CHAPTER 4

THE REVENUE CYCLE

The ***revenue cycle*** is the set of activities in a business which brings about the exchange of goods or services with customers for cash. Most business transactions are conducted on a *credit* basis. Cash is received after goods are shipped to the customer. Your book discusses this as a two phase process: the *physical* phase in which goods or services are transferred **to** the buyer; and the *financial* phase in which the cash is received **from** the buyer. The first phase is handled by the ***sales order processing subsystem***, the latter by the ***cash receipts subsystem***.

The first section of the chapter provides an overview of the revenue cycle presented as a ***manual*** system. The second section examines various ways to ***computerize*** this effort, from traditional data processing to process reengineering. The last section considers microcomputer systems and ***control implications***.

The objectives of this chapter are:

- to recognize the fundamental tasks that must be performed in the revenue cycle regardless of the level of technology in place;
- to be able to identify the functional departments involved in revenue cycle activities and to trace the flow of revenue transactions through the organization;
- to be able to specify the documents, journals, and accounts that provide audit trails, promote the maintenance of historical records, support internal decision making, and sustain financial reporting;
- to understand the risks associated with the revenue cycle and to recognize the controls that reduce these risks; and
- to be aware of the operational and control implications of technology used to automate and reengineer the revenue cycle.

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I. Overview of Revenue Cycle Activities

The data flow diagram presented in **Fig. 4-1, on page 174,** represents **what** must occur in the ***sales order processing*** part of the revenue cycle. Eight different steps, or processes, are represented in the DFD and discussed in the narrative. Use both text and diagram to grasp what happens in each **process**. Note also the **entities** involved and the **data stores** or files used.

Regardless of how a particular business is organized, if it sells to its customers on credit, all of these eight steps must occur. This discussion focuses on the **work** to be done and the required flows of **data**, but not the methods used to do the work.

A. Manual Procedures

Fig. 4-2, on page 176-7, is a document flowchart of the same system. [Document flow charts were introduced in Chapter 2. Go back and review the symbols as presented in **Fig. 2-17, on page 68.**] Notice that the flowchart is divided vertically to represent the various departments involved in sales order processing. Some of the departments involved are not accounting related. Many parts of a business must contribute to the generation of revenue, including:

- *sales,*
- *credit,*
- *billing,*
- *warehouse,*
- *shipping,*
- *billing,*
- *inventory control,*
- *accounts receivable,* and
- *general ledger*.

Each of these departments exists to perform necessary tasks within the organization. Now is the time to clarify for yourself the role of each department. Ask yourself why there is a credit department, where it fits in the organizational structure, what it does, and why. Ask these questions for all of the above functions, not just the accounting-related ones.

In following the narrative, make note of the various **documents** prepared in the process, including who prepares the documents, the number of copies of each, what is done to the various copies (e.g., approval of the credit copy), and where the individual copies end up. Pay special attention to the occasions

Notes

on which various items are **reconciled**. Be sure you understand **what** items or numbers are being reconciled and **why**. The book will show many sample documents in these transaction chapters. If you work with some of these, they may look familiar. If not, now is a good time to learn about them. Most businesses do not prepare documents for the fun of it. When information is collected on a form, it is for a specific purpose. Examine the sample documents closely to be sure that you understand the purpose of the documents and what information appears on it, why, and why it moves through the organization as it does.

B. Sales Returns

All sales are not final! And procedures must be in place to handle sales returns. Various reasons can lead to returns from customers: incorrect goods shipped, defected or damaged product, late delivery, etc.

Fig. 4-8, on page 185, is a flowchart of sales returns procedures. Again, departments are separated vertically. Recognize how many parts of the organization are involved when a customer returns goods, and how well documented the effort must be.

C. Cash Receipts System

Booking the order and shipping the goods to the customer are good starts but . . . The ***cash receipts system*** is a very important part of the revenue cycle. It is also an extremely vulnerable part. Cash is **very liquid** and has been known to walk away if not tied down.

Again, an overview of the system is given in a data flow diagram. **Fig. 4-10, on page 188,** shows the procedures required to receive payment, update records, and get the money to the bank. Follow the narrative carefully. Pay attention to the parts of the organization that are involved and what happens in each. **Fig. 4-11, on page 189,** is the companion document flowchart.

D. Revenue Cycle Controls

Table 4-1, on page 192, presents the six classes of internal control introduced in Chapter 3–with specific control points for the two subsystems of the revenue cycle. The narrative is well done. Read it carefully.

Notes

Transaction authorization must occur at many points in the revenue cycle–to make sure that the transaction should occur. As a result, a specific OK must be given to sell on credit to new or repeat customers, to permit the return of goods for credit, and to record payments received.

The ***segregation of duties*** material is extremely important. No one person should have the ability, let alone the authority, to carry out a transaction from beginning to end. The separation of *authorization, recordkeeping,* and *custody of assets* must be maintained. This does not prevent fraud, but it does make collusion necessary. Many individuals who might pull a scam on their own would not solicit the help of someone else.

Although segregation of duties is conceptually valid, many firms are not able to separate all conflicting duties. The alternative to adequate separation of duties is increased ***supervision***. This works well in many small businesses where an owner/manager is highly involved in the day-to-day operations.

The discussion of the ***accounting records***, and the related controls, is particularly important. You need to know how the records "work." Chapter 2 introduced the basic accounting documents. In discussing control in the revenue cycle, specific attention is paid to aspects of the records that serve to preserve the ***audit trail***. Here is another place to ask yourself why things are done, what purpose is served, what problems are prevented. Pay attention to the different files involved and what they contain.

It is easy to think of the need to lock up valuable physical assets. But it is just as important to secure the organization's records. ***Access controls*** refer to both. And depending on the types of goods a firm handles, unauthorized access to the accounting records may be a greater risk than access to the physical assets.

One of the good things about a manual system is the frequency with which one part of the system *checks up on another* and can therefore catch errors. The importance of ***independent verification*** is discussed well.

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II. Computer-Based Accounting Systems

The events just described as part of a manual sales order processing system must happen even when technology is used in parts of the system–but the way in which they happen may be different. There are several ways in which a system can be computerized. In its simplest form, **automation**, technology can be used to increase the efficiency and/or effectiveness of tasks. In these cases, technology does the same things that are done in a fully manual system. At the other extreme, business processes and work flow are thoroughly examined and **reengineered**. A key concept behind reengineering is the identification and elimination of tasks that do not make a difference, *non-value-added* tasks.

This part of the chapter discusses the effects of technology on both sales order processing and cash receipts from simple data processing to the use of **point-of-sale** systems, that are prevalent today, **electronic data interchange (EDI)**, and the Internet.

Fig. 4-14, on page 197, presents the structure of the file that will be used in the discussion. Recognize that the assumption that each sales order is for only one item is unrealistic but it simplifies the idea.

A. Automating Sales Order Processing with Batch Technology

This is your first opportunity to see how a system can be automated. Read carefully and refer back to the manual system discussion when necessary.

Fig. 4-15, on page 199, shows a flowchart that is very similar to the first part of Fig. 4-2. The big difference lies in the fact that in Fig. 4-15, "computer department" replaces the functions of billing, inventory control, accounts receivable, and general ledger. Use this discussion to gain an understanding of how the system works–what happens and why!

B. Reengineering Sales Order Processing with Real-Time Technology

Computer systems which process input data *as received*, i.e., immediately, are said to operate ***in real-time***. The next discussion of the sales order system looks at systems which operate in real-time for most processing while updating key master files in batch mode.

Fig. 4-17, on page 202, represents this arrangement. Many of the formerly manual steps are now

Notes

automated and much of the "paper trail" is gone. Follow carefully the description of what tasks are carried out by the sales clerks. Some jobs that were done by other people in the manual and batch systems (e.g., credit approval) are now automated. This does not mean that the sales clerks approve credit, violating separation of duties. It means that a computer program evaluates a customer's credit based on criteria **decided by the credit manager and programmed into the system**. Note also that some hard copy is still needed. Often this is generated where needed (i.e., the stock release document is printed at the warehouse) and not physically moved around the organization. Note also the batch updating that is an integral part of the process.

Pay particular attention to the **advantages of real-time processing**. Time and accuracy can be greatly improved. **But** control must often be enhanced.

C. Automated Cash Receipts Procedures

The discussion of cash receipts begins with a simple example of the cash receipts subsystem–a batch system with direct file access. This reflects the fact that the most efficient processing of cash receipts continues to be in batches.

Fig. 4-18, on page 205, shows the key manual activities: the *mailroom, cash receipts (including the handling of the checks),* and *accounts receivable*. The automated effort performed by *data processing* is batch support. There is no good reason to process the receipts on-line.

D. Reengineered Cash Receipts Process

Basic to the concept of reengineering is the streamlining of operation. In this section, a modified cash receipts system is described. This example described the way in which the process can be automated with equipment and the use of a special type of software called an **expert system**. The combination of equipment and intelligent software greatly enhances the control over cash receipts and at the same time reduces costs.

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E. Point-of-Sale (POS) Systems

A current form of technology which is familiar to nearly all students is the use, in many retail businesses, of ***point-of-sale*** systems using terminals to do the job formerly done by cash registers. These systems are used extensively in department, drug, and grocery stores. Typically, these businesses deal in cash, checks, and bank credit card transactions. The POS systems handle the sales and update inventory in real time. See **Fig. 4-19, on page 207**.

The text discusses the activities in two groups: daily procedures and end-of-day procedures. One type of input technology makes the POS system as efficient as it is–the use of bar coding, especially the UPC (universal product code) format. The development of this system, the inclusion by manufacturer of the codes on packages, and the integration of these codes into individual store systems is a great time saver. The daily procedures involve scanning the sales items. The system calculates total, tax, etc. Inventory is reduced in real-time. And the sale is complete when the customer tenders payment. Credit card sales are approved on-line as are checks, and the sale is automatically recorded in the sales journal. Control over cash in a POS system is much stronger than in traditional sales systems. At the end of the day, the POS system greatly enhances the cash receipts processes.

F. Reengineering Using EDI

Given the proliferation of technology and widespread communication capability, it should come as no surprise that companies see great benefits in doing business, buying and selling, electronically. Chapter 7 introduces EDI, **electronic data interchange**. This method of doing business uses technology to transfer information about purchases, sales, billing, and payments–even the payment itself– using technology. This chapter barely hints at the power. Because there are increased exposures when one firm can access the computer of another, Chapter 16 considers the control issues related to EDI transactions.

G. Reengineering Using the Internet

The popularity of browsing the World Wide Web makes the WWW an ideal “place” to do business. Indeed, thousands of businesses have taken advantage of the exposure received by home pages to add a new

Notes

source of customers and business. Control questions are serious, however, as later chapters will discuss.

H. Control Considerations for Computer-Based Systems

The discussion of internal control issues that is presented here looks just at what is **different** because of the technology used. The same six objectives are relevant. **Pay close attention to the impact of technology on control.** With regard to the six forms of control, points to keep in mind include:

- In POS systems that accept bank credit cards, *authorization* occurs outside of the system.
- Segregation of functions in computerized systems moves from the accounting area to the systems area.
- In POS systems, *supervision* becomes more important than ever. Both cash and inventory are at risk and control must be increased.
- As accounting systems become more automated, the volume of paper declines and the dependence on magnetic media increases. This eliminates physical source documents and increases the need for adequate backup. In addition, it is increasingly important to restrict *access* to files. In POS systems, access to cash and inventory is also crucial. Typical methods are discussed.
- When an organization's *accounting records* are stored in magnetic form, their reliability and accuracy are very important. Again the issue of backup must be considered.
- *Independent verification* must be handled differently when the system is not manual.

There are a number of factors which complicate control in computer-based information systems. These concerns were not present in manual systems, and many organizations are not fully aware that when you switch to a computer-based accounting system–especially large scale systems–that these issues must be addressed. The most important factors relate to the involvement of non-accountants with the system

Notes

and the invisibility and automation of computer processing. These factors are:

- computer professionals who are unfamiliar with (or unconvinced of) the need for internal control;
- the normal lack of human intervention in the processing of data;
- the frequent centralization of an organization's database, which literally puts all eggs in one basket;
- the complexity of computer technology which makes it difficult for users to stay up to date;
- the possibility of the loss of the audit trail; and
- the increased chance of collusion.

These are factors that we should keep in mind. We will revisit them later.

III. PC-Based Accounting Systems

As described in the text, most are modular and reasonably flexible. Many come with numerous predefined charts of accounts for typical businesses from video rental stores to dentist's offices.

A. PC Control Issues

Several characteristics of microcomputer systems lead to special control problems. One of the reasons that PCs have become so popular is their ease of use. This means that individuals using computers are no longer systems professionals with the accompanying training. The term ***end-user*** has developed to describe most people who use desktop computers. The control issues discussed in the text are an outgrowth of this lack of training and the way in which PCs are used. Read this carefully. It may change your perspective.

Of particular importance in the microcomputer environment are the lack of segregation of functions, ease of access, and the security of the data and accompanying need for deliberate backups.

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Review Questions for Chapter 4: 1-20

Discussion Questions for Chapter 4: 1-17