**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, and the major business processes present in most companies.
3. Explain how an AIS adds value to an organization, how it affects and is affected by corporate strategy, and its role in a value chain.

**Learning Objective One**

**Distinguish data from 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.).

Each subsystem is designed to achieve one or more organizational goals, changes in subsystems cannot be made without considering the effect on other subsystems and the system as a whole.

**Goal conflict** occurs when a subsystem’s goals are inconsistent with the goals of 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.

**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, total amount).
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 and improve the decision=making process.

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 it is not determinable. You would need to know that the context of the transaction is a sales transaction and S&S is a customer (as opposed to a vendor). Number of units are number of units sold.

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 have reached the overload point, the quality of decisions declines while the costs of producing the information increases.

**Information Technology (IT)** are computers and other electronic devices used to store, retrieve, transmit, and manipulate data to help decision makers more effectively filter and condense information.

The value of information is the benefit produced by the information minus the cost of producing it. Benefits include reduced uncertainty, improved decisions, and improved ability to plan and schedule activities. Costs include the time and resources spent to produce and distribute information.

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 consistent with 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 facts about a sale

b. Information is data organized to provide meaning

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

b. It is timely

c. It is inexpensive

d. It is relevant

**Learning Objective Two**

**Explain the decisions an organization makes and the information needed to make them, and the major business processes present in most companies.**

**.**

**Key Decisions and Information Needs**

Using the S&S case, we can determine what information will be needed to make better decisions. Information in an organization is organized through a set of related, coordinated, and structured activities and tasks, performed by a person, a computer, or a machine that help accomplish a specific organizational goal known as a **business process**. 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**

What information needs are generally associated with the acquire inventory business process?

a. Market Analysis

b. Vendor Performance

c. Inventory status reports

d. All of the above

**Learning Objective Three**

**Explain how an AIS adds value to an organization, how it affects and is affected by corporate strategy, and its role in a value chain.**

**Business Processes**

Taking the list of specific business processes from S&S it is easier to group them into related transactions. A **transaction** is an agreement between two entities to exchange goods or services or any other event that can be measured in economic terms by an organization. **Transaction processing** is the process of capturing transaction data, processing it, storing it for later use, and producing information output such as a financial statement. The activities between two entities are pairs of events involved in **give-get exchange** (e.g., give inventory to a customer, get cash from the customer). These frequent give-get exchanges that occur in companies are grouped around **business processes or transaction cycles** and are:

1. The **Revenue Cycle**—Activities associated with selling goods and services in exchange 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—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. **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 which is used to generate information for both management and external parties.

**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

**Accounting Information Systems**

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 11.**

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

**Six components of an AIS**

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 AIS 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.

**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

**The AIS and Corporate Strategy**

**Figure 1-4** on **page 13** shows three factors that influence the design of an AIS: IT developments, business strategy, and organizational culture.

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 play 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.

**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** showing the linking together of all the primary and support activities in a business**.** 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 14]** shows an extended system that includes an organizations value chain (manufacturer) as well as suppliers, distributers, retailers, and customers.

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

b. Accounting

c. Post-sales service

d. Human resource management

**Multiple Choice 10**

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

a. Purchasing

b. Manufacturing

c. Post-sales service

d. Receiving materials

**Answers to Multiple Choice Questions:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Multiple Choice Number** | **Multiple Choice Answer** | **Multiple Choice Number** | **Multiple Choice Answer** |
| **1** | **B** | **6** | **B** |
| **2** | **C** | **7** | **D** |
| **3** | **D** | **8** | **B** |
| **4** | **B** | **9** | **C** |
| **5** | **C** | **10** | **A** |

**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: www.fasb.org/cs/ContentServer?site=FASB&c=Document\_C&pagename=FASB%2FDocument\_C%2FDocumentPage&cid=1176157498129.