Chapter 2
Business Processes and AIS Data

Chapter Overview

This chapter introduces basic concepts that are used throughout this text. The chapter introduces transaction cycles and AIS data. We present event identification guidelines to help students partition any business process into a set of events in a systematic manner. This chapter also introduces students to basic file concepts including transaction and master files, reference and summary data, and recording, file maintenance, and file update activities. We recommend covering this chapter regardless of the particular approach used in a specific AIS course. Further, we have found it useful to cover this chapter at a slow pace with adequate opportunities for practice. Mastering the fundamental concepts can help students learn the material in later chapters more easily.

Assignments

General information

Numerous problem-solving assignments are included in the chapter for practice. To ensure a smooth flow of chapter content, these exercises have been moved to the end of the chapter. Margin references are provided in the chapter. Encourage students to try the problems as they encounter these margin references. Solutions to these problem-solving exercises are at the end of the text to provide immediate feedback to students.

We have added a new section in the end-of-chapter material (Problem-Solving on Your Own) that provides extensions to the problem-solving exercises. Since solutions to the new section assignments are not included in the textbook, these might be better-suited for class discussion.

Additional assignment suggestions:

- Accounting Software Exercises. This is a series of problems that are available at the end of this chapter, as well as the end of Chapters 4, 6 7, 8, 9, 10 and 11. The purpose of
the exercises is to allow students to see the connection between the material in the text and real-world accounting applications.

- **Comprehensive Case**  
  Chapter 2 requirements for the Harmony Music Shop case at the end of the text can be assigned. This case is integrative and has questions related to all 14 chapters.

- **Database Project**  
  The database project requirements at the end of chapter 2 can be assigned. We have found it useful to require students to hand-in their solutions to chapter 2 requirements of the Database Project. Students usually need guidance in developing business process specifications. Providing feedback to help students refine their business process after chapter 2 helps improve the overall quality of student projects.

**Business Processes and Events**

**Overview and Approach**  
The purpose of this introductory section is to help students understand the following concepts: business process, event, acquisition cycle, conversion cycle, and revenue cycle. There are no detailed problems or exercises related to this section. However, the basic concepts introduced here are used in later sections.

**Active Learning**

**Student Preparation**
1. Ask students to review the section.
2. Assign Focus on Problem-Solving exercise 2.a that helps students understand the usefulness of concepts related to transaction cycles and events in the study of an AIS.

**Class Discussion Suggestions**

- Ask students to explain each of the following terms: business process, event, acquisition cycle, conversion cycle, and revenue cycle.

- Discuss typical operations in ELERBE’s revenue process.

  **Additional Exercise 2.1**
  
  Compare these operations with the revenue cycle operations of a different type of business (e.g. a grocery store).

- Discuss typical operations in the acquisition process.

  **Additional Exercise 2.2**
1. Give examples of the goods and services that ELERBE Inc. needs to acquire from suppliers.
2. Compare the process for acquiring blank CD-ROMS with the process for acquiring the services of authors for ELERBE’s products. How are these two processes similar? In what way are these processes different?

Focus on Problem-Solving exercise 2.a requires students to suggest interview questions for learning about the revenue process. Ask the following question of students:

Additional Exercise 2.3

Assume that you have been asked to study the acquisition process for ELERBE Inc. Prepare a list of possible questions that you would ask to learn about the acquisition cycle.

Help students relate their interview questions with the typical acquisition cycle operations discussed in the text.

Wrap-up
Summarize transaction cycles and events, and point out that the next section provides detailed guidelines on identifying events in a business process.

Identifying Events in Business Processes

Overview and Approach
Given below are some general suggestions for instructors to consider while teaching this topic:

A. Provide adequate opportunities for practice
Students usually need several practice opportunities to learn event identification. Thus starting gradually and providing several problem-solving opportunities in this chapter is important and helps students in later chapters. For example, if students have mastered event identification, they will find it easier to learn how to develop a UML overview activity diagram in chapter 3 or a UML class diagram in chapter 5.

B. Take advantage of the problem-solving aid – Guidelines for recognizing events
Textbooks often mention the importance of events but provide little guidance in identifying events. Our experience suggests that students have difficulty recognizing events. The event identification guidelines (Key Point 2.1) have been developed to help students with this task. As we have used drafts of this material in our classes and observed students’ efforts at event identification, we have refined these guidelines several times to better help them with this task.

C. Discuss the importance of event identification
Explain that accounting systems are complex. A study of accounting systems involves considerable detail. Accountants construct a variety of models of systems. Different models emphasize different aspects of the AIS (e.g. process, data, reports). This text uses
the event identification technique discussed in chapter 2 as the bridge connecting the different models. Thus understanding this technique well will facilitate learning other topics in the text.

**Active Learning**

**Student Preparation**
1. Ask students to review the section on identifying events in business processes.
2. Draw student’s attention to Key Point 2.1 as these guidelines will be used in later chapters.
3. Ask students to review the worked out example for Angelo’s Diner.
4. Assign Focus on Problem-Solving exercise 2.b that requires students to identify events for Westport Indoor Tennis.
5. Assign some end of chapter exercises/problems.

**Class Discussion Suggestions**

- Underscore the importance of understanding and modeling a business process to the study of AIS. Note that the introduction to each chapter considers the importance of chapter material in terms of the user, designer, and evaluator roles. Explicitly connecting the material to the roles that students may play in the future can help in motivating students.

- Emphasize that the information obtained through interviews or observations would usually result in a detailed description of the type provided for ELERBE Inc., Angelo’s Diner, and Westport Indoor Tennis in the chapter. Depending on the problem, accountants need the ability to organize such descriptions in different ways. In this chapter we discuss organizing the narrative into events. A list of events provides a broad overview of the process under study. It is important to start with an overview to make sure that you understand the basic parts of a process before moving on to details.

- Note that detailed guidelines have been provided to assist students in the task of identifying events and are summarized in Key Point 2.1. The guidelines can be reviewed briefly to allow for details to be addressed through class discussion and small group activities. Examples are given below.

- Consider using the Angelo’s Diner and Westport Indoor Tennis examples to initiate the discussion. Try the following:
  - Call upon students to list typical events in a revenue cycle.
  - Then ask other students to list the events in the revenue cycles of Angelo’s Diner and Westport Indoor Tennis.
  - Comparing the events in a typical revenue process with the two examples can help in reinforcing the relationship between events and cycles.

- **Small group work** can be applied to discussion of homework assignments.
Before going over the homework in class, ask students to discuss their solutions to the homework (end-of-chapter assignments) in small groups. Call on students from different teams to present their answers. Discussing ideas in small groups first is often more comfortable for students than presenting to the entire class. Also, it may not be possible to involve every student in a discussion of a problem. Small group activities also allow every student a chance to discuss ideas. Such discussions can help students understand and retain material better. The subsequent discussion with the entire class can be used to provide feedback to students.

Since students have already seen the solution to Focus on Problem-Solving exercise 2.b. consider modifying the problem for in-class discussion as follows:

**Additional Exercise 2.4**

After the receptionist receives the cash, it is placed in the cash box. One part of a two-part receipt is given to the student. The other part is retained by the receptionist. At the end of the day, the receptionist calculates the total of the receipts and counts the money to make sure it is all there. She fills out a deposit slip and places the slip along with the money in an envelope. On her way home, she takes the envelope to the bank and drops it in the deposit slot. Ask the students to add these events to table of events in the solution. What was the total number of events after making the above additions? Would your answer change if the receptionist gave the money and the deposit slip to the manager who then dropped the envelope in the bank slot?

**Wrap-up**

- Summarize transaction cycles and events, and point out that later in the chapter we will pay some attention to individual activities associated with events.
- Summarize event identification guidelines.
- Mention that knowledge of transaction cycles and events will be used to understand AIS data in the next section.
Organizing Data in an AIS

Overview and Approach
Given below are some general suggestions for instructors to consider while teaching this topic:

A. Connect to prior coursework
The material in this section is primarily intended for review purpose. Instructors can use this information to connect the material in this text with prior courses. This section can help in setting the stage for the discussion of master and transaction files in the next section.

B. Focus on subsidiary ledgers
Subsidiary ledgers are often not emphasized in the introductory accounting course where the focus is on journalizing and posting transactions. However, an understanding of the purpose and organization of subsidiary ledgers can help students understand the typical master files in an AIS.

Active Learning

Student Preparation
1. Ask students to review the section.
2. Assign Focus on Problem-Solving exercises 2.d and 2.e that reinforce students’ understanding of a manual AIS.
3. Assign some end of chapter exercises/problems.

Class Discussion Suggestions
• Discuss the following concepts: source documents, journal, and ledger. Ask students to explain how these are used in ELERBE’s AIS.
• Ask students to explain why source documents, journals, and a general ledger are not sufficient for meeting ELERBE’s needs. If needed, ask them how they would get customer balances from a system consisting of source documents (e.g. invoices and remittance advices), journals (sales journal and cash receipts journal), and a general ledger.

Wrap-up
• Summarize the elements of a manual AIS (source documents, journal, general ledger, and subsidiary ledger). Explain that an understanding of these concepts will be useful in understanding computerized AIS.

Types of Files and Data

Overview and Approach
This section presents important concepts that are used throughout the text. Key ideas to emphasize include: (1) characteristics of master files, (2) types of master files, (3) the differences between reference and summary data, (4) characteristics of transaction files, and (5) benefits of separating transaction and master files.
Active Learning

Student Preparation
1. Ask students to review the section.
2. Assign Focus on Problem-Solving exercise 2.f and 2.g that reinforce students’ understanding of a manual AIS.
3. Assign some end of chapter exercises/problems.

Class Discussion Suggestions
- Describe the characteristics of master files. Ask students for examples of master files.
- Discuss the main types of master files in an AIS: (1) goods/services, (2) internal agents, and (3) external agents. Ask students to compare these master files to data in a manual AIS. Help them understand that these master files are similar to the subsidiary ledgers in the manual AIS.
- Ask students to give examples of reference and summary data in these master files.
- Ask students to give examples of transaction files and describe the kinds of data items usually stored in transaction files (e.g. date, transaction number, customer#, product#, price, quantity, status).
- Discuss the benefits of organizing an AIS into master and transaction files.

Additional Exercise 2.5
Refer students to the registration process in Focus on Problem Solving exercise 2.c that describes the registration process for Iceland Community College. Ask the following:
1. Give an example of a transaction file for the registration system.
2. One master file required in the registration system is a Course file. What reference data would you include in the Course file?
3. What summary data would you include in the course file?
4. Give another example of a master file for the registration system.

Wrap-up
- Summarize master and transaction files. Reinforce student’s understanding of reference and summary data. Explain that many activities involved in business processes involve using, creating, or modifying data in transaction and/or master files. The next section describes some common activities involving files.

Events and Activities

Overview and Approach
This section describes three key concepts that are used extensively in later chapters: (1) recording, (2) file maintenance, and (3) file update. As an example, these concepts are used in chapter 4 in our discussion of information system risks. We also find that
students have difficulty understanding and remembering these concepts and it is helpful to review them periodically (especially in chapter 4).

**Active Learning**

**Student Preparation**

1. Ask students to review the section.
2. Assign Focus on Problem Solving exercises 2.i and 2.j that reinforce students’ understanding of a manual AIS.
3. Assign some end of chapter exercises/problems.

**Class Discussion Suggestions**

- Discuss the main types of master files in an AIS: (1) goods/services, (2) internal agents, and (3) external agents. Ask students to compare these master files to data in a manual AIS. Help them understand that these master files are similar to the subsidiary ledgers in the manual AIS.
- Ask students to give examples of reference and summary data in these master files.
- Ask students to give examples of transaction files and describe the kinds of data items usually stored in transaction files (e.g. date, transaction number, customer#, product#, price, quantity, status).
- Discuss the benefits of organizing an AIS into master and transaction files.

**Additional Exercise 2.6**

Refer students to the registration process in Focus on Problem Solving exercise 2.c that describes the registration process for Iceland Community College. Ask the following:

1. Give an example of a recording activity that would be required in the registration system.
2. Give an example of a file maintenance activity for the registration system.
3. Give an example of a file update activity for the registration system.

**Wrap-up**

- Summarize master and transaction files. Reinforce student’s understanding of reference and summary data. Explain that many activities involved in business processes involve using, creating, or modifying data in transaction and/or master files. The next section describes some common activities involving files.