

- **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.

- **Customer relationship management systems hold great promise, but their usefulness is determined by the amount of personal data customers are willing to divulge. To what extent do you think concerns about privacy-related issues affect the use of CRM systems?**

The basic issue concerns the willingness of consumers to divulge the kind of information that would allow companies to personalize the sales interaction versus concerns that such information would be misused or sold to other parties. In addition, with the growing problem of identity theft, consumers are becoming increasingly concerned about the safety and security of their personal information. Companies that wish to collect this data will most likely have to demonstrate the need for this information to the consumer as well as the company's ability to keep this information secure.

- **One function of the AIS is to provide adequate controls to ensure the safety of organizational assets, including data. However, many people view control procedures as "red tape." They also believe that, instead of producing tangible benefits, business controls create resentment and loss of company morale. Discuss this position.**

Well-designed controls should not be viewed as "red tape" because they can actually improve both efficiency and effectiveness. The benefits of business controls are evident if one considers the losses that frequently occur due to the absence of controls.

Consider a control procedure mandating weekly backup of critical files. Regular performance of this control prevents the need to spend a huge amount of time and money recreating files that are lost when the system crashes, if it is even possible to recreate the files at all. Similarly, control procedures that require workers to design structured spreadsheets can help ensure that the spreadsheet decision aids are auditable and that they are documented well enough so that other workers can use them.

It is probably impossible to eliminate resentment or loss of morale among all employees, but these factors may be minimized if controls are administered fairly and courteously.

Of course, there is a cost-benefit tradeoff in implementing internal controls. If an organization has too many controls, this may justifiably generate resentment and loss of morale among employees. Controls having only marginal economic benefit may be rejected for this reason.

Another factor is the obtrusiveness of the controls. When the user sees no clear need or purpose to a control it can appear to be there only to control them and little more than that. When the user does not understand their purpose, controls can often provoke resentment.

- **Some restaurants use customer checks with prenumbered sequence codes. Each food server uses these checks to write up customer orders. Food servers are told not to destroy any customer checks; if a mistake is made, they are to void that check and write a new one. All voided checks are to be turned in to the manager daily. How does this policy help the restaurant control cash receipts?**

The fact that all documents are prenumbered provides a means for accounting for their use and for detecting unrecorded transactions. Thus, a missing check indicates a meal for which a customer did not pay. Since each server has his or her own set of checks, it is easy to identify which server was responsible for that customer.

This policy may help to deter theft (e.g., serving friends and not requiring them to pay for the meal, or pocketing the customer's payment and destroying the check) because a reconciliation of all checks will reveal that one or more are missing.

- **Some individuals argue that accountants should focus on producing financial statements and leave the design and production of managerial reports to information systems specialists. What are the advantages and disadvantages of following this advice? To what extent should accountants be involved in producing reports that include more than just financial measures of performance? Why?**

There are no advantages to accountants focusing only on financial information. Both the accountant and the organization would suffer if this occurred. Moreover, it would be very costly to have two systems rather than one that captures and processes operational facts at the same time as it captures and reports financial facts.

The main disadvantage of this is that accountants would ignore much relevant information about the organization's activities. To the extent that such nonfinancial information (e.g., market share, customer satisfaction, measures of quality, etc.) is important to management, the value of the accounting function would decline. Moreover, accountants have been trained in how to design systems to maximize the reliability of the information produced. If relevant information is not produced by the AIS, there is danger that the information may be unreliable because the people responsible for its production have not been trained in, or adequately aware of, the potential threats to reliability and the best measures for dealing with those threats.

- **Prism Glass is converting to a new information system. To expedite and speed up implementation, the CEO asked your consulting team to postpone establishing standards and controls until after the system is fully operational. How should you respond to the CEO's request?**

The consulting team should strongly advise the CEO that postponing standards and controls is not advisable. Rather than save time and money, the company will probably lose time in the future when unanticipated problems and weaknesses arise due to the lack of standards and controls. The following are reasons why performance standards and control procedures should be established before the system becomes operational:

Internal control considerations must be taken into account when assigning job responsibilities.

Job descriptions and work schedules must include the various control procedures.

Performance standards associated with each position must be considered when selecting personnel to operate the system.

Documentation standards and data security provisions must be formulated before the system can be operational.

Error checks must be built into all computer software systems.

Procedures for guiding users and operators through the system and the various error conditions must be established before the users and operators begin working with the new system.

If the information system is not properly controlled, the information it produces will be of little value. Controls must be built into the system to ensure its effectiveness, efficiency, and accuracy.

- **When you go to a movie theater, you buy a prenumbered ticket from the cashier. This ticket is handed to another person at the entrance to the movie. What kinds of irregularities is the theater trying to prevent? What controls is it using to prevent these irregularities? What remaining risks or exposures can you identify?**

There are two reasons for using tickets.

1. The theater is trying to prevent cashiers from stealing cash by providing greater control over cash receipts. You cannot get into the theater without a ticket so you never give cash to a cashier without insisting on a ticket. That makes it much harder for a cashier to pocket cash.
2. Prenumbered tickets are also used so cashiers cannot give tickets to their friends. The number of tickets sold at the cashier counter can be reconciled with the number of tickets taken by the usher letting patrons into the theater.

Reconciling the cash in the register to the tickets sold and then reconciling the number of tickets sold to the number collected by the ticket-taker helps prevent the theft of cash and giving tickets away to friends.

Despite these controls, the following risks still exist:

- The ticket-taker can let friends into the theater without tickets.
- The ticket-taker may take money from theater patrons, pocketing the cash and letting them enter without a ticket.
- The cashier and the ticket-taker may collude in selling admittances without issuing tickets and then split the proceeds.

- **When a company converts from one system to another, many areas within the organization are affected. Explain how conversion to a new system will affect the following groups, both individually and collectively.**

The following are possible responses to each of the five areas:

- a. **Personnel**: Employees will be affected in at least two important ways.
 1. They may be reluctant to accept the new system. They may fear for their jobs, feel as if they are no longer vital components of the organization, or they may completely reject the new system, and refuse to utilize it.
 2. They will have to learn new policies and procedures to work with the new system. Initially, this may cause a slight reduction of overall productivity until they learn the system.
- b. **Data Storage**: One of the primary logistical concerns of implementing a new system is making the required data accessible to the new system. This often requires that files be converted to new formats and that the company's databases are restructured to accommodate the new system's information requirements. In addition, new sources of input may be required which will increase the need for employee instruction and training.
- c. **Operations**: New personnel may have to be hired or current employees may need to be trained to run the new system. Users will have to adjust to new system inputs and outputs. The company as a whole will be affected by changes in employee morale and productivity until the personnel are accustomed to and proficient with the system.
- d. **Policies and Procedures**: A new information system usually requires new operating policies and procedures, including those for data security and control, error checking, documentation, backup and recovery procedures, and file maintenance. These new policies and procedures should be disseminated to the employees before the actual conversion takes place to ensure that the employees are aware of the new requirements and to facilitate the system conversion.

- e. **Physical Facilities:** The effect on the physical facilities will be largely determined by the size and nature of the system being installed. For example, a server will only require a corner or perhaps a small room, whereas a mainframe may require a large facility. In any event, the company will need to be concerned about physical access to the system; off-site backup and recovery procedures; protection from fire, flooding, and other disasters; office space for programmers and operators; lighting, air conditioning, and humidity control; and data communications facilities.

- The following notice was posted in the employee cafeteria on Monday morning:

To: All Accounting and Clerical Employees

From: I.M. Krewel, President

Subject: Termination of Employee Positions

Effective this Friday, all accounting and clerical employees not otherwise contacted will be terminated. Our new computer system eliminates the need for most of these jobs. We're grateful for the loyal service you've rendered as employees and wish you success. You may wish to pick up your final checks on Friday before you go.

Discuss the president's approach to human resource management.

This approach is clearly unproductive and it would not work.

What are the possible repercussions of this episode?

- Sabotage of the new system by disgruntled employees.
- Employees not released will probably harbor ill feelings towards the company. Employees may reflect these feelings through poor work performance, lower productivity, higher absentee rates, and resentment towards the new system.

Assuming that job termination is the best alternative available, how should management approach the situation?

- Management should discuss the situation in person with each employee.
- The changes that are being made should be clearly communicated to each employee.
- Every effort should be made to relocate employees within the company and offer early retirement incentives where possible.
- Terminated employees should be told in person.
- Giving employees a week's notice that they are "being replaced by a computer" may well result in the system being sabotaged.
- Employees should be terminated on Friday afternoon and given the appropriate severance pay.
- The termination should not come as a complete surprise to the employees. The employees should have already known that every effort was made to relocate them within the company and that termination was a last resort.

- **You were hired to manage the accounting and control functions at the Glass Jewelry Company. During your introductory meeting, the president asked you to design and implement a new AIS within six months. Company sales for the past year were \$10 million, and they are expected to double in the next 18 months.**

Outline the procedures you would follow to complete the assigned project.

a. You would perform the following steps to design and implement a new AIS:

- systems analysis (initial investigation, systems survey, feasibility study, and determining information needs and system requirements)
- conceptual design (evaluate design alternatives, prepare design specifications, prepare conceptual systems design report)
- physical design (output, file and database, input, program, procedures, and control design)
- implementation of the system (implementation planning, prepare site, select and train personnel, complete documentation, test system, and convert to the new system)
- operate and maintain the system

Include a description of the following:

1. Sources of Information

- company documents (organization charts, job descriptions, and procedure manuals)
- current system outputs, reports, and documentation
- interview users and management
- observation of the current procedures

2. Methods of Recording Information

- prepare narrative descriptions and organization charts
- prepare data models
- prepare document, systems, and program flowcharts
- prepare data flow diagrams
- complete questionnaires

3. Methods of Verifying the System Description

- discussion with users
- transaction testing
- observation

b. The accounts payable system will contain a number of programs, including Enter Invoices and Print Payable Checks. For each program, describe its purpose and outline application control considerations.

1. Enter Invoices

This program permits operators to enter unpaid vendor invoices into the Accounts Payable system. The program should enable the distribution of the invoice to specific general ledger accounts. Controls include:

- check to ensure that the vendor number is on file, i.e., valid vendor number
- ensures that the invoice has not been previously entered, i.e., duplicate entry
- ensures that the invoice has been fully allocated to general ledger accounts
- ensures that the general ledger account numbers are valid
- ensures that items were ordered and received and that prices and other charges are ok

2. Print Payable Checks

This program generates supplier checks to pay outstanding invoices. Controls include:

- ensures that the vendor number on the invoice is valid (i.e., vendor is still on file)
- ensures that checks are used in sequential order
- ensures that only the outstanding invoice amount is paid
- lists the invoices and the amount paid by the check (i.e., the remittance list)
- ensures that negative checks are not printed
- ensures that checks do not exceed a predetermined amount
- ensures that there is an approved, unpaid invoice in the Accounts Payable file before making a payment