**CHAPTER 1**

**ACCOUNTING INFORMATION SYSTEMS:**

### AN OVERVIEW

**Instructor’s Manual**

**Learning Objectives**:

1. Distinguish between data and information, discuss the characteristics of useful information, and explain how to determine the value of information.
2. Explain the decisions an organization makes and the information needed to make them.
3. Identify the information that passes between internal and external parties and an AIS.
4. Describe the major business processes present in most companies.
5. Explain what an accounting information system (AIS) is and describe its basic functions.
6. Discuss how an AIS can add value to an organization.
7. Explain how an AIS and corporate strategy affect each other.
8. Explain the role an AIS plays in a company’s value chain.

**Learning Objective One**

**Distinguish between data and information, discuss the characteristics of useful information, and explain how to determine the value of information.**

**Systems, Data, and Information**

**Systems**

A **system** is a set of two or more interrelated components that interact to achieve a goal

Systems are almost always composed of smaller subsystems

Each subsystem is designed to achieve one or more organizational goals.

For example, the college of business is a system composed of various subsystems known as departments (e.g., Marketing, Management, Accounting, etc.).

When the **systems concept** is used in systems development, changes in subsystems cannot be made without considering the effect on other subsystems and the system as a whole.

**Goal conflict** occurs when a decision or action of a subsystem is inconsistent with another subsystem or the system as a whole.

**Goal congruence** isachieved when a subsystem achieves its goals while contributing to the organization’s overall goal.

Thesystems conceptalso encourages **integration**, which is eliminating duplicate recording, storage, reporting, and other processing activities in an organization.

**Data**

**Data** are facts that are collected, recorded, stored, and processed by an information system.

Several kinds of data need to be collected in businesses, such as:

1. Facts about the activities that take place (e.g., date)
2. The resources affected by the activities (e.g., number of units)
3. The people who participate in the activity (e.g., S&S)

**Information**

**Information** is data that have been organized and processed to provide meaning to a user.

If using the example of data provided above—date, number of units, and S&S—would you be able to determine if this is a sales transaction, purchase transaction, or any other type of transaction? No, because it is not organized and contextual, meaning is not determinable.

There are limits to the amount of information the human mind can effectively absorb and process.

**Information overload** occurs when those limits are passed.

When you get more information than you can effectively assimilate, you suffer from information overload.

* + - Example: Final exams week!

When you’ve reached the overload point, the quality of decisions declines while the costs of producing the information increases.

The value of information is the benefit produced by the information minus the cost of producing it.

A good example of the value of information is provided on **page 4** for the **7-Eleven stores in Japan.** Each store uses information for:

1. Keeping track of the 3,000 items sold in each store and determining what products are moving, at what time of the day, and under what weather conditions.
2. Keeping track of customers (what and when they buy). If their best customers are single men, for example, the store makes sure it has the fresh rice dishes they purchase on their lunch hour and at the end of the workday.
3. Ordering sandwiches and rice dishes from suppliers automatically. Orders are placed and filled three times a day so stores can always have fresh food. 7-Eleven allows its suppliers to access sales data in their computers so they can forecast demand.
4. Coordinating deliveries with suppliers. This allows the stores to reduce the number of deliveries from 34 to 12 a day, resulting in less clerical receiving time.
5. Preparing a color graphic display that indicates which store areas contribute the most to sales and profits.

**Table 1-1** on **page 4** provides the seven characteristics that make information useful and meaningful for decision making.

1. Relevant
2. Reliable (now known as Faithful Representation)
3. Complete
4. Timely
5. Understandable
6. Verifiable
7. Accessible

These characteristics (except for number 7: Accessible) are from the Statement of Financial Accounting Concepts #8 Conceptual Framework for Financial Reporting, Chapter 3 on the Quality of Information, which can be downloaded from: <http://www.fasb.org/cs/ContentServer?site=FASB&c=Document_C&pagename=FASB%2FDocument_C%2FDocumentPage&cid=1176157498129>

The final characteristic (#7) combines elements of the Timely (#4) and Understandable (#5) characteristics.

**Multiple Choice 1**

Data differ from information in which way?

a. Data are output and information is input.

b. Information is output and data are input.

c. Data are meaningful bits of information.

d. There is no difference.

**Multiple Choice 2**

Which of the following is *not* a characteristic that makes information useful?

a. It is reliable. c. It is inexpensive.

b. It is timely. d. It is relevant.

**Learning Objective Two**

**Explain the decisions an organization makes and the information needed to make them.**

**Key Decisions and Information Needs**

Using the S&S case, we can use business processes to delineate the key decisions that will need to be made within each process and after determining those decisions, ascertain what information will be needed to reach those decisions. The case will help students to understand that before collecting data and processing it into information, the decisions that management and other external users will be making need to be known first. Only after this is known can we begin designing and using the AIS to capture, collect, and process the correct data as needed by decision makers. These information needs and key decisions are provided in **Table 1-2** on **page 5.**

**Multiple Choice 3**

Which of the following is *not* a means by which information improves decision making?

a. increasing information overload

b. reducing uncertainty

c. providing feedback about the effectiveness of prior decisions

d. identifying situations requiring management action

**Learning Objectives Three and Four**

**3. Identify the information that passes between internal and external parties and an AIS.**

**4. Describe the major business processes present in most companies.**

**Reorganize Business Processes**

Taking the list of specific business processes from S&S it is easier to group them into major categories that relate to most organizations. These are:

1. The Revenue Cycle—Goods and services are sold for cash or future promise to receive cash (Accounts Receivable).
2. The Expenditure Cycle—Purchase of inventory for resale or raw materials for use in production in exchange for cash or a promise to pay cash in the future (Accounts Payable).
3. The Production or Conversion Cycle—Raw materials are converted into finished goods.
4. The Human Resource/Payroll Cycle—Employees are hired, trained, compensated, evaluated, promoted, and terminated.
5. The Financing Cycle—How companies acquire capital by selling shares or borrowing money and where investors are paid dividends or interest.

For each of these processes there is a basic give-get relationship that is called **transaction processing.** **Figure 1-2** on **page 7** provides a description of the basic give-get exchanges.

1. Revenue Cycle—Give goods, get cash or A/R.
2. Expenditure Cycle—Give cash or A/P, get goods or raw materials.
3. Production Cycle—Give labor and raw materials, get finished goods.
4. Human Resource—Give cash, get labor.
5. Financing Cycle—Give cash, get cash.

The figure also shows the relationship between these cycles and the general ledger and reporting system function.

**Multiple Choice 4**

Which transaction cycle includes interactions between an organization and its suppliers?

a. revenue cycle

b. expenditure cycle

c. human resources/payroll cycle

d. general ledger and reporting system

**Multiple Choice 5**

In which cycle does a company ship goods to customers?

a. production cycle

b. financing cycle

c. revenue cycle

d. expenditure cycle

**Learning Objective Five**

**Explain what an accounting information system (AIS) is and describe its basic functions.**

**What Is an Accounting Information System?**

An **accounting information system (AIS)** is a system that collects, records, stores, and processes data to produce information for decision makers.

This is illustrated in **Figure 1-3** on **page 10.**

An AIS can be a pencil and paper manual system or one that involves the latest technology.

**Six components of an Accounting Information System**

1. The **people** who operate the system and perform various functions
2. The **procedures and instructions,** both manual and automated, involved in collecting, processing, and storing data about the organization’s activities
3. The **data** about the organization and its business processes
4. The **software** used to process the organization’s data
5. The **information technology infrastructure,** including computers, peripheral devices, and network communications devices used to collect, store, process, and transmit data and information
6. The **internal controls** and **security measures** that safeguard the data in the AIS

These six components enable an accounting information system to fulfill **three important business functions:**

1. **Collect and store data** about organizational activities, resources, and personnel.
2. **Transform data into information** that is useful for making decisions so management can plan, execute, control, and evaluate activities, resources, and personnel.
3. **Provide adequate controls** to safeguard the organization’s assets, including its data, to ensure that the assets and data are available when needed and the data are accurate and reliable.

**Multiple Choice 6**

Which of the following is a function of an AIS?

a. reducing the need to identify a strategy and strategic position

b. transforming data into useful information

c. allocating organizational resources

d. automating all decision making

**Learning Objective Six**

**Discuss how an AIS can add value to an organization.**

**How an AIS Can Add Value to an Organization**

1. **Improve the quality** and **reduce the costs** of products or services.
2. **Improve efficiency.** A well-designed AIS can make operations more efficient by providing more timely information.
3. **Share knowledge.** A well-designed AIS can make it easier to share knowledge and expertise, perhaps thereby improving operations and even providing a competitive advantage.
4. **Improve** the **efficiency** and **effectiveness** of its supply chain.
5. **Improve** the internal control structure.
6. **Improve** decision making.

**Multiple Choice 7**

An AIS provides value by:

a. improving products or services through information that increases quality and reduces costs.

b. providing timely and reliable information to decision makers.

c. creating new products.

d. both A and B

**Learning Objective Seven**

**Explain how an AIS and corporate strategy affect each other.**

**The AIS and Corporate Strategy**

**Information Technology and Business Strategy**

**Figure 1-4** on **page 13** shows how IT developments can affect business strategy.

For example, the growth of the Internet has affected the way many value chain activities are performed.

The Internet makes a company’s products available almost anywhere.

Another technological advance is **predictive analysis,** which uses data warehouses and complex algorithms to forecast future events.

An organization’s AIS plays an important role in helping it adopt and maintain a strategic position.

The information system can collect financial and nonfinancial data about the organizations activities.

**Learning Objective Eight**

**Explain the role an AIS plays in a company’s value chain.**

**The Role of the AIS in the Value Chain**

The role of an AIS in the value chain is detailed in **Figure 1-5** on **page 14.** The objective of most organizations is to **provide value** to their **customers.**

**Five primary activities** that directly provide value to its customers:

1. **Inbound logistics** consists of receiving, storing, and distributing the materials an organization uses to create the services and products it sells.
2. **Operations** activities transform inputs into final products or services.
3. **Outbound logistics** activities distribute finished products or services to customers.
4. **Marketing and sales** activities help customers buy the organization’s products or services.
5. **Service** activities provide post-sale support to customers.

**Four Categories of Support Activities**

1. **Firm infrastructure** is the accounting, finance, legal, and general administration activities that allow an organization to function.
2. **Human resources** activities include recruiting, hiring, training, and providing employee benefits and compensation.
3. **Technology** activities improve a product or service.
4. **Purchasing** activities procure raw materials, supplies, machinery, and the buildings used to carry out the primary activities.

**Supply Chain [Figure 1-6 on Page 15]**

1. Raw Materials Supplier
2. Manufacturer
3. Distributor
4. Retailer
5. Consumer

**Multiple Choice 8**

The value chain concept is composed of the following two types of activities:

1. Primary and secondary
2. Primary and support
3. Support and value
4. Technology and support

**Multiple Choice 9**

Which of the following is a primary activity in the value chain?

a. purchasing c. post-sales service

b. accounting d. human resource management

**ANSWERS to Multiple Choice Questions:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Multiple****Choice****Number** | **Multiple****Choice****Answer** | **Multiple****Choice****Number** | **Multiple****Choice****Answer** |
| **1** | **B** |  |  |
| **2** | **C** |  |  |
| **3** | **A** |  |  |
| **4** | **B** |  |  |
| **5** | **C** |  |  |
| **6** | **B** |  |  |
| **7** | **D** |  |  |
| **8** | **B** |  |  |
| **9** | **C** |  |  |

**References Used:**

1. Michael E. Porter and Victor E. Millar, “How Information Gives You Competitive Advantage” *Harvard Business Review,* (July–August 1985), pp. 149–160.
2. Michael E. Porter, “What Is Strategy?” *Harvard Business Review,* (November-December 1996), pp. 61-78.
3. Statement of Financial Accounting Concepts #8 Chapter 3 on the Quality of Information, which can be downloaded from: http://www.fasb.org/cs/ContentServer?site=FASB&c=Document\_C&pagename=FASB%2FDocument\_C%2FDocumentPage&cid=1176157498129