CHAPTER 1

ACCOUNTING INFORMATION SYSTEMS: AN OVERVIEW

SUGGESTED ANSWERS TO DISCUSSION QUESTIONS

1.1   The value of information is the difference between the benefits realized from using that information and the costs of producing it. Would you, or any organization, ever produce information if its expected costs exceeded its benefits? If so, provide some examples. If not, why not?

Most organizations produce information only if its value exceeds its cost. However, there are two situations where information may be produced even if its cost exceeds its value.

   a.   It is often difficult to estimate accurately the value of information and the cost of producing it. Therefore, organizations may produce information that they expect will produce benefits in excess of its costs, only to be disappointed after the fact.
   b.   Production of the information may be mandated by either a government agency or a private organization. Examples include the tax reports required by the IRS and disclosure requirements for financial reporting.

1.2   Give an example of how an AIS can improve decision making, and describe the multistep activities involved in the process.

Decision making is a complex, multistep activity: identify the problem, collect and interpret information, evaluate ways to solve the problem, select a solution methodology, and implement the solution. An AIS can provide assistance in all phases of decision making. Reports can help to identify potential problems. Decision models and analytical tools can be provided to users. Query languages can gather relevant data to help make the decision. Various tools, such as graphical interfaces, can help the decision maker interpret decision model results, evaluate them, and choose among alternative courses of action. In addition, the AIS can provide feedback on the results of actions.

An AIS can help improve decision making in several ways:
● It can identify situations requiring management action. For example, a cost report with a large variance might stimulate management to investigate and, if necessary, take corrective action.
● It can reduce uncertainty and thereby provide a basis for choosing among alternative actions.
● It can store information about the results of previous decisions, which provides valuable feedback that can be used to improve future decisions. For example, if a company tries a particular marketing strategy and the information gathered indicates that it did not succeed, the company can use that information to select a different marketing strategy.
● It can provide accurate information in a timely manner. For example, Walmart has an enormous database that contains detailed information about sales transactions at each of its stores. It uses this information to optimize the amount of each product carried at each store.
● It can analyze sales data to discover items that are purchased together, and can use such information to improve the layout of merchandise or to encourage additional sales of related items. For example, Amazon uses its sales database to suggest additional books for customers to purchase.

1.3 **You and a few of your classmates decided to become entrepreneurs. You came up with a great idea for a new mobile phone application that you think will make lots of money. Your business plan won second place in a local competition, and you are using the $10,000 prize to support yourselves as you start your company.**

    a. Identify the key decisions you need to make to be successful entrepreneurs, the information you need to make them, and the business processes you will need to engage in.
    b. Your company will need to exchange information with various external parties. Identify the external parties, and specify the information received from and sent to each of them.

The author turns this question into an in-class group activity. Students are divided up in groups, told to close their books, and given 15 minutes to:

    a. Think through the business processes, key decisions, and information needs issues in their group.
    b. Identify the external users of information and specify the information received from and sent to each of them.

One group is selected to present their answers to the class. The other groups are told to challenge the group's answers, provide alternative answers, and chip in with additional answers not provided by the selected group. Since the group that presents is not selected until after the time has expired, students are motivated to do a good job, as they will be presenting to their peers.

The value of this activity is not in arriving at a "right answer" as there are many right answers and student answers will vary. Instead, it is in thinking through the issues presented in Table 1-2 (business processes, key decisions, and information needs) and Figure 1-1 (interactions with external parties). Student answers should contain many of the things in Table 1-2 and Figure 1-1 as well as others not shown, as a retail operation differs from an application development enterprise.

The author concludes the exercise by having the students turn to Table 1-2 and Figure 1-1 while he emphasizes the need for owners, managers, and employees of organizations to identify the information needed to make key decisions in the company's business processes and the key information interchanges with external parties. All of the data needed to produce this information must be entered into the AIS, processed, stored, protected, and made available to the appropriate users.

While this active learning activity takes more time than a lecture does, it drives the point home much better than a lecture would. It also keeps the students more engaged in the material.

1.4 How do an organization's business processes and lines of business affect the design of its AIS? Give several examples of how differences among organizations are reflected in their AIS.

An organization's AIS must reflect its business processes and its line of business. For example:

- Manufacturing companies will need a set of procedures and documents for the production cycle; non-manufacturing companies do not.
- Government agencies need procedures to track separately all inflows and outflows from various funds, to ensure that legal requirements about the use of specific funds are followed.
- Financial institutions do not need extensive inventory control systems.
- Passenger service companies (e.g., airlines, bus, and trains) generally receive payments in advance of providing services. Therefore, extensive billing and accounts receivable procedures are not needed; instead, they must develop procedures to account for prepaid revenue.
- Construction firms typically receive payments at regular intervals, based on the percentage of work completed. Thus, their revenue cycles must be designed to track carefully all work performed and the amount of work remaining to be done.
- Service companies (e.g., public accounting and law firms) do not sell physical goods and, therefore, do not need inventory control systems. They must develop and maintain detailed records of the work performed for each customer to provide backup for the amounts billed. Tracking individual employee time is especially important for these firms because labor is the major cost component.

1.5 Figure 1-4 shows that organizational culture and the design of an AIS influence one another. What does this imply about the degree to which an innovative system developed by one company can be transferred to another company?

Since people are one of the basic components of any system, it will always be difficult to transfer successfully a specific information systems design intact to another organization. Considering in advance how aspects of the new organizational culture are likely to affect acceptance of the system can increase the chances for successful transfer. Doing so may enable the organization to take steps to mitigate likely causes of resistance. The design of an AIS, however, itself can influence and change an organization's culture and philosophy. Therefore, with adequate top management support, implementation of a new AIS can be used as a vehicle to change an organization. The reciprocal effects of technology and organizational culture on one another, however, mean that it is unrealistic to expect that the introduction of a new AIS will produce the same results observed in another organization.

1.6 Figure 1-4 shows that developments in IT affect both an organization's strategy and the design of its AIS. How can a company determine whether it is spending too much, too little, or just enough on IT?

There is no easy answer to this question. Although a company can try to identify the benefits of a new IT initiative and compare those benefits to the associated costs, this is often easier said than done. Usually, it is difficult to measure precisely the benefits of new uses of IT. Nevertheless, companies should gather as much data as possible about changes in market share, sales trends, cost reductions, and other results that can plausibly be associated with an IT initiative and that were predicted in the planning process.

1.7 Apply the value chain concept to S&S. Explain how it would perform the various primary and support activities.

The value chain classifies business activities into two categories: primary and support.

The five primary activities at S&S:
    a. **Inbound logistics** includes all processes involved in ordering, receiving, and temporarily storing merchandise that is going to be sold to S&S customers.
    b. S&S does not manufacture any goods, thus its **operations** activities consists of displaying merchandise for sale and protecting it from theft.
    c. **Outbound logistics** includes delivering the products to the customer.
    d. **Sales & marketing** includes ringing up and processing all sales transactions and advertising products to increase sales.
    e. **Service** includes repairs, periodic maintenance, and all other post-sales services offered to customers.

The four support activities at S&S:
    a. **Firm infrastructure** includes the accounting, finance, legal, and general administration functions required to start and maintain a business.
    b. **Human resource management** includes recruiting, hiring, training, evaluating, compensating, and dismissing employees.
    c. **Technology** includes all investments in computer technology and various input/output devices, such as point-of-sale scanners. It also includes all support activities for the technology.
    d. **Purchasing** includes all processes involved in identifying and selecting vendors to supply goods and negotiating the best prices, terms, and support from those suppliers.

1.8 **IT enables organizations to easily collect large amounts of information about employees. Discuss the following issues:**

These questions involve traditional economic cost/benefit issues and less well-defined ethical issues.

a. **To what extent should management monitor employees' e-mail?**

Generally, the courts have held that organizations have the right to monitor employees' email. Such monitoring can have disastrous effects on employee morale, however. On the other hand, it might provide legitimate information about group members' individual contributions and productivity.

b. **To what extent should management monitor which websites employees visit?**

Students are likely to argue whether or not this should be done. One potential benefit that could be argued is the likelihood that if employees are aware that they will be monitored they will be less prone to surf the Web for non-work-related uses.

c. **To what extent should management monitor employee performance by, for example, using software to track keystrokes per hour or some other unit of time? If such information is collected, how should it be used?**

Arguments pro and con can be generated about the effects of such monitoring on performance and on morale. Clearly, the specifics of any incentive schemes tied to such metrics are important.

d. **Should companies use software to electronically "shred" all traces of e-mail?**

Arguments can be raised on both sides of this issue. Try to get students to go beyond the legal ramifications of recent news stories and to explore the ethical implications of destroying different kinds of email.

e. **Under what circumstances and to whom is it appropriate for a company to distribute information it collects about the people who visit its website?**

Direct students to the guidelines followed by organizations that certify how various websites use the information they collect. Students are likely to make the argument that personal information is inherently private and sacrosanct. To challenge that view, ask them about the legitimacy of developing and maintaining a reputation. Doesn't that involve the divulgence and sharing of personal information among strangers? Ask the class if it is feasible (or undesirable) to totally prevent or prohibit such sharing of information.

The instructor should also refer the students to Generally Accepted Privacy Principles (GAPP), as one of its criteria concerns sharing information with 3rd parties. The instructor and the students could read the GAPP criterion about sharing data together, and then discuss what they think. Remind the students that GAPP is not regulatory law – just recommended best practice.

SUGGESTED ANSWERS TO THE PROBLEMS

1.1 **IT is changing the nature of accounting and the role of accountants. Write a two-page report describing what you think will be the nature and the value of accounting function in a large company in the future?**

Numerous answers are possible. Several articles addressing this topic have appeared in *Strategic Finance* and the *Journal of Accountancy*.

1.2 Adapted from the CMA Examination

a. **Identify and discuss the basic factors of communication that must be considered in the presentation of the annual report.**

The annual report is a one-way communication device. This requires an emphasis on clarity and conciseness because there is no immediate feedback from the readers as to what messages they are receiving.

The preparer must attempt to identify the users/audience of the report, and to determine their values, beliefs, and needs. Then the preparer can determine the language, i.e., words and phrases that would be appropriate and familiar to the users/audience.

The preparer must also consider the organization of the material in the report. Logical ordering and attractive formatting facilitate the transmission of ideas.

b. **Discuss the communication problems a corporation faces in preparing the annual report that result from the diversity of the users being addressed.**

The different users of annual reports have differing information needs, backgrounds, and abilities. For some users, the annual report may serve as an introduction to the company and/or the only significant information about the company. By using the report to communicate to all users, the problems the corporation faces include the following.

- In an attempt to reach several audiences, a company may include information for each audience. Consequently, the annual report may grow in size and complexity to the point where it contains more information than many users want to receive or are able to comprehend, i.e., information overload. In some cases, technical concepts may be reduced to concepts that are more common; this reduces precision and conciseness thereby leading to more generalizations.

- Care must be taken in the presentation of information. Words and phrases familiar to one user group may not be understood by those in other user groups. Graphic displays that are meaningful to some may be meaningless to others.

c. **Select two types of information found in an annual report, other than the financial statements and accompanying footnotes, and describe how they are helpful to the users of annual reports.**

Other than the financial statements and accompanying footnotes, an annual report provides information concerning

- Management's discussion and analysis of results.
- Organizational objectives, strategies, and management's outlook for the future.
- Board of Directors members and the officers and top management of the organization.
- Segment data and performance information.
- New initiatives and research information.
- Recent stock price history and stock information.

Students will have many and varied answers as to how the information is helpful, which should lead to a rich class discussion. This discussion can be combined with the discussion of part e.

d. **Discuss at least two advantages and two disadvantages of stating well-defined corporate strategies in the annual report.**

Stating well-defined corporate strategies in a company's annual report accomplishes the following:

Advantages:
- Communicates the company's plan for the future and resolves any disparate issues.
- Provides a vehicle for communicating the company's strengths.
- Builds investor confidence and portrays a positive image.

Disadvantages:
- Locks management into fulfilling stated objectives and strategies, causing inflexibility.
- Communicates to unintended users who could put the company at risk (i.e., competitors).

e. **Evaluate the effectiveness of annual reports in fulfilling the information needs of the following current and potential users: shareholders, creditors, employees, customers, and financial analysts.**

Annual reports fulfill users' information needs as discussed below.

1. Shareholders. Annual reports meet the statutory requirement that publicly held corporations are to report annually to stockholders and report on the stewardship of management to both current and potential stockholders. The annual report gives shareholders financial and operating information such as income from operations, earnings per share, the Balance Sheet, Cash Flow Statement, and related footnote disclosure that potential shareholders need to evaluate the risks of and potential returns on investment. However, the volume of data presented in annual reports can result in information overload that reduces the value of the reports. Confusion can result from reducing technical concepts to common concepts or by the presentation of duplicate messages by different forms of media.

2. Creditors. The annual report of public companies provides financial information as well as trend information. This allows creditors to project financial solvency and to evaluate the company's ability to repay loans.

3. Employees. The annual report gives the employees information such as a description of the company's pension plan and the employee stock incentive plan. This gives employees a base from which to compare their benefits program to those of other companies. Annual reports also provide employees with a year-end review of the results to which they have contributed during the year. In this sense, the annual report provides reinforcement and rewards. The annual report also informs or reminds employees of the organization's values and objectives and sensitizes them to the aspects of the organization with which they are not familiar. On the other hand, the employee already knows how the organization is performing so the annual report does not provide any substantive additional information.

4. Customers. The annual report provides customers with trend information and management performance information. They can use this to assess the company's past and current performance.

5. Financial analysts. The set of audited comparative financial statements provides the basis for analysis done by financial analysts. Notes, which are an integral part of the statements, describe or explain various items in the statements, present additional detail, or summarize significant accounting policies. Financial analysts are the most sophisticated class of users of annual reports. However, some data may be too condensed. Analysts may also need information in addition to that provided in annual reports to facilitate their analyses.

f. **Annual reports are public and accessible to anyone, including competitors. Discuss how this affects decisions about what information should be provided in annual reports.**

Management may omit information entirely from the annual report or disguise it because competitors have access to annual reports. The objective of reporting should be to reveal as much as possible without giving away proprietary information or a competitive edge.

1.3 The use of IT at USAA

a. **Why should USAA collect data on which auto parts are fixed most frequently? What could it do with this data?**

Companies should gather and store data if the benefits received from the data are greater than the cost of collecting it. The data regarding the auto parts that get fixed most frequently is probably not costly to gather. It would probably be part of the claims information submitted by the insured parties. Therefore, the only significant cost would be to store the data and process it.

USAA passes the data on the parts to parts manufacturers, suppliers, and the Big Three automobile manufacturers. These companies use the data to improve their parts. Some use the data to determine which new products to offer. For example, one supplier may see that other suppliers are producing low quality products and determine that they could produce a better product for the same or a lower price.

b. **Even though USAA offered to waive the deductible, the repair shops still managed to convince 95% of the owners to replace rather than repair their damaged windshields. How could USAA use its AIS to persuade more shop owners to repair rather than replace their windows?**

USAA began capturing data on the repair records of the various shops that worked for them. They published this information in the newsletter sent to repair shops. The shops noticed how they compared to other shops and began repairing more windshields. Over a four-year period, the number of repaired windshields rose from 5% to 28%.

c. **How does the image-processing system at USAA add value to the organization?**

The system adds value by streamlining business processes and making them more effective and efficient. Before the image-processing system was installed, policy service representatives had to work with paper documents. Customer files were often missing or incomplete and documents were misfiled. The result was delays, multiple phone calls, and an inability to bring problems to timely closure. Now the documents are never missing or misplaced and service representatives have all the information they need to make a decision on the first phone call.

d. **How do the remote deposit capture and mobile banking system at USAA add value to the organization?**

USSA's customers are widely scattered and USAA does not have local offices everywhere there are military personnel. In addition, military personnel also are deployed in areas where they have ready access to cell phones but not personal computers. Therefore, USAA needs a way to deposit funds on a timely basis and to interact by phones that are able to access the Internet. The new applications meet these needs.

e. **Do an Internet search and find out what other advancements USAA has introduced. Write a brief paragraph on each new application or other**

newsworthy item you find (maximum limit of three applications or items).

Students should be able to find numerous applications or newsworthy items. Here is a sampling of articles that may be of interest. You should make sure the links are still active before telling the students about them.

http://www.americanbanker.com/printthis.html?id=20090624LXHZ1DW7&btn=true
http://www.cio.com/article/print/32260
http://pirp.harvard.edu/pubs_pdf/mosco/mosco-p94-9.pdf
Harvard Business School Case 9-190-155

1.4   Match the description in the right column with the information characteristic in the left column.

F	1. Relevant	a. The report was carefully designed so that the data contained on the report became information to the reader
E, C	2. Reliable	b. The manager was working one weekend and needed to find some information about production requests for a certain customer. He was able to find the report on the company's network.
D	3. Complete	c. The data on a report was checked by two clerks working independently
G, B	4. Timely	d. An accounts receivable aging report that included all customer accounts
A	5. Understandable	e. A report checked by 3 different people for accuracy
C	6. Verifiable	f. An accounts receivable aging report used in credit granting decisions
B	7. Accessible	g. An accounts receivable aging report was received before the credit manager had to make a decision whether to extend customer credit

1.5 The Howard Leasing Company

Student solutions will vary based on their background and education. The following is one possible solution.

a. What is an accounts receivable aging report?

An accounts receivable aging report lists customer account balances by length of time outstanding.

b. **Why is an accounts receivable aging report needed for an audit?**

An accounts receivable aging report is needed during an audit to determine whether the company's accounts receivable balance is properly valued.

c. **What is an accounts receivable aging report used for in normal company operations?**

An accounts receivable aging report is used in normal company operations to provide information for:
  − Evaluating current credit policies
  − Determining appropriate credit limits for new customers
  − Deciding whether to increase or decrease the credit limit for existing customers
  − Estimating bad debts
  − Initiating collection procedures for overdue accounts

d. **What data will you need to prepare the report?**

To prepare an accounts receivable aging report, credit sales and cash collections data is needed for each customer granted credit.

e. **Where will you collect the data you need to prepare the report?**

The data needed to prepare the accounts receivable aging report can be collected from the sales transaction and cash collections files or tables

f. **How will you collect the necessary data for the report?**

If the data is in machine-readable form, it can be collected by preparing and running programs or queries that will extract the sales and cash receipts data. If the data is maintained on paper, it can be collected from daily or monthly sales reports and daily or monthly cash receipts reports

g. **What will the report look like (i.e., how will you organize the data collected to create the information your supervisor needs for the audit)? Prepare an accounts receivable aging report in Excel or another spreadsheet package.**

The accounts receivable aging report should look something like the following, whether it is prepared on paper or in Excel:

Customer Number	Customer Name	0-30 Days Outstanding	31-60 Days Outstanding	61-90 Days Outstanding	91+ Days Outstanding

h. **How will you distribute the report? How many copies will you make? Who should receive the copies? What security features will you implement?**

The accounts receivable aging report should be restricted to employees with operational or authoritative responsibility for customer accounts, such as the accounts receivable clerk, the credit manager, and the controller. If the report is in an electronic form, access to the report should be restricted to appropriate authorized personnel. If the report is distributed on paper, only as many copies as necessary should be produced and they should be delivered in a manner that ensures the confidentiality of the data. Security features could include placing the report on a password-protected server or encrypting the file prior to emailing it or placing it on a server.

1.6   The use of IT at Albert Heijn

a.   What kind of information do you think AH gathers?

- The Bonuskaart application filled out in the store captures data such as customer names, addresses, household size, ages of children, dietary preferences, and income levels.

- When the Bonuskaart is used to qualify for the discounts, Albert Heijn computers record everything a customer purchases.

b.   How do you think the AH has motivated its customers to sign up for the bonus card program?

- It offers merchandise discounts to customers who sign up and gives card users a point for every pound spent. Points can be used to reduce the price of future purchases or exchanged for frequent flier miles.

- Big spenders are sent special promotions

c. What can the AH accomplish with the data it collects? Think in terms of strategy and competitive advantage.

- *Customized Coupons and promotions.* Albert Heijn analyzes customer purchases and customizes its marketing based on the results. Quarterly, Albert Heijn mails active Bonuskaart customers three coupons for frequently purchased items and three coupons for items they are likely to buy or that Albert Heijn wants them to try. Albert Heijn is so good at understanding their customer's tastes and preferences that their coupons are 10 to 15 times more likely to be used than other coupons. The quarterly mailing also contains vouchers that allow members to redeem their accumulated points. Some 95% of all vouchers are redeemed.

- *Cross marketing.* Analysis of customer data allows Albert Heijn to discover unique buying habits. For example, men who purchased diapers for newborns buy more beer than the normal male – presumably because they are more likely to stay at home and less likely to go out.

- *Improved decision-making.* Albert Heijn has been able to make better decisions and set better company goals than ever before. Using data on purchases and the ethnic makeup of the neighborhoods surrounding the stores, Albert Heijn is able to stock goods that have greater customer appeal. For example, Albert Heijn noticed that customers in a small store in a South Asian and Arab part of town were not buying complete meals. They went elsewhere to buy certain staple foods and Asian brands. Further analysis led to the decision to replace the small store with a Supercenter that offered more than 800 foreign products. It included a halal butcher shop, the latest movies from India, Arabic and Asian newspapers, and an Indian jewelry counter. Albert Heijn also redesigned its shopping carts to handle the bulk purchases of its customers more easily.

- *Customer loyalty*. Albert Heijn used Bonuskaart data to neutralize Wal-Mart's most significant advantage. Albert Heijn identified 300 items that price-sensitive shoppers frequently purchased and lowered their prices. This kept the customers most likely to shop at Walmart from defecting.

- *New product rollouts.* Analysis of Bonuskaart data showed that affluent customers were not buying certain products like fruit, cheese, and wine. This led to the introduction of a premium quality brand, "Albert Heijn's Finest," that successfully attracted affluent customers. Customer data also allows Albert Heijn to figure out quickly how new initiatives are working. For example, when Albert Heijn rolled out ethnic foods for Indians and Pakistanis, data analysis showed that white affluent customers were also buying the products. The rollout was quickly expanded to include them.

- *Improved supplier relationships.* Outside companies are taking advantage of Albert Heijn's data to improve their decision-making. When Kimberly-Clark introduced a premium toilet paper, it used Bonuskaart data to track who purchased it and who continued to purchase it. Further analysis showed that those who bought the toilet paper also were big buyers of skin-care products. This allowed Kimberly-Clark to develop a marketing program that offered free beauty treatments to those who continued to buy the toilet paper.

d. What could be some of the disadvantages of the card program??

Some critics believe that loyalty card programs

- Are too expensive to maintain and that companies can buy data to achieve similar results for less than the loyalty program costs.

- Slows down checkout lines

- Are a threat to the customer's privacy

1.7 Have you ever imagined having one electronic device that does everything you would ever need? Mobile phone makers in Japan have gone beyond the imagining phase. Cell phones in Japan are becoming more versatile than ever. Newer models of cell phones contain a myriad of applications and can do many of the things that a personal computer (PC) can do. PCs are also able to function as phones. A small but growing number of professionals are trading in their laptops for handheld computers. Cell phone manufacturers in the United States and elsewhere are quickly catching up to their Japanese counterparts.

As technology is moving so quickly, there are no right answers to this question. There are thousands of new cell phone applications are created each year. The author does not usually collect this problem. Instead, he has the students describe the different things they do with their phones. He then adds other things that he and others he knows use them for. The point is to discuss how fast technology is changing, the need to keep up with the changes, and the use of technology as a competitive advantage.

Some things to consider mentioning are:

a. **What commercial activities can be done with a cell phone? With a cell phone/PC combination device? What do you do when you're on your cell phone? What do you expect to be doing in five years?**

Newer models of cell phones contain a myriad of applications, including video cameras, digital music players, television remote features, and digital recording. For example:

1. The E-wallet function virtually turns a cell phone into a credit card or debit card. Such a cell phone can buy items from a vending machine or convenience store, pay for train tickets and cab fares, and purchase and sell stocks and bonds. Businesses cater to this new technology by including bar codes in their catalogues or on street advertisements. Users can then use their phone to scan the barcode that brings the user to that company's website. Users may then proceed to learn more about the item and order it with a click of the button.

2. The Japanese now use cell phones to watch up to 7 free television stations. Newer models can digitally record up to 30 minutes of those television programs.

3. SONY has a hard disk recorder that can be programmed via mobile phone to record TV shows.

4. Cell phones are also being used as a remote for televisions and karaoke players.

5. The Japanese also use cell phones as video cameras and music players.

6. Users everywhere use cell phones to navigate to their destination.

b. **How can businesses utilize this technology to attract more customers, sell more products, advertise their products, facilitate the sale of products, and conduct and manage their businesses more efficiently and effectively?**

In order to make products and services available to the consumers using cell phones, an infrastructure must be in place. Such things as bar coded products and vending machines that accept e-wallet transactions from cell phones are necessary for the device to be of use to the consumer. Businesses that can provide this infrastructure will be well positioned to take advantage of the cell phone/PC revolution. Indeed, auction sites have noticed heavier volume from mobile users buying and selling items. Brokerages are reporting that 20% - 30% of trades are coming from mobile devices.

c. **What are some problems or drawbacks you can see with using these devices in business?**

The problems and drawbacks of these new devices include a relatively high sales price, short battery life, limited performance, having to drill down several menu layers to reach desired functions, and theft.

1.8   Classify each of the following items as belonging in the revenue, expenditure, human resources/payroll, production, or financing cycle.

    a. Purchase raw materials   – Expenditure cycle

    b. Pay off mortgage on factory   – Financing cycle

    c. Hire a new assistant controller   – Human resources/payroll cycle

    d. Establish a $10,000 credit limit for a new customer – Revenue cycle

    e. Pay for raw materials   – Expenditure cycle

    f. Disburse payroll checks to factory workers   - Human resources/payroll cycle

    g. Record goods received from vendor   – Expenditure cycle

    h. Update the allowance for uncollectible accounts   – Revenue cycle

    i. Decide how many units to make next month   – Production cycle

    j. Complete picking ticket for customer order   – Revenue cycle

    k. Record factory employee timecards   - Human resources/payroll cycle

    l. Sell concert tickets   – Revenue cycle

    m. Draw on line-of-credit   – Financing cycle

    n. Send new employees to a business ethics course   - Human resources/payroll cycle

    o. Pay utility bills   – Expenditure cycle

    p. Pay property taxes on office building   – Expenditure cycle

    q. Pay federal payroll taxes   - Human resources/payroll cycle

    r. Sell DVD player   – Revenue cycle

    s. Collect payment on customer accounts   – Revenue cycle

    t. Obtain a bank loan   – Financing cycle

    u. Pay sales commissions   - Human resources/payroll cycle

    v. Send an order to a vendor   – Expenditure cycle

    w. Put purchased goods into the warehouse   – Expenditure cycle

Ch. 1: Accounting Information Systems: An Overview

SUGGESTED ANSWERS TO THE CASE

1-1   **The website for this book contains an adaptation of Russell L. Ackoff's classic article "Management Misinformation Systems" from** *Management Science***. In the article, Ackoff identified five common assumptions about information systems and then explained why he disagreed with them.**

Read the five assumptions, contentions, and Ackoff's explanations. For each of the five assumptions, decide whether you agree or disagree with Ackoff's contentions. Prepare a report in which you defend your stand and explain your defense.

The exact nature of the answers will vary. Grading should be based on how well students defend the positions they take. If you plan on discussing the case in class, be sure to cover these key points:

Assumption 1: If the problem is too much information, the solution involves filtering information. You may want to compare and contrast the effectiveness of different Internet search engines to illustrate this point. The value of data mining in using data warehouses is also relevant here.

Assumption 2: If decision makers do not really need all the information they want, then the solution may involve asking decision makers to explain exactly how and why they use various data items.

Assumption 3: Is the key providing more data, or more information? Identifying the difference in a given decision setting may be difficult, but is crucial to solving this problem.

Assumption 4: Ackoff presents a nice example of how sometimes too much communication hurts. Other topics that could be discussed to clarify this issue might include asking students to identify situations in inter-personal relationships when it might not be appropriate to follow the general adage about telling the truth. Also, discuss the interaction of performance measurement and communications.

Assumption 5: The key point is to get the class to consider the degree to which the analogy about how much the average driver needs to know about how a car works applies to information systems. Ask them to identify situations when lack of knowledge about how a car works can harm the average driver. Are there any analogous situations with information systems?