

## Chapter 1. System Basics

### Chapter Overview

In this chapter, we begin our journey toward understanding accounting from a systems perspective. Our first stop is an examination of a real-world case (Joe's Ristorante), which illustrates the need for accounting information. From there, we examine a definition of systems in general. We look at what constitutes a system problem, the possible causes, and the importance of critical thinking. We then expand the general definition of a system to focus on accounting and identify their four main components. Next, we examine what the difference is between data and information, how information might be organized (by source and type), and what makes information useful and how to determine the value of this information. We look at who needs and uses accounting information and how it fits into the larger information ecosystem. Finally, we discuss the importance of accounting systems and why we should study them and how studying AIS helps prepare you for an accounting career.

### Teaching Tips

Setting expectations about the course in the beginning of the term is always a good thing. Students are sometimes nervous when they see "systems" in the course title when they are accounting majors. Sometimes they think it requires a lot of programming; however, this is a good time to tell them how the course is set up, why it's important for them to know about AIS as an accountant and how to do well in the course! The way the book is laid out helps students gain different perspectives about AIS topics, that is why the book takes on the three different perspectives of AIS that a student would experience when they are in an accounting job: AIS from a user perspective, AIS from a design perspective, and AIS from a risk management perspective.

### Recommendation for in class exercise:

Using the Joe's Ristorante case gets a good class discussion on what data is needed and how it might be classified. Incorporating discussion questions 1 (a-e) and 6 can get things started in the class.

Additional ways to enhance the discussion and to reinforce concepts from the chapter may include for example, what data is external or internal to Joe's? After reading this case, students should quickly be able to answer the following: Does Joe know how well he is doing? Yes/no.

Students will certainly say "no" and provide you with enough details to support their answer. After the student's agree that Joe's does not have the right information to know if the business is doing well, you can have them break out into groups to brainstorm and discuss what information does Joe's need to run the business. Have them pose this as questions such as:

What menu items are the most popular?

What menu items are ordered most often?

What menu items have the best profit margins?

What is the mix of orders that are in restaurant vs. takeout?

Doing this in-class exercise puts students in a data analytics mindset from the beginning of the course.

Once you've put these on the board or have an online discussion if teaching remotely, then have the students start identifying what **data** is needed to answer these types of questions.

You can further use the case to have students identify the components of an ais for Joe's

People: Managers, chefs, cooks, owner, waiters

Processes: Ordering food/drinks to make the menu items; Waiters taking the customer order; Making the menu items/mixing the drinks; Collecting money from the customer

Currently there is no real technologies and controls for Joe's

You can continue using the Joe's case to have students discuss what data are internal and external?

Examples of internal are:

Prices on the menu

Orders

Wage information on employees

Examples of external are:

Sales tax %

Employee federal/state/local (if applicable) on the wages

Employer taxes % owed to federal, state, local

**Directions:** On the line next to the numbered column, insert the correct alphabetical letter from the second column that best matches the term.

F\_\_\_1. A system, in general

**A** Benefit - cost.

H\_\_\_2. Accounting information

**B** Framework of people, processes, technologies, and controls that work together to provide information needed to operate, make decisions, and file necessary reports.

J\_\_\_3. System Problem

**C** A standard electronic format for exchanging business documents.

D\_\_\_4. People

**D** Perform tasks involved in collecting, processing, tracking, and reporting accounting information.

G\_\_\_5. Transaction

**E** Reduces the likelihood that something will go wrong.

B\_\_\_6. Accounting information System

**F** Framework of interacting parts that work together to achieve an objective.

C 7. EDI

**G** Result of an agreement between an entity and some outside party to exchange goods or services.

E 8. Controls

**H** Monetary values and ratios that are useful for operations, decision making, and filing necessary reports.

I 9. Enterprise Resource Planning (ERP) Systems

**I** Systems that integrate data from all aspects of a company's operations into one large centralized database.

A 10. The value of information

**J** Occurs when the system objective is not met.

### Discussion Questions from Text

1. After reading the Joe's Ristoranté case, answer the following:

- a. Does Joe understand the need for accounting information? Yes, he says explicitly in the case "we badly need a new accounting system here in the restaurant" he cites a major timeliness problem, and need for better information about inventory, accounts payable, and fixed assets.
- b. What information will be needed in general and in specific to the restaurant?
  - to operate; specifically, Collecting and safeguarding cash receipts, paying vendors on time, tracking inventory and minimizing shortages
  - to make decisions; specifically, Pricing, when and how much to borrow, rating or discontinuing a product
  - to file necessary reports; specifically, tax returns and financial statements
- c. What will be required to get it? Some type of effective accounting system
- d. Should the company do the accounting itself or outsource it (totally or partially) to an accounting service provider such as a CPA? It depends on the costs and benefits
- e. What would you recommend that Joe should do?  
Who—The owner can decide or they could hire an outside consultant.  
How—by looking at the alternatives and their related costs and benefits.

2. Generally, what is a system?

A system is a framework of parts that work together to achieve an objective e.,g using a simple system? heating or bicycle

3. What is a system problem? Using this concept, what would be a good example and a possible cause?

A system problem is when the system objective is not being met. Students should be able to cite examples of where a system is not meeting its objective. For example, the problem may be due to a missing or malfunctioning part. It could also be due to some outside disturbance such as a nail in the road or a bridge collapse.

4. What is an accounting information system? What is the difference between an accounting system and a system in general?

An accounting information system is a more specific type of system which has a framework of people, technologies, and controls that work together to operate, make decisions, and file necessary reports. An accounting system is a specific example of a system. A system in general would be a definition that would apply to or fit any system.

5. What is critical thinking? In what context is it important?

Critical thinking at this stage (more will be added in later chapters) is a thought process that analyzes and evaluates evidence gathered from questioned sources in order to reach an informed judgment.

6. What are the components of an accounting information system? Provide examples of each using the Joe's Ristorante case.

People—Joe and the order takers

Process—customers ordering food and paying for it

Technologies—this is manual for example checks and deposit slips

Controls—not much, mostly supervision of operations, although only Joe can sign checks

7. Is an accounting systems course about accounting, per se?

It could be viewed as more about business process management, but this is a matter of opinion. It is certainly not structured like financial accounting and does not involve journal entries or debits and credits. It's more about selecting the most appropriate technology and ensuring that the accounting system works properly.

8. What makes a system complex and why is it better to illustrate a simple system when attempting to understand the basic concept?

Systems become complex when the number of parts and interactions among them increase. It is better to illustrate a simple system so that all parts of the general definition can be observed and how they work together can be clearly explained.

9. What makes information useful? And how does usefulness relate to value? Can useful information not be valuable?

relevance—its pertinent and reduces uncertainty

reliability—free of error or bias

timely—in time to affect decisions

complete—includes all relevant data

understandable—intelligible to the user

Usefulness is the benefit side of value.

A useful system may not have value if the costs exceed the benefits.

10. What effect has technology had on accounting systems and is it expected to continue?

Data is no longer processed and stored on paper. Many businesses have computerized their accounting systems and use data communications to share their data. This enables them to manage larger databases, move data more rapidly to and from remote locations, and obtain immediate feedback on the effects of transactions.

11. Can information technology be used to create competitive advantage?

Yes, see the satellite-based network system used by Walmart as an example.

12. Why are advanced ERP systems that rely on transaction-based data no longer sufficient?

In a digital world, there may be significant amounts of actionable financial intelligence available in sources outside of the sales or bill-paying transaction systems. Therefore, in addition to processing transactions and organizing them in structured databases for standard financial reports, we must also be thinking about collecting data from unstructured sources and mining this data with a variety of new analytical tools.

13. How important are accounting systems and why should we study them?

Accounting systems touch most or all of an organization's activities and are needed to be effective and competitive

—external activities through transactions with customers and vendors

—internal activities through payments to employees, product costing, budgets, etc.

Your knowledge of accounting will not be complete unless you understand accounting systems.

**Multiple Choice**

14. Which of the following would not be part of a system according to general system theory?

- a) An objective
- b) Interacting parts
- c) Things that work together
- d) A general ledger

ANS: d

15. Systems problems always occur when

- a) a part is missing.
- b) the objective is clear.
- c) parts interact.
- d) the objective is not being met.

ANS: d

16. For information to be useful, it must be

- a) relevant.
- b) reliable.
- c) complete.
- d) timely.
- e) all of the above.

ANS: e

17. Which of the following is not a major component of an AIS?

- a) People
- b) Education
- c) Technologies
- d) Controls

ANS: b

18. The value of an accounting system is generally determined by
- a) quantifying all of its benefits.
  - b) ensuring that its costs are low.
  - c) estimating its salvage value.
  - d) subtracting its cost from its benefit.

ANS: d

19. Which of the following would be the best way to improve your critical thinking skills?
- a) Listening to lectures
  - b) Questioning your own thinking
  - c) Engaging in activities that challenge you to express your opinion based on sound reasoning
  - d) Both b) and c)

ANS: d

### Exercises

20. PROBLEM-SOLVING IN THE REAL WORLD: Thinking and generating solutions that answer questions and improve profits

a. The problems here include out-of-date software, security concerns, and the inability to share information across users. Although they could upgrade to the new versions and add some security measures, they do not want to be bothered with these costs and impositions. In such cases, migrating to a cloud-based solutions may be a better option.

b. There appears to be a lack of information for decision-making purposes pertaining to the company's sales and sales personnel. Although adding group codes would provide some of the needed information, they would not address the lack of qualitative data about sales training. To obtain such information, an ERP system with an accounting module, which includes group codes, plus an HR module would more likely address the problem.

c. There are at least two problems here. The first was that the company did not know which store had shipped the used movie, and the second was that the company did not follow up on a timely basis to ensure that shipped goods were actually received by their customer. The first problem might be addressed by adding a group code to sales for the store who is shipping the merchandise, so proper follow-up and accountability can occur, and second, a control to follow up on shipped goods and to take action if they are not delivered on a timely basis. \*\* An interesting anecdote to this actual case, is that one year later, the company declared bankruptcy and went out of business.

d. There are several problems here, most of which are control related. First of all, the company apparently failed to evaluate the acquired company's financial situation before they were acquired. They are also not properly monitoring the interim budget reports and cash flow information. Despite the significant negative consequences that may occur as a result of publicly addressing these problems, the

correct ethical and most-likely legal response should be to notify the stockholders and SEC that an investigation is taking place and that it may result in restating its prior financial statements.

**Critical Thinking**

21. Solution is based on student research

**Reflective Learning**

22. Answers are based student reflections.

23. Creating an ais for a newly founded company would immediately focus on the informational needs while an existing company may have changed over the years and you are dealing with more difficulty in your ais as you may not get the information you need.