CHAPTER 16

THE GENERAL LEDGER AND BUSINESS REPORTING (GL/BR) PROCESS

LEARNING OBJECTIVES

AFTER READING THIS CHAPTER, YOU SHOULD BE ABLE TO:

- DESCRIBE HOW THE BUSINESS PROCESSES PROVIDE DATA REQUIRED FOR GENERAL LEDGER (GL) UPDATES.
- UNDERSTAND HOW THE GL AND BUSINESS REPORTING CAPABILITIES SUPPORT AN ORGANIZATION'S EXTERNAL AND INTERNAL REPORTING FUNCTIONS.
- UNDERSTAND THE LIMITATIONS OF THE TRADITIONAL GENERAL LEDGER APPROACH IN CONTEMPORARY SYSTEMS.
- ANALYZE CONTROL ISSUES AND CONTROL PLANS ASSOCIATED WITH CLIENT/SERVER HARDWARE AND SOFTWARE USED TO IMPLEMENT THE GL AND RELATED BUSINESS REPORTING EXTENSIONS.
- DESCRIBE THE TECHNOLOGICAL TRENDS AND ADVANCES IN FINANCIAL REPORTING.

What is your best excuse for turning in an assignment late? Today's students are well past "the dog ate my paper." Instead, instructors frequently hear standard excuses such as "my email was not working," "the course management system was down," or "my broadband connection was slow." With the Securities and Exchange Commission shortening filing deadlines, CFOs also may be looking for new excuses for late filings. Odds are that other CFOs will not copy the excuse Chris Dittmar, CFO of Adair International Oil and Gas Inc., provided when he filed a request for deadline extension with the SEC. When Dittmar arrived for his first day of work—the day after Adair shareholders fired the previous CEO and CFO, he found the financial records for the company had vanished. Not only were key computers stolen, but those left behind had relevant files deleted. Even the backup tapes were gone! Dittmar's entire staff was dismissed due to the theft. With the cooperation (and documents) from Adair's trading partners and one former accountant, Dittmar was able to reconstruct the required data. Amazingly, considering the scope of his problem, Dittmar made the extended deadline.[1]

1 The source for this vignette is Alix Nyberg, "Filing Late: Excuses, Excuses," *CFO Magazine*, http://www.cfo.com, November 22, 2002.

In this chapter, we will explore the databases and information processes that must be in place to capture and store accounting and other business-related data and to produce internal and external business reports, including GAAP-based financial reports. When you have completed this chapter, you will likely appreciate how difficult a task Chris Dittmar faced at Adair.

Synopsis

Before you began your study of AIS, you probably would have defined the term *accounting information system* by describing the general ledger (GL) component. After all, the GL would be most familiar to you from your earlier accounting courses. Now that you have journeyed through some or all of the business processes in Chapters 10 through 15, you should appreciate that the GL is the repository where it all comes together, which is why this chapter appears after the related business processes were covered. We hope you also have developed a realization during your coverage of these earlier chapters that more than just GL/accounting-based reports are needed. Rather, the general area of business reporting that supports an organization's decision-making needs requires the ability to synthesize business information on operational and strategic performance derived from a multitude of sources.

As you study this chapter, consider the problems faced by Chris Dittmar. He would have had *more* severe problems if Adair had lost its entire reporting system and not just the accounting data. As it was, the GL database was lost but not the data in feeder systems (e.g., sales, accounts payable), not the trading partner data, and not the expertise of a former accountant. With these pieces of the GL and business reporting process, they were able to prepare the required reports.

Topically, this chapter's organization is the same as that of the business process chapters. We start by defining the boundaries of the GL, explaining its functions, and examining its organizational context. We then proceed to a discussion of the *logical* system features. Sections on extended business reporting processes, technology, and controls follow. We take the opportunity in this chapter to focus on using client/server hardware and software platforms for implementing the GL and business reporting process.

System Definition and Functions

Similar to the business processes covered in Chapters 10 through 15, the **general ledger and business reporting (GL/BR) process** is an interacting structure of people, equipment, methods, and controls that is designed to accomplish both operations and information system functions. Unlike the other business processes, the GL/BR process has fewer *operational* functions; it focuses mainly on *information* functions. Whereas the other processes perform important functions related to their "work" of providing goods and services to customers, the *work* of the GL/BR process is the processing and communicating of information.

What are the important information services functions of the GL/BR process? This chapter emphasizes two categories: general ledger activities and other business reporting.

The **general ledger (GL) process** comprises the following:

- Accumulating data, *classifying* data by general ledger *accounts*, and recording data in those accounts.
- Fueling the *financial reporting*, *business reporting*, and other reporting subsystems by providing the information needed to prepare external and internal reports.

In servicing the information needs of *managerial* reporting, the GL interacts with the *budgeting* modules, as we will see in the next section.

The **business reporting process** is concerned with the following:

- Preparing *general purpose*, *external* financial statements (e.g., the "conventional four" that you have studied in other accounting courses: the balance sheet, income statement, statement of owner equity changes, and cash flow statement).
- Ensuring that the external financial statements conform to GAAP; therefore, among other things, the statements must contain appropriate *footnote disclosures*. E-BUSINESS
- Generating Web-based forms of key financial statement and related business reporting information for dissemination via the Internet.
- Supporting the generation of both ad hoc business reports and predetermined business reports that support operational and strategic decision making.

Organizational Setting

In this section, we examine the placement of the GL/BR process in the organization and the interactions with its relevant environment. We will describe the roles of the new "players" who are involved most directly with the GL/BR process and will review the horizontal and vertical information flows within an organization.

Before we begin, we should define a term that is used in this section and throughout the chapter. A **feeder process** is any business process that accumulates *business event* data that are then communicated to and processed within the GL. Accordingly, the feeder processes include all those discussed in the earlier business process chapters. In addition, we show the treasurer as a feeder because the treasurer furnishes the GL with updates for *investing activities* and *financing activities*.

Horizontal Perspective of the General Ledger and Business Reporting Process

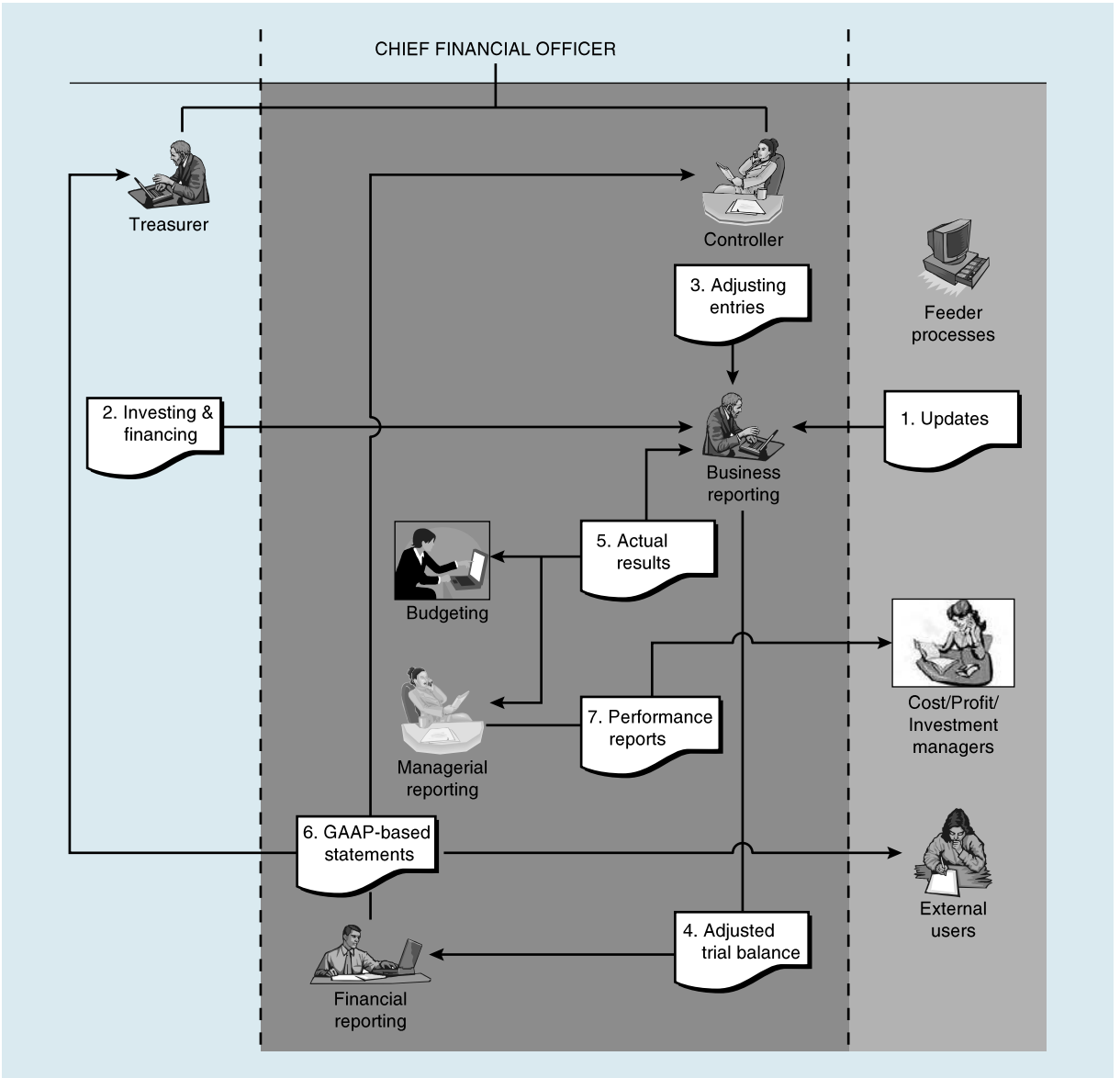
Like their counterparts in earlier chapters, Figure 16.1 (pg. 576) and Table 16.1 (pg. 577) show the placement of the general ledger and business reporting functions in the organization and the horizontal information flows between the GL/BR process and other entities. Take some time now to review them before we highlight the key points.

Let's begin by examining some of the horizontal flows appearing in the figure. You should first note that flow 1 consolidates several different updates from the *feeder processes* studied in other business process chapters. However, the individual updates will be shown as separate data flows in the logical data flow diagrams (DFDs) appearing in the next section.

As we mentioned, another feeder appearing in Figure 16.1 is the treasurer. Whereas updates for *operating activities* are depicted by flow 1, the *investing* and *financing* activity updates are shown by flow 2. Moving to flow 3, we have *assumed* that all adjusting entry updates come from the controller. Obviously, such notifications could come from other sources instead. For instance, the financial reporting officer might provide the adjustments mandated by GAAP. Another example is depreciation adjustments, which in some companies come from a separate fixed asset system, but in many contemporary systems, they are simply generated automatically by the system supporting the GL. The descriptions in Table 16.1 of the remaining flows in Figure 16.1 should be fairly self-explanatory.

At this point, we also should consider how these information flows are affected by integrated *enterprise systems* such as ERP systems. First, for flow 1, which is the entry of ENTERPRISE SYSTEMS

FIGURE 16.1 Horizontal Perspective of the General Ledger and Business Reporting Process



data from the *feeder processes*, the ERP system *automatically* updates the database to reflect the journal entries for the GL and to capture the information needed for other business reporting by using embedded update rules within the system. In other words, the business reporting department does not have to enter the data—it is already entered directly as business events are recorded in the business processes. Those flows to the GL are often labeled "GL update." Similarly, for flow 2, the ERP system sends the entries to the GL when personnel in the treasurer's office record investing or financing activities in the treasury module of the ERP system. The output side from the ERP systems operates in much the same manner. Flows 6 and 7 are information that can be extracted by the respective departments or constituencies using either preestablished reporting forms or through queries of the enterprise database.

TABLE 16.1 Description of Information Flows

Flow No.	Description
1	Business processes (feeder processes) send updates to the business reporting department.
2	Treasurer notifies the business reporting department of investing and financing transaction activities.
3	Controller notifies the business reporting department of various adjusting entries.
4	Adjusted trial balance figures are sent from the business reporting department to the financial reporting officer.
5	Actual results are sent from the business reporting department to the budgeting and managerial reporting managers; the actual results will be one of the inputs used in formulating next period's budgets.
6	The financial reporting officer sends GAAP-based financial statements to the treasurer, controller, and various external constituencies (e.g., owners, potential investors, banks, potential lenders).
7	The managerial reporting officer sends performance reports to various cost centers, profit centers, or investment centers.

E-BUSINESS

Note that flow 3 is the only entry from Figure 16.1 that needs to be made directly into the GL. The automation of the various activities clearly reduces the number of people needed to handle the mundane accounting entry work in the business reporting department. Rather, the department can focus on the provision of more complex and interesting information that can be used to aid in the improvement of the effectiveness and efficiency of the organization's operations and strategies. We will explore some of the possibilities within this extended business reporting capability later in this chapter.

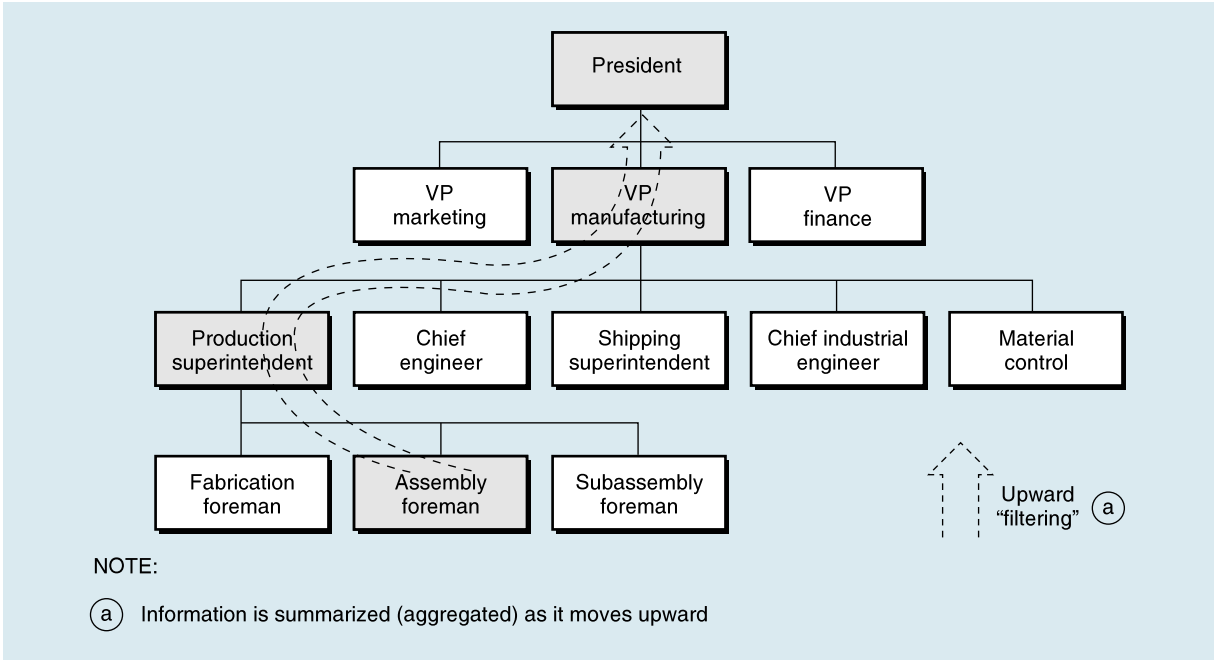
As we look to emerging capabilities, we also should consider how the external reporting model is changing. Increasingly, organizations are deciding to make their financial information available on the Internet. Currently, little standardization to this information exists between companies. Nonetheless, it should be noted that flow 6 increasingly includes the release of information to corporate Web sites.

From prior chapters, you should be familiar with the typical division within the finance function between the treasurer and the controller. To emphasize differences in their functional responsibilities, we have shown four managers reporting to the controller. In some organizations, two or more of the four functions might be combined into a single job function. In others, managers might exist who are not shown in the figure, such as the manager of a tax department.

One objective of Figure 16.1 is to portray the organizational alignment of certain key entities within the finance function. However, recalling our earlier definitions of the GL/BR process, you should recognize that only the business reporting department and the financial reporting officer are technically *within* the GL/BR process as it has been defined. Therefore, when we discuss the logical system in the next section, the treasurer, controller, budgeting department, and managerial reporting officer will all be shown as external entities lying *outside* the *context* of the GL/BR process.

Before you leave Figure 16.1 ask yourself, "What are the functions of the four managers reporting to the controller?" We already have described the functions of the business reporting department and the financial reporting officer in the preceding section (see the definitions of *general ledger process* and *business reporting process*, respectively). The *budgeting department advises and assists the cost center*, *profit center*, *and*

FIGURE 16.2 Responsibility Accounting Performance Reporting



Source: Adapted with permission from James D. Wilson, "Human Relations and More Effective Reporting," *NAA Bulletin* (May 1961): 13–24.

investment center managers in preparing the budget.[2] The budgeting department should not actually prepare the budget estimates; it should offer technical advice to the *operating line managers* as they develop the budgets for their centers. Good participative management practice argues that the *responsibility* for budget preparation should fall to the operating center managers who later will be held *accountable* for budget variations. One final comment about the budgeting function is in order. Because the "advise and assist" role of the budgeting department cuts across all functions in the organization, it is not uncommon in practice to see the department placed much higher in the organization chart, perhaps on the same horizontal level as the president or CEO.

The **managerial reporting officer** has responsibilities similar to those of the **financial reporting officer**. The latter possesses expertise in the area of financial reporting to external parties, and the former performs a similar role in respect to preparing internal reports to assist management decision making (this distinction may sound familiar from your earlier studies of *financial accounting* versus *managerial accounting*). Many of the reports prepared by the managerial reporting officer are called **performance reports** because they compare actual performance with budgeted expectations. Often, these reports are part of a managerial reporting system known as a **responsibility accounting/reporting system** because it is tied to the hierarchy or chain of responsibility/authority reflected by the firm's organization chart. In such a system, as information is reported upward, the level of detail is filtered, meaning that figures are aggregated (summarized) as they are reported to successive management levels. Figure 16.2 shows a sample *performance reporting* flow for the production arm of an organization that uses a *responsibility accounting/reporting* model. An example of this flow

2 We assume that you understand the terms cost center, profit center, and investment center from your study of managerial/cost accounting.

may include a report of the details of today's production output for the assembly foreman, with weekly, monthly, and annual aggregations reported to the production superintendent, VP manufacturing, and president, respectively. In that example, it should be clear to you that the most detailed reporting of daily amounts will not be significant to strategic decisions that are made at the other end of the reporting spectrum, the president. Conversely, the annual aggregations provide little useful information for the work the assembly foreman has to do on a daily basis. Thus, the upward filtering of details provides each decision maker the information needed for his or her specific job.

ENTERPRISE SYSTEMS

As we will be discussing later in this chapter, the major ERP vendors are providing the additional functionality to support much of this additional business reporting demand for performance reporting. The integration of this functionality allows these reports to be easily generated from information captured by the business processes and maintained at the business event level in the enterprise database.

Horizontal and Vertical Information Flows

In Figure 1.9 in Chapter 1 (pg. 24), the distinction between horizontal and vertical information flows was introduced at a conceptual level. Perhaps now is a good time to review the concepts shown in Figure 1.9, and enhance that figure based on our study of AIS to date. Figure 16.3 (pg. 580) is intended to do exactly that.

Along the bottom of Figure 16.3, we can trace the horizontal transaction flows as they progress from left to right through the various *operations systems*, culminating in the GL/BR process, and resulting in reporting to external parties. We also see the vertical reporting dimension (in the form of internal performance reports prepared from information supplied by the GL and through budgeting) flowing upward in each of the principal functional columns. This figure demonstrates information development through the reporting process, data accumulation (horizontal flows) as the data flow from the initiating event, and aggregation (vertical flows) as the data flow up through the management levels of each functional area of the organization.

Logical System Description

Once again in this chapter, we use DFDs to explain the *logical* features of the GL/BR process. Study the DFDs carefully to make sure that you understand their contents.

Discussion and Illustration

We start with the highest-level view of the GL/BR process, the *context diagram*, as shown in Figure 16.4 (pg. 581). Take some time now to study the figure.

Do you agree that there is nothing really new here? Note the *business event* data flows from the business processes discussed in Chapters 10 through 15. If you are uncertain about the nature and timing of any of these updates, go back to the appropriate business process chapter and review them. Note also the investing and financing updates coming from the treasurer and the adjusting entry updates coming from the controller. Note that each system output data flow was shown earlier in the discussion of information flows (see flows 5 through 7 in Figure 16.1 on pg. 576).

ENTERPRISE SYSTEMS

We should define the term *journal voucher*, which appears in the data flow "Adjusting entry journal vouchers." In general terms, a **journal voucher** is an internal source document used to notify the GL to make an accounting entry. In addition to showing the entry's details, the journal voucher should be signed by the person(s) authorized to initiate the entry. Remember, in the case of an *enterprise system*, this

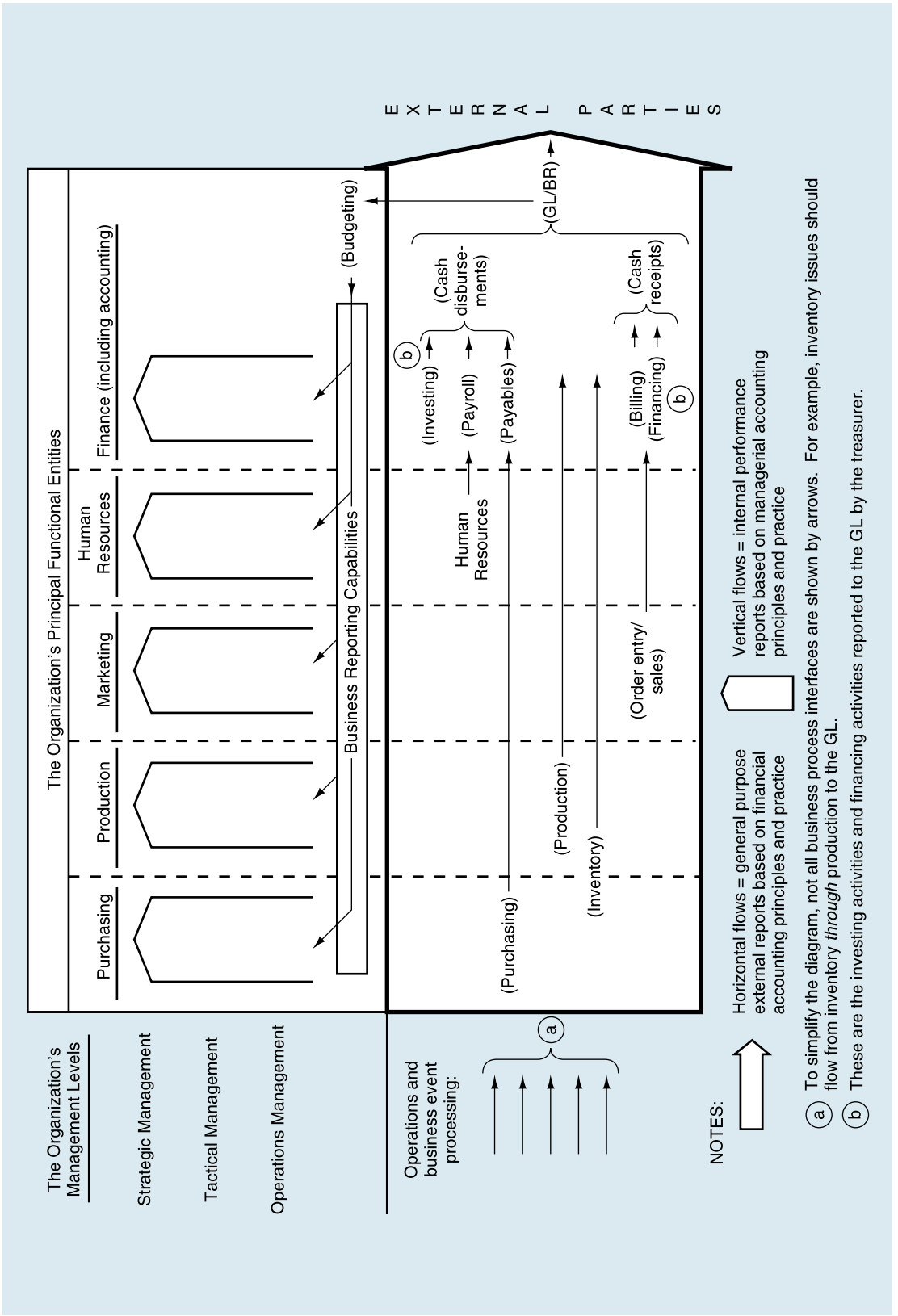
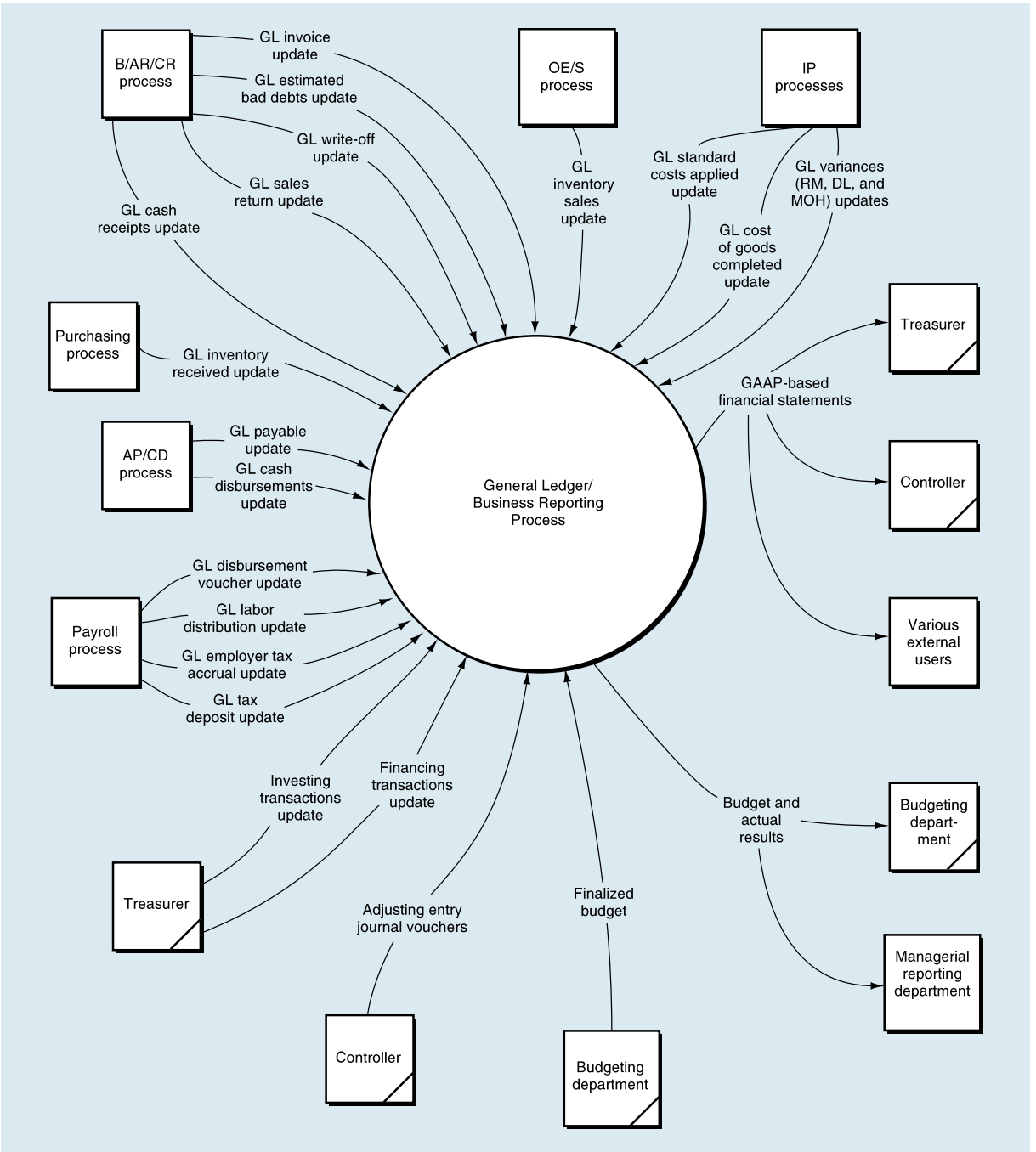


FIGURE 16.3 Horizontal and Vertical Information Flows

FIGURE 16.4 General Ledger/Business Reporting Process—Context Diagram



voucher document will likely be electronic, the person completing the adjustment will generally enter it directly into the system, and the signature will be represented through a capturing of the electronic identification of the individual making the entry (i.e., *electronic approval*). Although the DFDs use the term *journal voucher* only in connection with adjusting entry updates from the controller, you should recognize that any of the

business event updates from the feeder processes might also take the *form* of a journal voucher.

Let's pursue that last point. *Logically*, each business event from a feeder process can be posted *directly*, *individually*, and *immediately* to the GL. As a practical matter, *physical* implementations will vary. For example, the flows from the feeder processes could comprise *summaries* of a number of business events posted *periodically* at the end of a day, week, or month. For example, the B/AR/CR process may collect the data related to sales in the *sales event data* store and send the summary of that data to the general ledger. The resulting summarized entry to the general ledger would include postings to sales and accounts receivable.

ENTERPRISE SYSTEMS

In an *enterprise system*, this business event data is recorded separately for each sale within the module designed for that business process (e.g., sales, accounts receivable). In some enterprise systems implementations, this business event data could be batched during sales (or accounts receivable) processing and then used to update the GL database at one point in time. If the GL processing is done through this type aggregation of the source records (e.g., business events), the impact of many business events will be posted as a batch, and the balances in the GL accounts will be adjusted accordingly. However, the enterprise system will maintain data for each individual business event in the underlying business process database, and a user can view this detail by simply drilling down on the GL balance data. At this point, however, let's continue to concentrate on the logical connections of the individual feeder processes with the GL.

Figure 16.5 shows the GL/BR process level 0 DFD. Again, this figure should require little explanation. Let's take a moment to talk about bubble 1.0, "Validate business event updates." What might be involved here? Some examples follow.

- We want to check business event updates to make sure that they come from the correct feeder process. Do you agree that this check addresses the information system goal of ensuring event data *input validity?*

CONTROLS

- We also want to make sure that no business event updates have been overlooked (recall the discussion of *input completeness* in each business process chapter). Finally, we verify the debit and credit equality of "halves" of entries flowing from different systems (e.g., from the receipt of inventory and the vendor invoice). What control goals are we trying to achieve with this kind of verification? If you answered input completeness (IC) and input accuracy (IA), you were right on the money.[3]

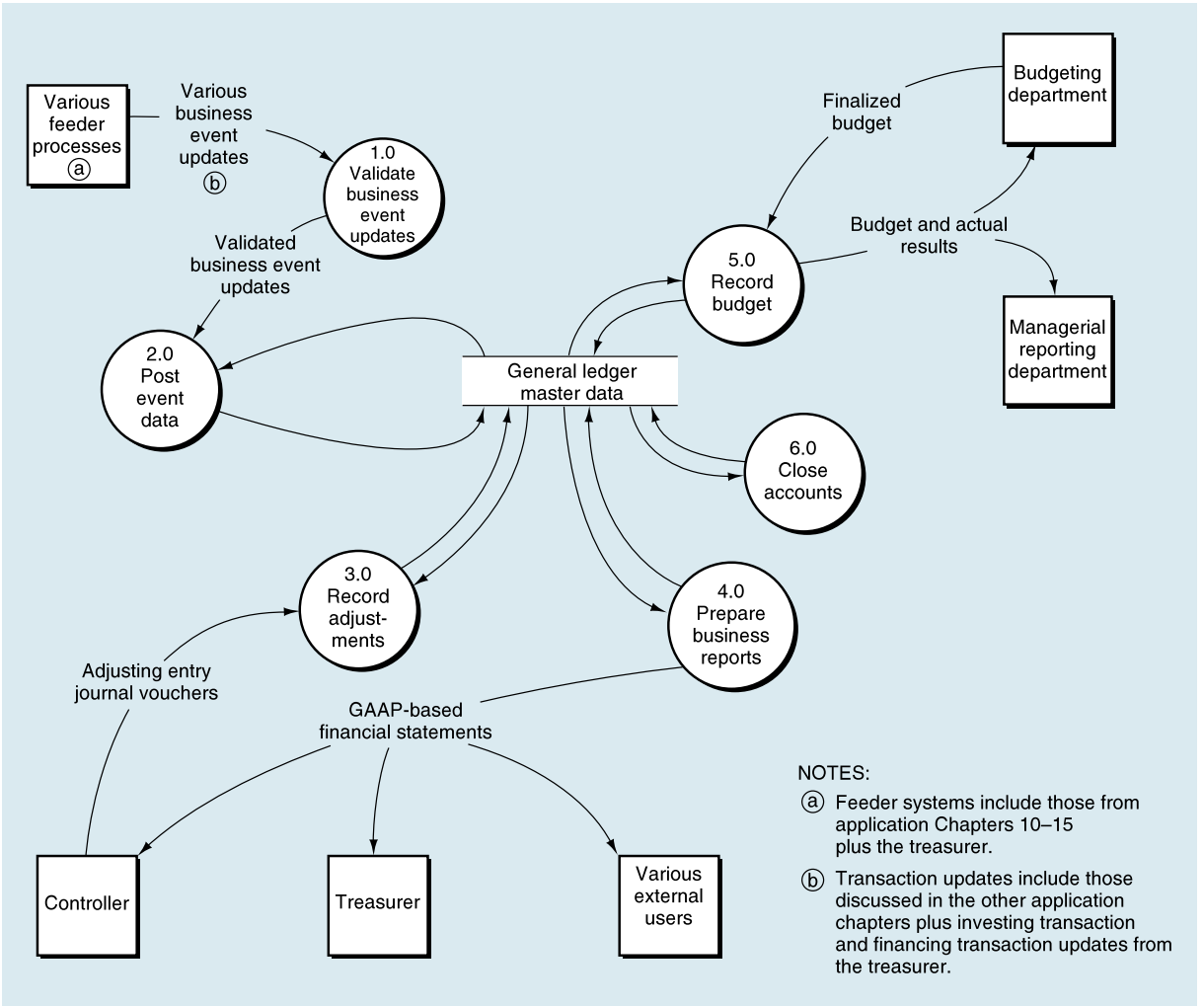
Are bubbles 2.0 through 4.0, plus 6.0, reminiscent of the *bookkeeping/accounting cycle* that you studied in earlier accounting courses? They should be! The only comments that we offer here follow:

E-BUSINESS

- You should recognize that process 4.0, "Prepare business reports," involves several steps. These steps *might* include activities such as preparing a *worksheet*, drafting financial statement footnotes, formatting the financial statements and footnotes, and compiling the financial statements into an attractive and informative reporting package. For general distribution, these financial statements and related information are often posted to the entity's Web site. Frequently, at this stage, the financial statements will be reformatted to take advantage of embedded links that can be placed into the Web page. For instance, some companies provide hot links in the

3 Note that this problem is alleviated in many contemporary systems through the use of a clearing account, as described in Chapter 13.

FIGURE 16.5 General Ledger and Business Reporting Process—Level 0 Data Flow Diagram



financial statements directly to the financial statement footnotes to make it easier for users to tie the footnotes with specific financial statement accounts.

- Process 6.0, like some that you encountered in previous chapters, is *triggered* by a temporal event (i.e., the data flow into the process from the GL master data), rather than by a data flow from another process or from an external entity. Specifically, at an appropriate *point in time*, the condition of the GL accounts indicates that the accounts should be closed before repeating the accounting cycle for the next accounting period.

Our final comment about Figure 16.5 concerns process 5.0, "Record budget." Because GAAP-based external reports seldom, if ever, include budget information, we might have excluded process 5.0 and its related data flows. However, we included it to provide one example of how the GL/BR process can "fuel" reporting systems that rely on the information that has been aggregated in the system—in this case, providing information related to both budgeted and actual results.

The General Ledger Master Data

The **general ledger master data** contains summarized information of all of an organization's business event data. The main inputs to the GL consist of totals, extracted by event type, from the business event data captured in the various feeder processes discussed earlier. Adjusting entry journal vouchers, originating with the controller, are the other principal source of entries.

In traditional accounting systems, the GL's utility has depended largely on a well-designed and complete *chart of accounts*. The more sophisticated the *data classification and coding* scheme used for the chart of accounts (a subject discussed in the next section), the broader the range of financial reports that can be produced. For example, the first three digits in an account number might show the account's general classification. Digits in other fields then can indicate the responsibility center, project number, and so on. This way, job or plant financial statements can be generated, in addition to the consolidated statements that are made available to outside users.

CONTROLS

The source code field of each GL entry provides a beginning point of reference for developing a proper **audit trail**. The code gives the auditor a means of tracing back to the individual business events that have been aggregated into the GL balances. For instance, using a batch number, an auditor can follow an entry to the appropriate batch file. From there, the batched event data can be identified. The path then leads to the original source document. Journal vouchers can be substantiated by using the source code to locate the specific input form used by the controller (or another employee in the controller's office).

Note that in addition to storing the entries of the current period (both monthly and yearly activity are usually maintained in computer-based GL systems), beginning-of-period and year-to-date balances also are available.

ENTERPRISE SYSTEMS

Because the source business event data is maintained in an *enterprise system*, the user can select any beginning and ending date to accumulate information for any period of time. Thus, if a manager wants to examine sales over a two-week, three-month, or any other period, the information can be aggregated through a query to provide the manager the precise information of interest.

Coding the General Ledger Chart of Accounts

The discussion of *classifying* and *coding* data appeared in Chapter 5. You might want to review that material before proceeding. Do any of the coding systems presented in Chapter 5 seem particularly germane to the GL chart of accounts? What about *hierarchical coding?* To illustrate, let's suppose the number 1113 was assigned to the account "cash in bank." Moving from left to right, the hierarchy might be as follows:

1XXX = assets
X1XX = current assets
XX1X = cash accounts
XXX3 = cash in bank

Following this "system," 1111 might mean petty cash, 1112 might mean change fund, 1121 might mean trade accounts receivable, 1122 might mean receivables from officers, and so on.

In designing a coding scheme for a chart of accounts, you should consider the following questions:

- On which financial statements, if any, must an account appear?
- In which category on a financial statement (e.g., current asset or fixed asset) should it appear?

- In what order should the accounts appear (e.g., liquidity or maturity)?
- Which accounts should be aggregated for presentation (e.g., show one cash balance)?
- Which internal reports will be required (e.g., departmental or cost center *performance reports*)?

Limitations of the General Ledger Approach

Recall that the Chapter 5 section "Two Approaches to Business Event Processing" includes a discussion regarding the limitations of traditional file processing approaches and the emerging focus on event-driven systems (you may want to review this material before proceeding). The discussion focused on the limitations that come from disjoint stores of data for financial and nonfinancial information, and the elimination of source data after business event information has been added to account summaries. The traditional GL ledger approach has been a primary suspect as the source of many of these problems.

If you think about the driving force in constructing a chart of accounts, the goal is to add structure to the classification of financial information. This is a good thing, but the problem is that in implementing the chart of accounts, the focus usually becomes one of "How can we classify every piece of business event data as fitting into a specific account?" And, the formation of the coding scheme (as discussed in the previous section) is based on summary aggregation requirements for creating financial reports. In reality, most GL systems capture the chart of accounts number and the debit or credit entry, and the remainder of the information about a business event is discarded.

Although other business event information may be captured in separate systems operated by other departments, such as marketing, any such nonfinancial information becomes separated from the financial information. After the end-of-period closings are completed for the GL, the detailed business event-level data are eventually purged from the system—the interest being only in maintaining correct current balances for each entry in the chart of accounts. At this point that, even if a link exists between the financial and nonfinancial information in the business event data, the relationships are lost. From that point on, information for decision making is limited to only that information captured in the accounts as specified by the chart of accounts. If you decide you want more detailed information than the chart of accounts provides, historical business events generally cannot be reconstructed. The information can be captured in the future only if alterations are made to the chart of accounts and the programs that use those accounts (i.e., the financial report generator).

As an example, let's take the hierarchy discussed in the preceding section and adapt it to sales. The hierarchy might start out as follows:

7XXX = revenues
X1XX = merchandise sales

After a while, one of the corporate managers decides that the system needs to capture sales by region. We could add *region* as a third digit, but that doesn't fit our hierarchical structure very well. Logically, the second digit needs to be region so that all types of revenues can be grouped by region. We can revise our system, but keep in mind that after we make this change, all the programs using the data also will need to be revised to recognize the new system—no small task. The new system may look as follows:

7XXX = revenues
X1XX = sales region
XX1X = merchandise sales

Just when we think we satisfied the manager's needs, the corporate sales manager decides that merchandise sales should be coded by another digit representing each of six sporting goods categories. Again, we revise our coding scheme and update applicable programs. Our scheme now looks like this:

7XXX	=	revenues
X1XX	=	sales region
XX1X	=	merchandise sales
XXX1	=	golf merchandise sales

Now the real headaches begin. The sales manager has decided it is imperative that the coding scheme includes a digit to represent each unique salesperson. But, we don't have any digits left in the coding scheme! If we add a digit, we will have to completely revise our entire chart of accounts to a five-digit system, not just change the revenue accounts.

Changing account numbers and account structure can raise a potential information use problem: *comparability*. If a GL account number is changed, it must be changed not only in the GL but also in every place in the accounting system that it is used, including all subsystems and historical references. If the account number is not changed in historical details, comparative information from prior periods will not be synchronized. Users may need to develop an external mapping (using a spreadsheet, for example, with column A containing the new account numbers and column B containing the old account numbers) to allow comparison of current revenue accounts (from our previous example) to the corresponding accounts from the periods prior to the account number change. Otherwise, the system's users can potentially lose the richness of comparative financial information for many years.

These are just some of the problems that charts of accounts create in limiting the flexibility of information aggregation and analysis. We already noted the limitations on other nonfinancial information. You will recall that in Chapters 5 and 6, we noted the push toward database-driven systems—and in particular, event-driven systems. This discussion should add to your understanding of why the rapidly expanding information needs of management are creating conflict with traditional GL structures. Later in this chapter, we will focus briefly on using database technology to perform our traditional financial report generation processes without having to limit the capturing of broad event data.

ENTERPRISE SYSTEMS

Before going on, we will address one issue more explicitly. When we talk about the advantages of database-driven systems, you should keep in mind that this broader range of systems has similar implications for ERP systems because they are database driven and database enabled. Thus, as we move toward an *enterprise system* environment, the chart of accounts becomes increasingly less important. If it exists at all, it will probably be the concatenation of several fields in a database record that can be changed more easily simply through adding fields to the database to handle necessary information relationships such as the salesperson number in the previous example.

Technology-Enabled Initiatives in Business Reporting

We explore a variety of topics in this section that demonstrate how technology has simplified much of the financial reporting process and enabled a far greater level of business reporting to support management decision making. We begin with three topics related to enterprise systems. The first is simply a brief look at the financial reporting

module in an ERP system, whereas the second and third topics relate to contemporary extensions to ERP systems to accommodate contemporary business reporting interests—that is, balanced scorecard and business intelligence. The fourth topic also is related to enterprise systems in that the major vendors are currently working to build in the functionality for XBRL for business reporting via the Internet and the standardization of this reporting for all entities. The fifth topic, public databases, relates to services that are available for problem solving on issues ranging from the determination of proper accounting practices to aggregating information for benchmarking against other organizations.

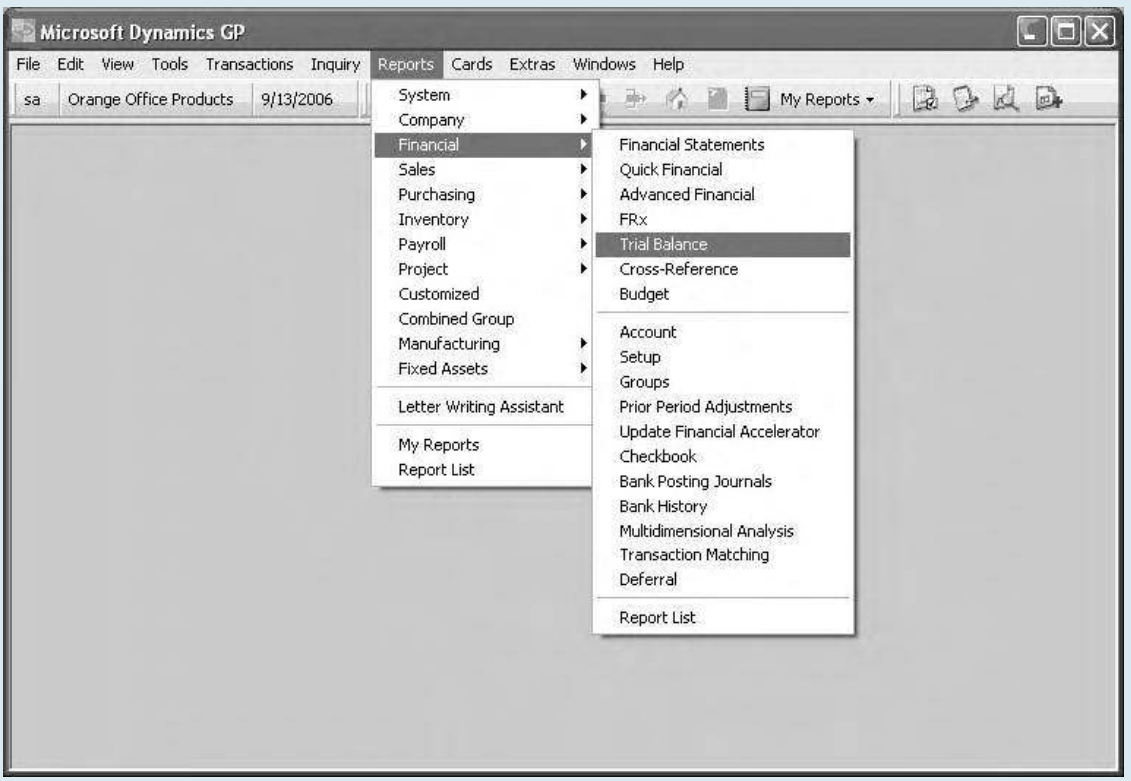
ERP Financial Module Capability

ENTERPRISE SYSTEMS

Although we discussed earlier in this chapter the integration of business reporting in ERP systems (as well as integration of information from other business process activities), conceptually this integration may still be a bit foggy in your mind. For purposes of clarification, let's take a closer look at integration within the financial module.

Figure 16.6 shows the reports screen for Microsoft® Dynamics™ GP ERP software. We have exploded the menu options for the financial section to show you the wide range of options that are available in the software just for the financial module.

FIGURE 16.6 Financial Reporting Menu for Microsoft® Dynamics™ GP Software



Source: Reprinted with permission from Microsoft® Inc.

In addition to the Financial option, the first-level menu options for all reports are displayed. These options include links to the information processing capabilities that are related to the business processes we have discussed in this text; for example, the Sales menu item (which could also be described as order-to-cash) will include the processes for Order Entry/Sales and Billing/Accounts Receivable/Cash Receipts. Note also that the financial reports go beyond just the trial balance and include other reports such as budgeting, a variety of financial reports, and a custom report writer (FRx) for when standard reports will not meet your needs.

ENTERPRISE SYSTEMS

CONTROLS

This multitude of options should give you some understanding of the complexity and magnitude of ERP systems. You also might have realized during this discussion that all users do not need all these options. For security reasons as well as ease of use, you would want to limit the access to menu items to only those needed by a given user to perform his or her responsibilities. This will mean setting up the security for an individual user to limit the menu options that appear. This becomes fairly detailed, as you may want to allow a given user (or group of users) to have different privilege levels for different information—that is, view access, write access, entry access, and/or change access. Sometimes users only need to be able to view (i.e., read) information in one area of the system, whereas they may need to be able to enter new event data or be able to change existing records of event data in other areas of the system. All this must be carefully specified in the user's profile to set up the system limitations for that specific user. Normally, this profile is set up with the user's ID to be automatically initiated at logon. This is implemented via *logical access controls* such as those in the *security module*.

Balanced Scorecard

ENTERPRISE SYSTEMS

Balanced scorecard is a methodology for assessing an organization's business performance via four components: (1) financial, (2) internal business processes, (3) customers, and (4) innovation and improvement activities. The financial aspect focuses on more traditional measures of business performance related to how shareholders view the organization's performance. The internal business processes relate to the organization's capability to identify its core competencies and to assess how well it performs in these identified areas of competency. The customer component focuses on identifying how customers perceive the organization in terms of the value that it is creating for them. Innovation and improvement activities are monitored to assess how the organization is continuing to improve and how it is creating additional value.

The concept of *balanced scorecard* has been around for several years, but it is only within the last few years that ERP vendors have focused on integrating this functionality and in turn making assessment a reasonable possibility. Fundamental to incorporating effective *balanced scorecard* assessment is the aggregation of varied data in a *data warehouse* (discussed in Chapter 5) that can then be analyzed using powerful analytical tools—that is, *business intelligence* tools as discussed in the next section. Because an ERP system provides the innate capability to aggregate the necessary data in its underlying database, linking this data with other data to create the necessary *data warehouse* is a logical and efficient way to provide *balanced scorecard* capabilities. Accordingly, all the major ERP vendors have announced, and many have included, product integration to provide the *balanced scorecard* functionality. Take a few minutes before going on to reflect on how the data captured in the various business processes could be used to support assessment in each of the four areas underlying the *balanced scorecard*.

Business Intelligence

ENTERPRISE SYSTEMS

Fundamental to providing *balanced scorecard* functionality is the development of *business intelligence* functionality within accounting and ERP systems. **Business intelligence** is the integration of statistical and analytical tools with decision support technologies to facilitate complex analyses of *data warehouses* by managers and decision makers. A *business intelligence* solution within an accounting and ERP system should provide the tools, including an interface and access to data, for effective business decision making.

A typical ERP *business intelligence* module provides information details in a hierarchical form. At the top level, the user generally receives summary information on selected key performance indicators and can arrange this information into a variety of reports for analysis, performance measurement, and/or business modeling. From these summary reports (presented in electronic format), the user can subsequently drill down through further levels of detail to determine the key underlying factors driving performance. Although on the surface this does not seem complex, the reality is that the *business intelligence* modules use highly complex analytical techniques to search for relationships in the data that will provide insight for decision making.

eXtensible Business Reporting Language (XBRL)

E-BUSINESS

Perhaps the most exciting technology-driven advancement in business reporting is that of *XBRL*. **eXtensible Business Reporting Language (XBRL)** is an *XML*-based language consisting of a set of tags that are used to unify the presentation of business reporting information into a single format, easily read by almost any software package, and easily searched by Web browsers. Technology Summary 16.1 (pg. 590) details the background of XBRL and the impact it has on financial reporting.

ENTERPRISE SYSTEMS

As described in Chapter 3 (pg. 86) *XML* is a generalized system for the customized tagging of data to enable the definition, transmission, and interpretation of data over the Internet. *XML* uses predefined tags to let information providers create uniform information for users. In this case, XBRL provides uniformity of financial statement and other business reporting information to simplify delivery of the information via the Web, enhance the searchability of the information, and enable easy transfer of information among software packages for update, analysis, and so forth. The intent is that, with a unified format, the ERP vendors (and other accounting software vendors) can add functionality that will automatically generate XBRL-based financial reports as well as any other business report. This makes it easier (less costly and complex) to deliver business information via the Web. Thus, accessibility of information should increase for external users of business reports, and the information should be easier to decipher, analyze, and use for comparisons. Technology Application 16.1 (pg. 591) provides an example of XBRL tags, from a trial balance *instance document*. An **instance** or **instance document** is an XBRL document that contains all information, including tags, about the occurrence of an item—for example, a trial balance *instance document* would be the data and tags necessary to produce a trial balance at a specific point in time. After studying Technology Application 16.1, you should have an idea of how XBRL tags identify many characteristics of a data item and how those characteristics flow with the data because they are attached as tags.

Several regulators have already begun accepting and/or requiring filing to be completed in an XBRL format. In the U.S., the FDIC, the Federal Reserve, and the Comptroller of the Currency currently require banks to report using XBRL. The U.S. Securities and Exchange Commission recently announced that its public company reporting system

Technology Summary 16.1

XBRL: TRANSFORMING BUSINESS REPORTING

XBRL is a language for the electronic communication of business and financial data, which is revolutionizing business reporting around the world. It provides major benefits in the preparation, analysis, and communication of business information. It offers cost savings, greater efficiency, and improved accuracy and reliability to all those involved in supplying or using financial data.

XBRL is an open standard, free of license fees, developed by a nonprofit consortium consisting of more than 450 leading companies, associations, and government agencies around the world. Anyone interested in applying XBRL to business reporting processes can receive a license from XBRL International.

The idea behind XBRL, eXtensible Business Reporting Language, is simple. Instead of treating financial information as a block of text—as in a standard Internet page or a printed document—it provides an identifying tag for each individual item of data. This is computer readable. For example, company net profit has its own unique tag.

The introduction of XBRL tags enables automated processing of business information by computer software, cutting out laborious and costly processes of manual re-entry and comparison. Computers can treat XBRL data "intelligently": they can recognize the information in a XBRL document, select it, analyze it, store it, exchange it with other computers, and present it automatically in a variety of ways for users. XBRL greatly increases the speed of handling financial data, reduces the chance of error, and permits automatic checking of information.

Companies can use XBRL to save costs and streamline their processes for collecting and reporting financial information. Consumers of financial data, including investors, analysts, financial institutions, and regulators can receive, find, compare, and analyze data much more rapidly and efficiently if it is in XBRL format.

XBRL can handle data in different languages and accounting standards. It can flexibly be adapted to meet different requirements and uses. Data can be transformed into XBRL by suitable mapping tools, or it can be generated in XBRL by appropriate software. XBRL offers major benefits at all stages of business reporting and analysis. The benefits are seen in automation, cost saving, faster, more reliable and more accurate handling of data, improved analysis, and in better quality of information and decision making.

XBRL enables producers and consumers of financial data to switch resources away from costly manual processes, typically involving time-consuming comparison, assembly, and re-entry of data. They are able to concentrate effort on analysis, aided by software that can validate and manipulate XBRL information. As just one example, searches for particular information, which might in the past have taken hours, can be completed with XBRL in a fraction of a second.

Those who stand to benefit include all who collect business data, including governments, regulators, economic agencies, stock exchanges, financial information companies, and the like, and those who produce or use it, including accountants, auditors, company managers, financial analysts, investors, and creditors. Among those who can take advantage of XBRL include accountancy software vendors, the financial services industry, investor relations companies, and the information technology industry.

Source: http://www.xbrl.org/whatisxbrl/. Copyright © 2002 XBRL International. All Rights Reserved. http://www.XBRL.org/legal/.

will be updated to an interactive system using XBRL.[4] Globally, the regulators that are currently using or investigating the use of XBRL are too numerous to list.

The information in Technology Summary 16.1 places XBRL in the context of business reporting and should give you some sense of the scope of XBRL's impact on the reporting, reading, and analysis of financial information.

4 "SEC to Rebuild Public Disclosure System to Make It 'Interactive,'" SEC Press Release 2006-158, September 25, 2006.

TECHNOLOGY APPLICATION 16.1

AN EXAMPLE OF XBRL

You have heard much about XBRL, but would you recognize the codes if you saw them?

The following excerpt is an example of an *instance document* for an XBRL-GL trial balance. The excerpt relates to the presentation of two accounts: Prepaid Expenses and Sales. As you can see, the general structure is similar to other Web-based languages such as HTML or XML. Tags (identifiers) are enclosed in brackets (< and >, for example, <glc:entryDetail>). The end of a specific tag includes a slash before the identifier (/, for example, </glc:entryDetail>). There are several tags included for each data element. The excerpt for Prepaid Expenses includes GL account number: 1600; account name: Prepaid Expenses; amount: 500; date: December 31, 2001; as well as the GL category to which the item belongs: currentAssets. Also embedded in the item is the version of XBRL taxonomy that was used to create the data item and the location of that definition.

Instance of Prepaid Expenses:

```
<glc:entryDetail>
  <glc:account>
    <glc:accountMainID nonNumericContext=''s1''>1600</glc:accountMainID>
    <glc:accountMainDescription nonNumericContext=''s1''>Prepaid
    Expenses</glc:accountMainDescription>
  </glc:account>
  <glc:amount numericContext=''c1''>500</glc:amount>
  <glc:postingDate nonNumericContext=''s1''>2001-12-31</glc:postingDate>
  <glc:xbrlInfo>
    <glc:xbrlTaxonomy nonNumericContext=''s1''>http://www.xbrl.org/us/gaap/ci/2000-07-31/
    us-gaap-ci-2000-07-31</glc:xbrlTaxonomy>
    <glc:xbrlElement nonNumericContext=''s1''>currentAssets.prepaidExpenses</glc:xbrlElement>
  </glc:xbrlInfo>
</glc:entryDetail>
```

Instance of Sales:

```
<glc:entryDetail>
  <glc:account>
    <glc:accountMainID nonNumericContext=''s1''>4000</glc:accountMainID>
    <glc:accountMainDescription nonNumericContext=''s1''>Sales</glc:accountMainDescription>
  </glc:account>
  <glc:amount numericContext=''c1''>-82000</glc:amount>
  <glc:postingDate nonNumericContext=''s1''>2001-12-31</glc:postingDate>
  <glc:xbrlInfo>
    <glc:xbrlTaxonomy nonNumericContext=''s1''>http://www.xbrl.org/us/gaap/ci/2000-07-
    31/us-gaap-ci-2000-07-31</glc:xbrlTaxonomy>
    <glc:xbrlElement nonNumericContext=''s1''>salesRevenueNet.salesRevenueGross</glc:xbrlElement>
    </glc:xbrlInfo>
</glc:entryDetail>
```

From this example, you can see the richness of information about a ''number'' (500 in our example) that can be included in an XBRL *instance document*. Decision makers can use this information when they are trying to make comparisons between companies that support the taxonomy.

Source: XBRL code was excerpted from http://www.xbrl.org/gl/trialbal.xml. Copyright © 2002 XBRL International. All Rights Reserved. http://www.XBRL.org/legal/. For detailed information regarding XBRL, including many other examples of instances and the current taxonomy, see http://www.xbrl.org.

The Sarbanes-Oxley Act

In Chapter 1, we briefly introduced you to the impact that the Sarbanes-Oxley Act of 2002 has had on the accounting profession. In Chapter 7, we described how Sarbanes-Oxley has affected organizational governance. Exhibit 7.4 (pg. 213) outlines the 11 parts of the Sarbanes-Oxley Act. In this section, we discuss a few parts of this law that pertain specifically to business and financial reporting. We should note that at the time of this writing, the law only applies to SEC-registered companies, although many smaller companies and not-for-profits are applying similar procedures.

The intent of Sarbanes-Oxley, as stated in the act, is "To protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities laws, and for other purposes." Practically speaking, it is a new set of rules that applies to many areas, including financial reporting. Section 302 establishes who is responsible for financial reporting. It states that the CEO and CFO of an organization must certify that the statements neither contain material untrue facts nor omit material facts. The CEO and CFO also must certify that they have established and evaluated internal controls for the accounting system that produces the reports. Let's think about what this means. In earlier chapters, we discussed many controls that are necessary to ensure the proper operation of an accounting system. Historically, we made internal auditors, officers, department heads, and management throughout the organization responsible for internal controls. Sarbanes-Oxley makes top management responsible, with penalties of up to 20 years in prison and $5 million in fines for violations.

Section 401 of the act covers disclosures in financial reports. Generally accepted accounting principles (GAAP) include circumstances where certain items may or may not be disclosed in financial reports. "Off balance sheet" items are addressed in Section 401, thereby redefining GAAP for these items. The section also calls for transparent reporting of the economic effect of such transactions. This means that the report should clearly reflect, rather than obscure, the economic reality of business events.

As previously discussed, top management is responsible for internal controls. Section 404 mandates that the SEC sets rules defining a report of internal controls that must be included in a company's annual report. The report must include the responsibility of management and an attestation to the control relative to internal control evaluation and reporting.

The last section of Sarbanes-Oxley we will discuss is Section 409. This section states that companies "shall disclose to the public on a rapid and current basis such additional information concerning material changes in the financial condition or operations of the issuer. . . ." This means that if anything material occurs, the SEC and the public must be notified. From this, Congress is taking us a step toward continuous or real-time reporting. If companies have in place the capability to report business events as they occur, as well as the financial impact of those events, providing key financial information to the public on a much more frequent basis than quarterly reporting is a relatively small step. We believe that this legislation will ultimately have a major effect on financial and business reporting for a multitude of organizations. As we leave this discussion, we ask that you consider the impact that these requirements will have on the GL/BR process.

Current Environment for External Financial Reporting

ENTERPRISE SYSTEMS

In the past few years, technology has created an environment where users can demand immediate information. "Overnight delivery," once the fastest way to transfer information between two entities, is frequently too slow and expensive, and is replaced by a fax over phone lines. The fax eliminates the one-day wait for the information. Today,

many people opt for e-mail with document attachments, eliminating the need for a walk to the fax machine or the cost of a call. Many who continue to use faxes have them directly routed to their email with other messages. The same trend is occurring with respect to financial reporting. Year-end financial reports contain information that already has been released or, at a minimum, is based on events that occurred months or even over a year prior to the financial statement release. Investors want more information faster. The government is also pushing for timelier reporting. In addition to the Sarbanes-Oxley Act's requirement of "rapid and current" disclosures, the SEC has marginally shortened the time in which companies are required to file some reports, and roundtables have indicated that real-time reporting is not only feasible but also desirable. At one SEC Roundtable, a primary issue discussed is the need for information to be available in a timelier manner in the marketplace.[5] To obtain real-time reporting, *enterprise systems* must be in place so that data flows to the GL in a real-time manner. If it is feasible, and investors and regulators want it, real-time reporting is likely just over the horizon.

One of the issues directly related to real-time reporting, or continuous reporting as it is sometimes called, is the assurance that the reports reflect the reality of the firm. To provide continuous assurance (continuous audits), controls must be automated and monitored. The monitoring may be in the form of "audit modules" embedded in ERP software or providing the auditor access through a query tool (such as SQL). Much of the interest in continuous auditing has been driven by internal auditors that see the benefit of detecting problems quickly to prevent them from recurring or getting larger. Continuous auditing is an area that is currently under study by several large accounting firms, internal auditors at large organizations, and many academics.[6]

Summary

This chapter had much to say about electronic inputs to the GL/BR process. But what about system outputs? We have been somewhat ingrained by our other accounting courses to expect hard copy documents. Will we ever see the day when business reporting will do away with paper reports and use "electronic reports"? The answer is a resounding yes! The advent of XBRL is one clear indicator that major changes are on the way. Other projects also have existed for several years at the Internal Revenue Service (IRS) (electronic tax return filing) and at the SEC (electronic filing of annual 10-Ks). Electronic filing at the IRS has mushroomed since its inception. In fact, from 1989 to 2006, the number of electronically filed returns grew from 1.2 million to more than 70 million.

At the heart of the SEC's system is EDGAR (Electronic Data Gathering, Analysis, and Retrieval) and a front-end processing package called FSA—financial statement analyzer. Such a system is imperative when the filings are in a text format. Now, the SEC is committed to the future use of XBRL and moving away from EDGAR to an interactive environment. Although current connection to EDGAR through the Internet provides easy access to the text-based financial statements of public companies for most anyone, using those statements remains difficult. One company, EDGAR Online, Inc., has developed an online database that interprets the text-based SEC filings and provides them in a database form, complete with XBRL tagging. The service is available for a fee.

5 SEC: Roundtable Discussion on Financial Disclosure and Auditor Oversight, http://www.sec.gov/spotlight/roundtables/accountround030602.htm, March 6, 2002.

6 For more information on continuous auditing, see http://raw.rutgers.edu/continuousauditing/.

Some accounting visionaries predict that in the near future, traditional, *periodic financial reporting*, such as that available through EDGAR, will be displaced by *continuous online financial reporting*.[7] Part of the database reporting scenario runs along the following lines. Interested parties (i.e., all "users" who are interested in a company's financial statements) could access a company's database *at any time* through the Internet. The database would contain both financial and operating data. Through menu options, users would make different inquiries of the database, depending on their needs; a report-writing facility would allow them to tailor reports to suit those varied needs. Finally, the independent auditor's role would change from that of rendering an opinion on the fairness of periodic financial statements to one of rendering an opinion on the integrity of the database and the reliability of the systems generating the information. Does this sound a lot like the capability that XBRL is promising to provide? It should. Are you prepared to assume the auditor's revised role as information assurer? Changes are coming just about as quickly as graduation.

Key Terms

general ledger and business reporting (GL/BR) process
general ledger (GL) process
business reporting process
feeder process
financial reporting officer
managerial reporting officer
performance reports
responsibility accounting/reporting system
journal voucher
general ledger master data
audit trail
balanced scorecard
business intelligence
eXtensible Business Reporting Language (XBRL)
instance document

Review Questions

RQ 16-1 What are the primary functions the GL/BR process performs?

RQ 16-2 What, in your own words, does business reporting entail?

RQ 16-3 What are the fundamental responsibilities of each of the following positions or departments: business reporting department, budgeting department, financial reporting officer, managerial reporting officer?

RQ 16-4 What, in your own words, are a performance report and the responsibility accounting/reporting model?

RQ 16-5 What major *logical* processes does the GL/BR process perform?

RQ 16-6 Why is the *hierarchical coding* system a good fit for the general ledger system?

RQ 16-7 What limitations are faced by contemporary accounting systems applying traditional general ledger account structures?

RQ 16-8 In your own words, how do ERP financial modules facilitate the GL/BR process?

RQ 16-9 In your own words, how do ERP systems facilitate *balanced scorecard* and *business intelligence*?

7 See Robert K. Elliott, "Assurance Services and the Audit Heritage," *AUDITING: A Journal of Practice and Theory* (Supplement 1998) and Steve G. Sutton, "The Changing Face of Accounting and the Driving Force of Advanced Information Technologies," *International Journal of Accounting Information Systems* (March 2000).

RQ 16-10 Why is XBRL so important to efficient Web-based business reporting?

RQ 16-11 How does the Sarbanes-Oxley Act of 2002 affect the GL/BR process?

RQ 16-12 What two groups of information users are interested in real-time reporting?

Discussion Questions

DQ 16-1 Discuss fully the difference between the ''contexts'' of Figure 16.1 (pg. 576) and Figure 16.4 (pg. 581).

DQ 16-2 Four managers (or departments) are shown in Figure 16.1 (pg. 576) as reporting to the controller. Setting aside your personal career inclinations and aspirations and ignoring any work experience you have, for which position do you think your college academic studies to date have best prepared you? Discuss. Does your answer hold any implications for the curriculum design at your college? Explain.

DQ 16-3 In the real world, what problems might an organization face in performing *interim closings?* For example, the books might be left open after a December 31 closing until auditing adjusting entries are made in March or April. During the same period, interim financial statements for the new year are required. Can you suggest any solutions for those problems? Discuss fully.

DQ 16-4 This chapter assumed that the controller was the source of all *adjusting entry* journal vouchers. Mention at least one alternative source for each of the following adjustments (and explain your answers):

a. Estimated bad debts

b. Interest accruals

c. Lower of cost or market adjustments for inventories

d. Lower of cost or market adjustments for investments

e. Depreciation adjustments

f. Differences between physical inventory counts and perpetual inventories

DQ 16-5 ''Defining the codes for a chart of accounts is no big deal—nothing is permanent—I can change it at any time in the future.'' Why do you agree (or disagree) with this statement?

DQ 16-6 Read Section 409 from the Sarbanes-Oxley Act of 2002. Do you agree that this supports real-time financial reporting? Research both sides of the issue, and provide a conclusion based on your findings.

DQ 16-7 What is the overall significance of the Sarbanes-Oxley Act of 2002 to financial reporting?

Problems

P 16-1 The context diagram in Figure 16.4 (pg. 581) shows the data flows running to the general ledger from the feeder processes studied in Chapters 10 through 15.

a. For each data flow in Figure 16.4, show the journal entry (in debit/credit journal entry format, with no dollar amounts) that would result (make and state any assumptions that you think are necessary).

b. Name at least two other entries that would normally come from the feeder processes that are not shown in Figure 16.4.
c. In journal form, show one *representative* entry (including an entry explanation) that the treasurer would furnish for (1) investing transaction activities and (2) financing transaction activities.

P 16-2 Refer to the level 0 DFD shown in Figure 16.5 (pg. 583).

Draw a lower-level DFD for each of the following processes shown in Figure 16.5. Make sure that each lower-level DFD is *balanced* with its parent.

a. Process 3.0—Record adjustments
b. Process 4.0—Prepare business reports

P 16-3 In this chapter, we acknowledged the inconsistency between the ''context'' assumed in Figure 16.1 (pg. 576) and that in Figures 16.4 (pg. 581) and 16.5 (pg. 583).

Redraw the DFDs in Figures 16.4 and 16.5 to make them consistent with Figure 16.1. *Hint:* Figure 16.1 includes the treasurer, controller, and certain others *within* the system.

P 16-4 Examine the *responsibility accounting performance reporting* illustration shown in Figure 16.2 (pg. 578).

a. Design a data-coding scheme that will facilitate the aggregation of data as the data ''filter'' upward. Use the specific facts that appear in Figure 16.2. Make and state any assumptions you think are necessary.
b. In no more than two paragraphs, explain how your coding scheme works. Include a discussion of positions in the organization other than those in the production function.
c. In no more than three paragraphs, explain how your scheme might be handled in a database environment without the codes.

P 16-5 Find two sets of financial statements from companies within one industry. List any problems you have in doing a comparison of the balance sheets. Describe how using XBRL could help alleviate these problems.

P 16-6 For this problem, use an enterprise system with which you are familiar, or identify a system by searching vendor sites on the Internet.

a. How does the package's ''feeder'' systems compare to those presented in Figure 16.4 (pg. 581)?
b. What financial reports are included in the standard suite of reports? Is a custom report-writer module available? Discuss the significance of report-writer modules.