ 1-11 *Comparing relevance and reliability, which information quality is most important? Support your answer with examples.*

ANS. *Note:* To answer this question, first review the definitions given in the chapter to make sure to use the terms as they are defined here and not as they might be used in general practice. *Relevance* is defined as “information capable of making a difference in a decision-making situation by reducing uncertainty or increasing knowledge for that particular decision.” *Reliability* is defined (in Exhibit 1.2) as “relates to the provision of appropriate information for management to operate the entity and for management to exercise its financial and compliance reporting responsibilities.”

First, we can say that relevance addresses a decision to be made in terms of reducing uncertainty (or increasing knowledge). The uncertainty being reduced must be relative to the knowledge already possessed by a *particular* decision maker for a *particular* decision. Reliability does not refer to specific decisions (or

decision makers). So, for a specific decision and decision maker, relevance is most important.

Second, we can say that reliability refers to some externally imposed constraints (e.g., regulatory bodies, laws). For example, organizations with stock publicly traded in the United States must adhere to the rules for financial reporting prescribed by the Securities and Exchange Commission and the Financial Accounting Standards Board. Generally Accepted Accounting Principles (GAAP) would, for example, require that historical cost be used to report the dollar value of assets held by an entity. Historical cost information may not be “relevant” for some decisions, but it is “reliable.”

DQ 1-12 *Describe two structured decisions and two unstructured decisions. Discuss the relative amount of structure in each decision.*

ANS. *Structured decisions:* a. Approving credit. b. When and how much inventory to reorder (an example from the chapter). c. Capital budgeting. Decision type *a* probably occurs more often than *b*, and *b* more often than *c*, making decision type *a* more repetitive and probably more structured than *b* (and *b* more than *c*). In addition, the criteria and data used for decision type *a* are probably more certain than they are for *b* (and *b* more certain than *c*).

Unstructured decisions: a. Acquire or merge with another company. b. Select a new product or line of business. c. Select a marketing campaign. As with our list for structured decisions, these types of decisions occur with differing frequency in a typical business. For example, a typical business selects a marketing campaign more frequently than it selects a new product or line of business or merges with another company. And the criteria and data used to decide if and how to acquire another company are probably the most uncertain, which makes that type of decision the most unstructured.

DQ 1-13 *“To be of any value, a modern information process must assist all levels of management.” Discuss.*

ANS. This question addresses the value of an information process. An information process can be of value at each and every level in the organization by providing information useful in making decisions (see Figure 1.6). As the information process provides information possessing qualities useful at higher levels in the organization, it acquires a greater value. However, an information process possesses value by simply monitoring business operations through collecting and recording business events.

Short Problems

SP 1-1 ANS

1. **C, D Note:** Bruce is attempting to accomplish timeliness but is working with a report that lacks relevance because it is out of date.
2. **E Note:** Without a customer order a shipment is not authorized and not genuine.
3. **B Note:** Not all shipments are entered.
4. **A Note:** Every order is recorded (so completeness is achieved) but every order is not recorded correctly (so accuracy is not achieved).
5. **A Note:** Data on some of the picking tickets is incorrect.

SP 1-2 ANS Efficiency of a retailer can be reduced if any of the listed qualities are missing. Time can be lost through searching for nonexistent inventory when the system information is not updated in a timely manner, completely entered, or inaccurately entered. If these qualities are missing, excessive quantities may be stocked, yielding additional costs (such as warehouse and insurance) associated with the excess quantities.

Effectiveness of a retailer can be increased (or decreased) by the level of accuracy, completeness, or timeliness of inventory information. If the information is not updated in a timely manner, there may be stock-outs and lost sales. Incomplete information can cause customers to go elsewhere, if the system indicates insufficient inventory for the customer need, when in reality, receipts were not entered, meaning the information is not complete. Inaccurate information, such as incorrect pricing, can contribute to lost profits for the company. Each of these items can reduce the effectiveness of an organization's ability to provide products to a customer at a profit.

Problems

P 1-1 ANS. Regarding the quote by Robert K. Elliott, the following points could be made:

- As discussed in this chapter, identifying relevant information requires understanding the decision maker and the decision being made.
- Modeling systems and designing systems to obtain needed information is consistent with the role of designer of information systems discussed in this chapter.
- Advising on controls and security and ensuring information reliability are consistent with the role of the accountant as an evaluator of information systems, as discussed in this chapter.
- This chapter makes the point that the accountant must understand a broad context of organizational issues. The portion of this quote that talks about

deploying knowledge includes a number of those contexts, such as strategic planning, marketing, and daily operations.

- The chapter does not disagree with the quote.
- We do think that accountants must provide these services or be marginalized by those who will. And, as discussed in this chapter, the accountant is uniquely positioned and qualified to provide these services. Students may have a variety of opinions here.
- We might also mention that a potential conflict of interest could arise if any accountant (or firm) performs any design or consulting work and also performs attestation for the same client. In fact, SOX Section 201 prohibits a CPA firm that audits a public company from engaging in certain nonaudit services with the same client.

P 1-2 ANS. First, to be qualified to perform such services, the accountant must be familiar with the nonfinancial information being reviewed. To perform an audit of financial statements, for example, the accountant must be familiar with financial accounting theory and practice. To be qualified to perform assurance services, an accountant must be familiar with the subject matter of the engagement. Subject areas may include risk assessment, strategic planning, quality control, process improvement, and customer and product productivity.

Second, to perform an audit, an accountant must be familiar with auditing standards, principles, and practices. Assurance services, on the other hand, may be governed by different standards and will require different skills than those required for an audit. Certainly, the assurance services practitioner will depend more on communication and teamwork skills than ever before. Also, additional evidence gathering, analysis, and information technology skills will be required. Examples of such skills include statistical analysis, market research, and facility with database management systems.

Finally, performing these services can provide an interesting variety of work engagements for the accountant as well as additional sources of revenue.

P 1-3 ANS. For Sarbanes-Oxley–related work within the accountant’s own organization, answers should address documenting systems, performing risk assessment, evaluating internal controls, and so on. For work outside the accountant’s organization (e.g., for clients), answers should address the assistance given to prepare clients for the Section 404 review. Accountants can do such work for their audit clients without violating the requirement that they not undertake consulting for their audit clients, provided they limit the work to documentation and risk assessment. An accountant can help only a *non-audit* client design a system of internal controls to correct control weaknesses. Finally, the auditor will be reviewing the management assertion required under Section 404 during the annual audit. For this work, they will be reading documentation, performing risk assessment, and entering an opinion on the functioning of the system of control.

P 1-4 ANS. *Note:* This solution assumes that the daily and monthly reports are prepared by the central information services function, are provided by software developed and tested by systems development personnel, and are provided to a number of users. It is useful to know which, if any, of the outputs contains historical information and to know the purpose (e.g., decision) for each output. Before going over this problem, an instructor may want to test these assumptions with the class.

Quality	Inquiry	Daily	Monthly
Understandability	User can control format.	User may not be able to control format.	User may not be able to control format.
Relevance	Information may be tailored for the user.	Information may be intended for a number of users.	Information may be intended for a number of users.
Timeliness	Most timely.	Second most timely.	May not be timely for some decisions.
Predictive value/feedback value	User may be able to modify each report to perform “what-if” analysis and to incorporate his/her own earlier expectations.	May not provide for “what-if” analysis and may not incorporate the decision maker’s personal prior expectations.	May not provide for “what-if” analysis and may not incorporate the decision maker’s personal prior expectations.
Neutrality/freedom from bias	A single user’s assessment may not lead to neutral information.	Central control and preparation for multiple users may lead to increased neutrality.	Central control and preparation for multiple users may lead to increased neutrality.
Comparability	Because one user has prepared this information for himself/herself and with little, if any, central control, the information may not be comparable to other information.	Information centrally controlled and provided to a number of users may be comparable to other information.	Information centrally controlled and provided to a number of users may be comparable to other information.
Consistency	Because the manager can formulate each query differently, consistency is suspect.	Centrally controlled reports that have been tested, and change little over time, should provide consistent information.	Centrally controlled reports that have been tested, and change little over time, should provide consistent information.
Validity	Information may not have been checked for validity.	Controls may increase validity of this information.	Controls may increase validity of this information.
Accuracy	Information may not have been checked for accuracy.	Controls may increase accuracy of this information.	Controls may increase accuracy of this information.
Completeness	Least complete.	Average completeness.	Most complete.

10 Solutions for Chapter 1

P 1-5 ANS. Every student's answer will likely be different. Many job listing sources are available. Students may use general sites such as www.monster.com or specific sites for accountants such as www.accounting.com. Governmental sites and sites for specific companies are also available. Many listings will have specific job requirements. The student should list the job requirements, his/her current abilities, and the steps to bridge any gaps. The steps may include college courses, technical courses, certifications, or any other applicable learning experience.

P 1-6 ANS. A wide range of answers are likely, based on the firm interviewed. Most professional organizations have information on what is expected in general (see IFAC#11 or www.aicpa.org). Individual firms may have slightly different expectations. Small firms may have lower (or higher) expectations based on their client base and services offered. Larger firms may have different expectations based on their training programs (possibly lower expectations if they intend to train employees on firm methods and procedures). The expectations may differ significantly based on the level of job discussed.

P 1-7 ANS. This solution will vary based on the current listing of the top technologies.

P 1-8 ANS. This solution will vary based on the current listing of the top technologies.

P 1-9 ANS. An excellent resource for this problem is the AICPA's report, Characteristics and Skills of the Forensic Accountant, available at <http://www.aicpa.org/interestareas/forensicandvaluation/resources/practaidsguidance/downloadabledocuments/forensicaccountingresearchwhitepaper.pdf>

In this document a wide range of skills are identified, including:

- **Simplification of information: which may be accomplished using computer tools such as database extractions (SQL) or summarization and graphics (Microsoft Excel).**
- **Auditing skills: it is impossible to audit an AIS without some knowledge of technology and controls.**
- **Synthesize results of discovery and analysis. Again, frequently graphics.**
- **Research skills: Today, most information is stored electronically, and it is necessary to use technology to identify and access information.**
- **Asset tracing: using online searches of real estate documents and tax payments.**
- **Electronic discovery: It is impossible to extract data from a hard-drive or mobile device for use in a court case without technical expertise.**
- **Internal controls: Many (if not most) are implemented using an organization's AIS.**