chapter



In this chapter you will learn:

- Basic definitions of income revenue, and expense
- 2 To analyze transactions and their process on income statement accounts
- use debits, credits, and accounts to analyze transactions and construct income statements
- To continue to read actual company reports

Income Statement Concepts: Income, Revenues, and **Expenses**

Did you ever receive a chain letter asking you to send, say \$10, to the person who sent it to you? It also tells you to send the letter on to 10 friends.

After telling you about the awful things that happened to people who break these chains, the letter will try to convince you to go along by pointing out how much money you could make. Just think: After each of your 10 friends sends you \$10, you are \$90 ahead! What easy money!

Would you really be \$90 ahead though? Nothing of value is produced. Money is only shuffled around. The \$100 your friends sent you is really a contribution of equity. The same is true for the \$10 you sent up the chain. No one really earns any income. In accounting terms, the people who subscribe to these chains are confusing income and capital.

Many financial calamities are disguised forms of chain letters, and they rely on confusing capital contributions with income. One of the latest occurred in Albania in 1997. Fresh from abardoning a Communist regime and inhabiting one of Europe's poorest nations, Albanian: Sold their apartments and borrowed money from relatives abroad to invest in schemes promising interest rates as high as 25% per month. (That's equivalent to an interest rate of 1,355% per year!) About the lowest rate promised by these schemes was 8% per month, which is equivalent to 152% per year. Early on, these rates appeared real to investers because some were actually paid—from the capital contributions of other investors! Because wealth was not being created, the schemes collapsed. When many Albanians lost all their wealth, the country plunged into turmoil. Widespread arson, looting, and violence caused the Albanian government to impose a nationwide state of emergency in its attempt to restore order.

This chapter focuses on the income statement, and it has two main goals:

- 1. To explore the economic concepts that underlie the income statement: income, revenues, and expenses
- 2. To extend the accounting techniques of debits and credits to the measurement of income

The economic concept of income is one of the most powerful and important ideas accountants use in writing the financial histories of organizations. An entity's income for a period is almost always the primary measure of its financial performance. Income plays a najor role in the decisions of investors and finencial analysts who assign value to the entity's stock, assess its creditworthiness, and evaluate the performance of its management. Income is important, and we will study it in depth in this chapter and throughout the book.

As we did in Chapter 2, we show how debits and credits are used to record transactions as they occur. Because the income statement relates to economic events over a period of time, tracking things as they occur is more important for the income statement than for the balance sheet. It is so important that we will see a whole new set of accounts invented just to record revenues and expenses, which are the components of income. These accounts, called temporary accounts, are used only to measure income and appear only on the income statement. They never appear on the balance sheet.

We begin by defining income, revenue, and expense. We give many examples of revenues and expenses, but as with assets and liabilities, it is impossible to list them all. The activities of the entity affect the exact titles of the revenue and expense accounts that appear on its income statement. We demonstrate how to use debits and credits to record revenues and expenses. We work through a comprehensive example to illustrate how debits and credits are used in measuring income. Along the way, we look at an actual corporate income statement.

OBJECTIVE:

Learn basic definitions of income, revenue, and expense.

Income (loss) is the increase (decrease) in net assets resulting from operations over a period of time.

Net assets are the excess of economic resources over obligations.

Income (Loss)

Income is an increase in an entity's net assets resulting from its operations over a period of time. If an entity's operations over a period of time result in a decrease in its net assets, it has a **loss**. Three important pieces make up the definition of income and loss:

- Increase (or decrease) in net assets
- · Resulting from an entity's operations
- Over a period of time

We now discuss each of these three parts in detail. First, let us define net assets. We start from the fundamental identity for the balance sheet:

$$ASSETS = LIABILITIES + EQ^{*}YISES$$

Net assets are the excess of the entity's economic resources (assets) over its obligations (liabilities). Rewriting the accounting identity, we see:

That is, net assets is another name to ctockholders' equity.

Now with a definition of net assets in hand, we can explore how net assets increase or decrease over a period. For example, consider an increase in net assets. Net assets increase over a period when the entity increases the gap between its economic resources and its obligations, which can happen in many ways. Obligations could remain fixed and resources could increase; or resources could remain constant and obligations decrease. Peth obligations and resources could increase, but resources more than obligations We will see this scenario is usually the case for growing companies. Finally, both colligations and resources could decrease, with resources decreasing less than obligations.

To see whether net assets increased or decreased over a period, all we need is two balance sheets: one as of the beginning of the period and another as of the end of the period. If the total shareholders' equity increased, we know that net assets increased. We can then look at the assets and liabilities on the two balance sheets to figure out which combination of increases and decreases in the assets and liabilities generated the increase in shareholders' equity.

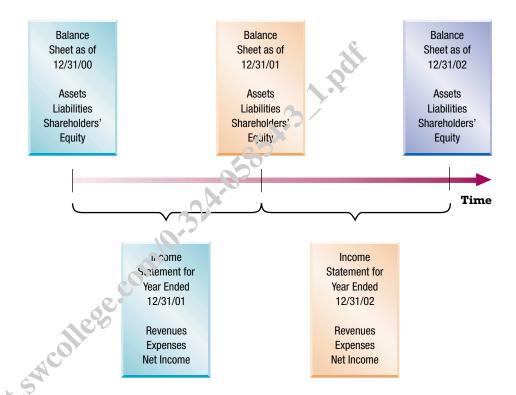
An increase in net assets over a period is only one of the requirements for income, however. To be income, the increase in net assets must be the result of the entity's operations. "Operations" is a difficult concept to explain. It is easier to see what is *not* operations and define operations as everything else than it is to define operations directly. Here are the things that are not operations: capital transactions with owners. For example, exchanging shares of the entity's common stock for cash is a capital transaction, not operations. It increases net assets by getting the shareholders to put up more money, not by using resources to create value.

Another good example of a capital transaction with owners is the payment of cash dividends. The payment of a cash dividend to shareholders is a capital transaction with owners, not operations. Net assets decrease because cash has been distributed to owners, not used up in operations. Intuitively, the payment of a cash dividend to shareholders is a way of returning to them part of their investment in the entity. It is not the consumption of resources by the entity in carrying out its functions.

The final important factor in the definition of net income is that the increase in net assets occurs over a particular period of time. *Income statements are always presented for an interval of time, be it a month, a quarter, or a year.* In assessing an increase in net assets, we should specify an increase from a beginning point to an end point. Any chopping up of time is artificial, and an accountant or manager must pay careful attention to dates. An income statement is always presented for the period between

the dates of two balance sheets; that is, a beginning balance sheet describes the state of net assets at the start of the period, an income statement describes the changes in net assets from operations over the period, and an ending balance sheet describes the state of net assets at the end of the period. The time covered by the accounting history should be free from any "gaps." Figure 3.1 illustrates the time aspects of income statements and balance sheets.

Figure 3.1 Time Aspects of Income Statements and Balance Sheets



OBJECTIVE:

Learn to read actual company reports.

These points can be seen in CACI International's balance sheets and income statements in Exhibits 3.1 and 3.2 shown on pages 46 and 47, respectively. CACI is an information systems and technology services company. It provides custom software, communications, and network services, imaging, and document management to a variety of governmental and private sector organizations.

CACI's total shareholders' equity (net assets) went from \$141,968 thousand on June 30, 2000, to \$160,204 thousand on June 30, 2001, an increase in net assets of \$18,236 thousand. CACI's income statement reveals the part of this change in net assets that resulted from operations (in fact, CACI titles its income statement a statement of operations). Revenues, direct costs, indirect and selling expenses, depreciation, and amortization all arise from operations. CACI does not pay dividends, but if it did, the dividends would not appear as part of the net income calculation in the income statement. Remember that common stock cash dividends are distributions to owners, not an expense of the company. CACI's income statement shows that operations over the year ended June 30, 2001, increased net assets by \$22,301 thousand. Other items decreased net assets to a final total of \$18,236 thousand.

Note how the 2001 income statement is "boxed" by the June 30, 2001, and June 30, 2000, balance sheets. To see the link between the income statement for the year ended June 30, 2001, and the June 30, 2000, and June 30, 2001, balance sheets, begin with the observation that net asset increases from operations (net income) are reflected in the

Exhibit 3.1 CACI International Balance Sheet

CACI International, Inc. Consolidated Balance Sheets (dollars in thousands, except share data)										
ASSETS			LIABILITIES AND SHAREHOLDERS	' EQUITY						
	June	30,		June	30,					
	2001	2000		2001	2000					
Current assets			Current liabilities							
Cash and equivalents	\$ 14,842	\$ 4,931	Accounts payable	\$ 7,532	\$ 7,087					
Accounts receivable			Other accrued expenses	28,322	23,843					
Billed	114,953	98,178	Accrued compensation							
Unbilled	11,038	12,404	and benefits	26,866	24,458					
Total accounts receivable	\$125,991	\$110,582	Income taxan payable	156	1,707					
Deferred income taxes	407	235	Deferred income taxes	6,421	5,021					
Deferred contract costs	1,456	1,488	Total current liabilities	\$ 69,297	\$ 62,116					
Prepaid expenses and other	8,562	7,372	0,3							
Total current assets	\$151,258	\$124,608	Note payable, long-term	48,888	28,263					
			Deferred rent expenses	1,286	1,025					
Property and equipment, net	\$ 15,685	\$ 15,039	Deferred income taxes	116	125					
Accounts receivable, long-term	13,686	11.135	Other long-term obligations	4,940	2,500					
Goodwill	88,895	75 402	Total liabilities	\$ 45,230	\$ 31,913					
Other assets	12,898	7,024								
Deferred income taxes	2,309	2,788	Shareholders' equity							
Total assets	\$284.731	\$235,997	Common stock							
	160		\$0.10 par value, 40,000,000							
			shares authorized,							
A .			15,286,000 and 15,007,000	ф. 1. 5 20	ф 1 г О1					
			shares issued Capital in excess of par	\$ 1,529	\$ 1,501					
K S			Retained earnings	24,797 159,298	19,716 136,997					
0			Other equity items	(25,420)	(16,246)					
. IISIRIPShot.swi			Total shareholders' equity	\$160,204	\$141,968					
0			Total liabilities and	ψ100,204	ψ141,700					
237			shareholders' equity	\$284,731	\$235,997					
115)			shareholders equity	Ψ <u>2</u> 04,731	======					

retained earnings accounts in the balance sheet. With a few unusual exceptions, the following is true:

Beginning Retained Earnings

- + Net Income
- Cash DividendsEnding Retained Earnings

This point is important to remember because one of the essential skills in reading financial statements is to understand how a number or item in one statement is likely to affect a number or item in another. Figure 3.2 provides a graphical illustration of this point. Please be absolutely certain that you understand it.

Exhibit 3.2 **CACI** International Income Statement

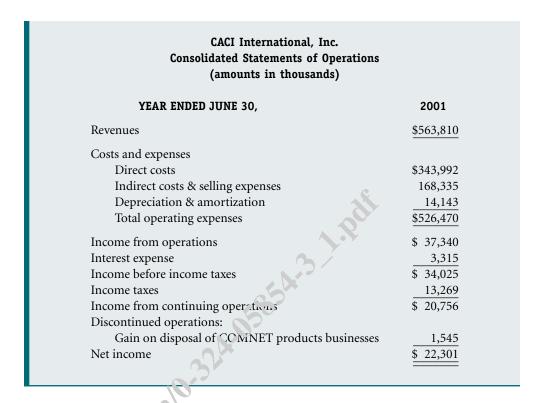
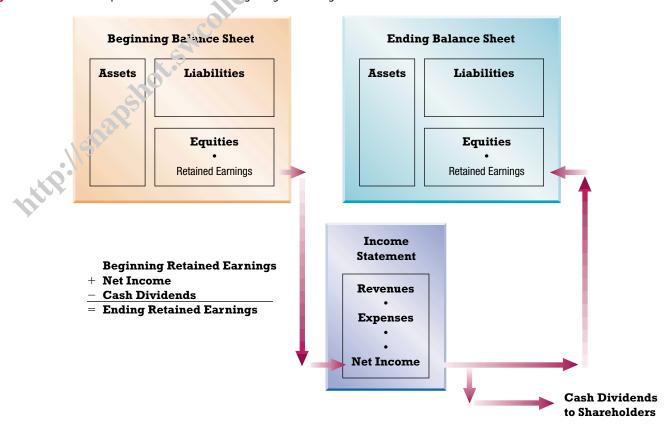


Figure 3.2 Relationship of Income Statement to Beginning and Ending Balance Sheets



CACI International (Net Income Explains Change in Retained Earnings) In the case of CACI International, we see from the income statement and balance sheets in Exhibits 3.1 and 3.2 that the following is true:

Retained Earnings (6/30/00)	\$136,997
+ Income (6/30/00–6/30/01)	22,301
= Retained Earnings (6/30/01)	\$159,298

The change in retained earnings over the year is exactly explained by net income, which enables us to make the correct inference that CACI did not pay cash dividends to shareholders during the year.

CACI's net income of \$22,301 thousand is more than enough to explain the \$18,236 thousand increase in its net assets between June 30, 2000, and June 30, 2001. Therefore some reductions must occur somewhere. The remaining prount to be explained is:

\$ 18,236	Increase in net assets
(22,301)	Net income
\$ (3,065)	Decrease in net assets from
	sources other than net income

The decrease in net assets to be explained is actually larger than \$3,065 thousand. The common stock and capital in excess of par accounts also increased. The increase in these accounts is caused by a capital transaction with shareholders: the issuance of common stock at a value above par. The common stock account increased by \$28 thousand:

\$ 1,529	Balance on June 30, 2001
(1,571)	Balance on June 30, 2000
\$ 28	Increase in Common Stock between
75-	June 30, 2000, and June 30, 2001

The capital in excess of par account increased by \$5,081 thousand:

\$ 24,797	Balance on June 30, 2001
(19,716)	Balance on June 30, 2000
\$ 5,081	Increase in Capital in Excess of Par
	between June 30, 2000, and June 30, 2001

The net income and the changes in Capital in Excess of Par and in Common Stock went up by a total of \$27,410 (\$22,301 + \$28 + \$5,081) thousand. Net Assets went up by \$18,236 thousand. The difference, \$9,174 thousand, is explained by changes in the shareholders' equity account for Other Equity Items. This account is a little tricky for two reasons. First, we see that it is negative, which means it has a debit balance. Second, the entries that give rise to this account are beyond our reach at this point in the book. For now, let's explore further the income statement.

Revenues

CACI's income statement shows the typical breakdown of income into revenues and expenses. Net income is the net result of subtracting the expenses from the revenues.

Revenues are increases in assets or decreases in liabilities resulting from operations. Revenues increase income through some combination of increasing assets and decreasing liabilities. A good intuitive definition would be that revenue is the dollar value (monetary measure) received in exchange for the good given up or service provided.

In the Websell example of Chapter 2, suppose that the company billed clients \$3,000 for programming services performed.

Revenues are gross increases in net assets resulting from operations over a period of time.

On March 10, 2004, Websell bills clients for \$3,000 of work performed.

ΔAssets		=	Δ Liabilities	+	$oldsymbol{\Delta}$ Equities	
Accounts Receivable	\$3,000				Retained Earnings	\$3,000
	\$3,000	=	0	+		\$3,000

In this case an asset, Accounts Receivable, is created when recording the \$3,000 of revenue by increasing retained earnings.

On the other hand, suppose Websell initially received a \$3,000 retainer from a client prior to the performance of any service. That transaction affects the balance sheet as follows:

On March 10, 2004, cash advance of \$3,000 from client.

ΔAssets		=	Δ Liabili	ties	+	Δ Equities
Cash	\$3,000		Obligation for Service to Client	\$3,000		
	\$3,000	=		\$3,000	+ 6	0

When the services are finally provided to the client, Websell would record the revenue (increase Retained Earnings) and decrease its or ligation to provide service to the client by \$3,000.

On April 20, 2004, all of the service is provided and revenue is now recorded.

Δ Assets	=	ΔLiabilities	+	Δ Equities			
	О	bliga ^{ri} ən					
	1	for Service					
		Client \$(3	,000)	Retained Earnings	\$3,000		
0	-0	\$(3	,000) +		\$3,000		

Recognition is the act of making an entry into the accounts.

The major issue in accounting for revenues is when to recognize them in the accounts. **Recognition** is the act of formally entering an item into the accounting records. An item is recognized when an accountant makes the debits and credits required to account for it. In the first example, Websell recognized the revenue from the consulting assignment when the work was completed and the client was billed. At that point, an accounting entry was and de debiting Accounts Receivable and crediting Retained Earnings.

Why aid we recognize revenue upon Websell's billing of the client? If Websell is like most organizations, the process of earning revenues is continual and many types of revenue-generating activities are occurring simultaneously. When Websell gets its business into full swing, it is likely to be training programmers and consultants to provide services to future clients, searching for new clients, submitting bids for new work, performing work in various stages for existing clients, and awaiting collection of accounts for jobs completed. These activities will all be happening at the same time, although for any one client they occur in sequence.

Even if we focus on one client, no purely logical time specifies when in the earnings process the revenue should be recognized. Recognizing revenue at the time consultants complete their training would seem premature. Who will be the clients? Will the projects be completed on time? How much will clients pay? How many clients will not pay up?

At the other extreme, recognizing revenue only when clients settle their accounts seems too severe. Most clients can be expected to pay for jobs that Websell completes. Websell probably won't work for clients it believes won't pay for its services.

This thinking leads us to look somewhere between the training of consultants and the collection of cash from clients. It is a broad territory, and we are unlikely to be able to settle the matter with logic. What we need is a convention. The basic idea of a revenue is that it is an increase in income from operations. Operations are the entity's activities that are aimed at earning a profit. The *convention for revenue recognition* is when the earnings process is complete or substantially complete, when an exchange has taken place, and when the amount of the revenue can be measured with some accuracy and the entity is reasonably sure of collection. In the case of Websell's consulting activities, the revenue recognition criteria would be met when the work is completed and the client is billed. At that point, Websell fulfills its end of the bargain. It is simply awaiting the client's fulfillment of its end.

Revenue Recognition Criteria:

- Earnings process complete
- Exchange taken place
- Reasonably certain collection



Wal-Mart is one of the forprofit firms in the United States that calls its main source of revenue "Sales."

Substantial completion of the earnings process is a practical, but rough, guide as to when to recognize revenue. It is too rough for some specialized circumstances, and accountants use specially tailored rules as the need arises. For example, specialized revenue recognition rules are used for long-term construction projects and mining. However, in most cases substantial completion means when the good or service is delivered to the customer.

An exchange taking place requires an identified buyer. Just because a vacuum cleaner manufacturer produces a cleaner that is packaged and waiting to

be sold does not mean that manufacturer has the right to recognize revenue. A buyer of the machine must be found.

Finally, if the good or service is produced and a buyer is found, in order to recognize revenue we must also be reasonably certain of the amount the buyer is to pay us and the date of receipt of the payme.

A great many for-profit firms in the United States call their main revenue "Sales." Merchandising firms, such as Wal-Mart and J.C. Penney, buy goods from suppliers and sell them to retail customers. Manufacturing firms, like the steel producer USX, make products to sell to other firms. In their case, Sales is a good description of the major source of the revenue.

Service firms such as Accenture and some divisions of General Electric, might list revenues from performance of services as "Sales of Services" or "Total Billings," or simply "Revenue". Financial institutions such as the Harrington Financial Group earn revenues by anding money and charging interest. Their income statements have a line for "Interest Income," which is another name for "Interest Revenue."

Merrill Lynch has revenues from "Commissions," "Asset Management and Portfolio Crvice Fees," and "Investment Banking." The company charges these fees for the various financial services it performs for customers.

Insurance companies use "Premium Revenue." A company that holds the copyright for a popular novel might use "Royalties." Yale University lists "Tuition Revenue" and revenue from "Grants and Contracts." A landlord collects "Rent." A city collects revenues from "Property Taxes," "Licenses and Permits," and "Fines."

As with assets, liabilities, and equities, too many different sources of revenues and too many differences in account names prevent providing a comprehensive list of all types of revenues. If you read many financial statements, you will often infer what an item is from the way it is treated. For example, interest may be received or paid. If "interest" is listed among other revenues or ends up increasing income, you may be reasonably sure that the amounts represent interest revenue, not interest expense.

Expenses

Economists usually take credit for saying, "There is no such thing as a free lunch." But no one takes this saying more seriously than an accountant. An accountant who recognizes revenues, which are increases in net economic resources, immediately asks what resources were consumed in the process of earning those revenues.

¹Differences in account names cause major annoyances in international accounting. Even within English-speaking countries, it is often challenging to simply recast a financial report using familiar names. For example, in the United Kingdom, sales revenue is sometimes called "turnover."

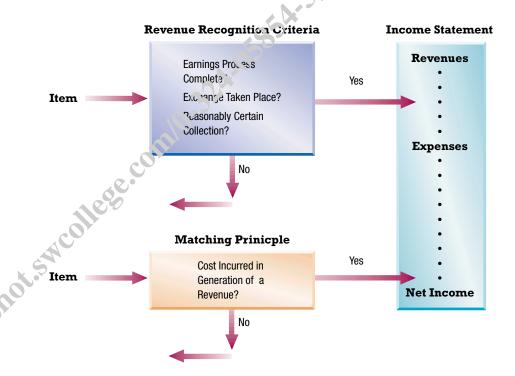
Expenses are gross decreases in net assets resulting from operations over a period of time.

Matching is the process of making sure all the costs incurred in generating the revenues recognized in a period are taken as expenses in that period.

Figure 3.3
Construction of an Income Statement

Expenses are the assets used or liabilities incurred in the process of carrying out operations. Expenses are the things that decrease income, the costs incurred in the generation of revenues. This amount usually involves some combination of decreasing assets and increasing liabilities. For example, when Websell serves its consulting clients, it is likely to incur several different kinds of expenses. Websell almost surely uses someone's time and skill, for which compensation must be paid. If Websell pays workers in cash, then the asset Cash would be decreased. If Websell has not yet paid workers, it has an obligation to them in the form of Wages Payable. An accountant's instinct would be to make sure obligations to workers were recorded whenever the revenue from the client is recognized.

The process of looking for the expenses corresponding to recognized revenue is called **matching.** Matching involves looking for assets consumed or liabilities incurred in the generation of revenues. If some of Websell's rent was prepared and then expires during the term of a consulting assignment, it should record Recogniting logic that underlies construction of the income statement.



We can find as many different types of expenses as there are assets and payables. Examples of some of the most common types of expenses follow.

For Wal-Mart and J.C. Penney the "Cost of Sales" is the expense associated with the cost of merchandise sold to customers. "Interest Expense" is the cost of using money for a period of time. "Salaries and Wages" is the cost of labor. "Rent Expense" is the cost of renting assets, usually land or buildings such as offices or warehouses. "Depreciation" is the cost of using long-term assets such as Property, Plant, and Equipment.

Recognizing expenses means making the formal accounting entry to record the expiration of an asset or the incurrence of a liability. As with revenue recognition, recognizing expenses rapidly gets into the use of conventions, and for much the same reasons. Firms continually acquire and consume assets, and it may be unclear how the consumption of an asset relates to a particular revenue. For example, many lumberyards sell sand at retail. The sand is purchased by the truckload and dumped into an open area with three walls. Customer orders are filled by shoveling sand out of the area. No accountant can really tell what particular truckload a particular customer's order was filled from. In fact, the customer may purchase sand that was a mixture of several truckloads.

Because it is not possible and not essential to settle the issue of exactly what sand the customer bought, we rely on conventions to match the cost of sales with sales. It is not important in such a situation to match revenues with consumed assets so precisely. What will determine the success of the lumberyard in selling sand is the total revenue it generates from sand sales relative to the total cost of purchasing and stocking sand.²

We see many different conventions for recording expenses, and they are somewhat harder to capture in a summary intuitive concept such as "substantial completion of the earnings process." The conventions for expenses vary a lot depending on the type of the expense. Some costs are directly related to an amount of revenue. For example, in many service industries, such as law, consulting, and auditing, clients are directly billed for the professional time spent serving them. The amount the professional is paid for his or her time is therefore directly related to the revenue generated from that clie. t. Matching such costs to revenues is easy. Other costs, however, are only indirectly related to revenue. These costs are usually matched to revenue by using some systematic, ye. somewhat arbitrary, method. For example, \$1,000 of rent paid in advance for the next to months' use of a facility would be recognized as expense at the rate of \$500 per mo. 'th. Depreciation of the cost of plant and equipment is often straight-line, which is sim, by a fixed amount each year.

Rent, insurance, and building costs are examples of what accountants call *period expenses*. They are indirectly linked to specific products produced, but are generally necessary to carry on operations during an accounting period.

Some costs are not related to my revenue. For example, Ben and Jerry's might have the freezer break on one of their trucks, and two tons of ice cream might melt. No revenue will be generated by the melted ice cream. Such costs are included in the expenses of the period in which they occur. That is, they are deemed to be period expenses for accounting purposes.

The recognition of revenues and expenses as defined in the preceding sections is at the heart of what is called **accrual accounting.** The definitions of revenue and expense contain no ment on of cash flows. The idea is to define terms that truly measure the results of operating performance in dollar terms, but are independent of when the dollars actually flow in and out of the entity. As Figure 3.4 illustrates, the recognition of a

Income

Statement

Revenues

Expenses

Accrual accounting is any method of accounting that separates the measurement of revenues and expenses from the receipt and expenditure of cash.

Figure 3.4

Accrual Accounting (Revenues and expenses need not coincide with cash flows.)

Cash Flow Before Revenue or Expense Recognition

Some revenues are prepayments before good is given up or service provided. For example, Company receives prepaid magazine subscriptions, Company is given a retainer to provide future services.

Many expenses are "prepaid." For example, the cost of inventory, plant, and equipment, the prepayment of rent or insurance.

Cash Flow After Revenue or Expense Recognition

Payment received after good given up or service provided. For example, normal sales on credit.

Many expenses are paid after the expense is recognized. For example, the value of wages or interest already consumed, but not yet paid for.

²This point is not always true. In some cases, the measures of the profitability of individual customers are an important concern for management. For example, banks now pay much more attention to the profits they earn from each customer, because they recognize that a relatively small number of customers generates most of their profits.

Net Income revenue does not exactly coincide with the timing of the associated cash flow. The same is true for expenses.

Gains and Losses

Usually, the increases and decreases in net assets generated by a transaction are reflected separately on the income statement. For example, suppose that Wal-Mart sells, for \$6 each, 50 towels from inventory at a cost of \$4 each. Wal-Mart would record revenue of \$300 (50 towels \times \$6 per towel). It would also record an expense, cost of goods sold, of \$200 (50 towels \times \$4 per towel). The difference of \$100 (\$300 - \$200) is Wal-Mart's gross profit on the sale. Although the net income is ultimately affected by the \$100 gross profit, Wal-Mart would show the revenues and expanses separately in its income statement.

Some items on income statements are shown net. Suppose that Wal-Mart sold for \$15,000 a delivery truck that had a value in the accounts of \$10,000. The effects of this transaction would be shown on the income streement as a net amount, gain on sale of **equipment,** of \$5,000 (\$15,000 - \$10,000). If Wal-Mart had sold the truck for only \$7,000, it would have shown a loss on size of equipment of \$3,000 (\$7,000 - \$10,000).

The difference between the sale of towels and the sale of the truck is that Wal-Mart is in the business of selling inventor, items such as towels. The sale of the delivery truck is only an incidental transaction in its main business of retailing. The difference between the value of what was received and the book value of what was given up in transactions only incidentally related to an entity's main business are reported net as gains and losses. Examples are gains and losses on the sale of fixed assets and the retirement of debt. This convention of repor(ing gains and losses separately from revenues and expenses lets us distinguish increases and decreases in assets from the main thrust of operations from those caused by transactions only indirectly related to operations.

Review Questions

- 1. Define revenue and expense. How does one decide to list an item as revenue in an income statement? What is matching?
- 2. Give an example, not found in the text, of an expense that is paid for in cash in a prior accounting period. In a subsequent accounting period.
- 3. Give an example, not found in the text, of a revenue that is received in cash in a prior accounting period. In a subsequent accounting period.
- 4. Explain why it is right to think of an asset as a cost and an expense as an expired cost.

Debits and Credits

We want to extend the method of debits and credits to recording revenues and expenses. Because revenues and expenses relate to what happens to assets and liabilities over a period of time, the debits and credits we use to record revenues and expenses are related to those used to record assets, liabilities, and equities. Two things are very important to recognize about revenues and expenses and the accounts used to record them. First, unlike balance sheet accounts, revenues and expenses relate to what happens over a period of time. Balance sheet accounts reflect the accounting identity at a given point in time. Revenue and expense accounts are used to accumulate amounts over a period, and then are *closed*. Closing an account is the act of making an entry to bring the account's balance to zero. Revenue and expense accounts are closed at the date of each balance sheet.

Revenue and expense accounts are like simple rain gauges. A simple rain gauge is a container with marks up the side. To measure the rainfall over a day, you would make

OBJECTIVE:

Learn to use debits and credits to construct income statements.

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Closing an account is the act of bringing an account's balance to zero.

sure the gauge was empty and set it outside. You would come back 24 hours later and read the amount of rainfall on the side of the gauge. You would then empty the gauge to prepare it for the next day's measurement. Rain gauges start the day empty and they end the day empty.

The same is true of revenue and expense accounts. They begin the period with a zero balance. They accumulate revenues and expenses over the period. Their totals are used to prepare an income statement, and they are closed to ready them to capture the next period's revenues and expenses. Closing the accounts takes their balances to zero. Because revenue and expense accounts are closed and always have zero balances at each balance sheet date, they are called **temporary accounts**. We will go through the process of closing revenue and expense accounts in detail in the Websell example later in the chapter.

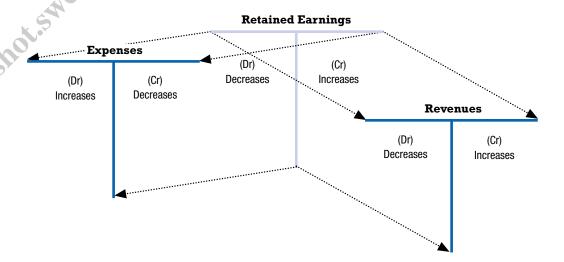
The second thing to know about debits and credits for revenues and expenses is how they work. Recall, before we knew anything about revenues and expenses, if an asset was used up by operations in a period, the asset's value in the account would decrease. In order to keep the accounting equation in balance we would decrease retained earnings in the equities. Now expenses are reflecting expirations of assets, and therefore *increases in expenses are debits to Retained Earnings*.

The easiest way to visualize the rules for making debit and credit entries to revenue and expense accounts is to think of these accounts as sitting right on top of the retained earnings account. (Remember, the change in Retained Earnings is revenues minus expenses for the period, less cash dividends.) As assets are used up they become expenses and create debit entries to Retained Earnings. Temporarily, instead of putting them directly into Retained Earnings, we will debit an expense account instead. It's just the opposite for revenues, which increase assets, and therefore have offsetting credit entries to Retained Earnings. We will temporarily credit a revenue account instead of making an entry directly to Retained Earnings. Figure 3.5 illustrates the rules for the use of debits and credits when making entries to revenue and expense accounts. It should help you visualize that revenue and expense accounts collect information for the construction of the income statement, which along with cash dividend information for the period explains to exhange in Retained Earnings for the period.

Temporary accounts are accounts that are always closed before the preparation of a balance sheet.

Retained Earnings are past earnings not distributed to stockholders.

Figure 3.5
Relationship of Revenue and Expense Accounts to the Retained Earnings Account



Once we come to the end of the period and have constructed the income statement, we drive the balances in the revenue and expense accounts to zero. Suppose at the end of an accounting period an expense account shows a debit balance of \$1,000. After listing the expense on the income statement, the temporary expense account has served its purpose and the balance in it must be driven to zero to prepare it for the start of the next accounting period. We can make the balance in the expense account zero by crediting the account for \$1,000. If we then debit the permanent retained earnings account for \$1,000,

we will have transferred the \$1,000 from the expense account to the retained earnings account.

Expe	ense	Expe	ense	Retained Earnings			
Dr.	Cr.	Dr.	Cr.	Dr.	Cr.		
1,000		1,000	1,000	1,000	Beginning		
		0			Balance		

Of course, even though the expense account balance is now zero, the balance in the retained earnings account will be the beginning balance (we've assumed it's a credit balance) reduced by the newly entered \$1,000 debit.

In general, through the closing process, revenues end op increasing Retained Earnings, and expenses end up decreasing Retained Earnings. Stated in terms of equity instead of retained earnings, revenues end up increasing equity, and expenses end up decreasing equity.

It will take a bit of practice to completely understand how the debit and credit entries really work. In the next section, we extend the Websell illustration begun in Chapter 2 to include revenue and expense accounts. We will close the revenue and expense accounts and prepare an income statement and a balance sheet.

A Word About Ledgers and Journals

Before continuing the Well'se'll example, we describe the mechanics of the bookkeeping process in more detail. At we have already seen, an account is a place to keep totals of each of the different categories of assets, liabilities, equities, revenues, and expenses. Individual accounts are kept on separate sheets (or in separate computer files) in a book (master file) called a *general ledger*.

In order to maintain a chronological history of the transactions the entity is involved in, each transaction is first recorded in one book of original entries, called a *journal*. A single journal, called a general journal, may be used to record all transactions, or multiple journals to record transactions of specific types. For example, a cash receipts journal (to record all transactions involving a receipt of cash) or a cash disbursements journal (to record all transactions involving an outflow of cash) might be used.

The format to be followed in making an entry to the general journal (*journal entry*) is to first list the exact title of the account to be debited and then the amount of the debit. The account to be credited and the amount of the credit follows on the second line and is indented to the right. Usually a simple explanation of the journal entry is written under the accounts debited and credited. Once the transaction is recorded it is posted to the accounts.

An Example: Continuing Websell

Before we describe and record additional transactions for Websell, we will post to the journal the original six transactions described in Chapter 2. These journal entries are presented in Exhibit 3.3.

Additionally, Websell entered into the following transactions:

7. On January 1, 2004, Websell paid \$2,000 for an unlimited-service cellular phone contract for one year.

8. On January 1, 2004, Websell acquired the rights to various software programs. The software consists of word processors and accounting programs in support of basic office functions, as well as technical packages to be used in developing its own

Exhibit 3.3

Websell Journal (Original Six Transactions)

DATE	ACCOUNTS	DR	CR
1/1/2004	Cash	1,000,000	
	Common Stock		1,000,000
	(Owners invest \$1,000,000 in the business.)		
1/2/2004	Cash	2,000,000	
	Bonds Payable		2,000,000
	(Websell sells \$2,000,000 of bonds.)		
1/3/2004	Equipment	300,000	
	Cash		300,000
	(Websell purchases computers and equipment		
	for \$300,000 cash.)		
1/3/2004	Prepaid Rent	75,000	
	Cash		75,000
	(Websell prepays rent for one year for \$75,000 cash.)		
1/5/2004	Supplies	2,000	
	Accounts Dayable		2,000
	(Websell purchases \$2,000 of merchandise on credit.)		
1/7/2004	A counts Payable	1,000	
	Cash		1,000
100	(Websell pays \$1,000 cash to suppliers of merchandise.)		

products. Websell paid \$50,000 cash for these rights that are expected to last for two years.

9. On January 1, 2004, Websell pays an Internet access supplier \$40,000 cash for rights and services to be received over the next four years.

 Internet Access Rights (asset)
 40,000

 Cash
 40,000

10. On January 1, 2004, Websell pays \$100,000 for the rights to copyrighted materials. They are expected to be useful for the next five years.

 Copyright Permissions (asset)
 100,000

 Cash
 100,000

11. On January 1, 2004, Websell purchases, for \$15,000, a liability insurance policy providing coverage for 12 months.

12. On February 2, 2004, Websell enters into agreements with various software retailers to distribute Websell products in their stores.

No entry. While the contracts may be legally binding, no exchange has taken place and it is not an accounting transaction. This is an example of an executory contract, an agreement that won't require a payment until the retailers actually do something for Websell. Another example of such a contract would be a labor con-

OBJECTIVE:

Learn to analyze transactions and their effects on income statement accounts.

		tract between an employee and a company.
BJECTIVE: arn to analyze transactions	13.	On February 5, 2004, Websell completes a consulting engagement for a client and bills the client for $\$3,000$.
d their effects on income atement accounts.		Accounts Receivable (asset) 3,000 Consulting Revenue
	14.	On March 31, 2004, Websell pays developers of its Web site \$1,200,000 for programming and design services. The Web site becomes operational on April 1, 2004.
		Web Site (asset) 1,200,000 Cash 1,200,000
	15.	On April 1, 2004, Websell enters into an igneement to provide Internet consulting services to a major corporation. The agreement calls for Websell to receive immediately \$65,000 as a prepayment for factly consulting services.
		Cash
	16.	On May 15, 2004, Websell completes the consulting job. In addition to earning the entire \$65,000 it received in advance, Websell bills the client an additional \$55,000 for the job.
		Revenue Received in Advance 65,000 Accounts Receivable 55,000 Consuling Revenue 120,000
	17.	During the 6-month period to June 30, 2004, Websell paid wages of \$377,000.
	6	Wiges Expense
20511	18.	During the 6-month period to June 30, 2004, Websell paid \$38,000 for various marketing and distribution expenses.
·//Since		Marketing & Distribution Expense 38,000 Cash 38,000
http://snapsho	19.	During the 6-month period to June 30, 2004, Websell sold software through its Web site and collected the entire sales price of \$762,000 in cash. Because Websell wants to track the success of sales from its Web site separately from those in retail outlets, management decides to use separate revenue accounts for sales from these two sources.
		Cash 762,000 Software Sales—Web Site 762,000
	20.	Websell sells software through its retail distributors and collects the entire sales price of $$620,000$ in cash.
		Cash 620,000 Software Sales—Retail 620,000
	21.	Per the distribution agreement, Websell pays its retail distributors a commission of 10% on retail sales

Cash

62,000

22. Websell collected \$48,000 of its accounts receivable during the 6-month period to June 30, 2004.

 Cash
 48,000

 Accounts Receivable
 48,000

Let's suppose these transactions cover all of Websell's transactions for the first six months of its operations. And, as the boxes indicate, we have made all the necessary entries to the general journal. Now, to gauge the company's progress, management wants to prepare an income statement and a balance sheet as of June 30, 2004.

Preparing financial statements from Websell's records is more complicated than simply adding up the accounts and putting them in good format. Think about the rent that Websell prepaid, its prepaid telephone expenses, and its p. vment for Internet rights. As of June 30, Websell has used some of the services it bought with these prepayments. That is, some of the assets expired. We need to analyze the eccounts to try to find any assets whose expiration we should recognize.

Similarly, Websell may have incurred liabilities that are not yet recorded. For example, its workers might have put in some time for which they have not yet been paid. We should analyze Websell's activities to try to find liabilities whose incurrence we should recognize.

The Process of Adjusting

The process of making entries to record expiration of assets and incurrence of liabilities before making up the financial statements is called **adjusting**. Adjusting is required to make accurate periodic scimates. Not all relevant financial information comes in the form of a transaction. The passage of time itself, as with the expiration of prepaid rent, can cause a change in the economic condition of the entity. Adjusting is the accountant's process of reflecting these changes in the accounts.

Adjusting is a difficult process because we have to search out what needs to be done. In an organization of any size, even one with so few accounts as Websell, we must take a system vic approach to the adjustment process so as to minimize the possibility of omitting contething. A good first step in a systematic adjusting process is to compile a trial balance. Remember that a trial balance is just a systematic list of all the accounts along with their balances. We can then go down the trial balance, account by account, and ask ourselves if any adjustments for that account need to be made. An added bonus is that we might catch some accounting errors, either arithmetical mistakes or improperly analyzed transactions. If we label the balance of each account as a debit or a credit, we can check to make sure the total debits we record equal the total credits. This cross-checking ensures at least the possibility that the balance sheet will balance! Exhibit 3.4 contains a preclosing trial balance for Websell as of June 30, 2004. Exhibit 3.5 on pages 60–61 presents all of the T-accounts that result from posting all of the journal entries to the proper accounts. The trial balance is a systematic listing of all these accounts.

We now go through Websell's accounts and record adjustments. For clarity, we use letters instead of numbers to label adjusting entries.

- a. Cash and Accounts Receivable require no adjustment.
- b. Some of the Prepaid Insurance has expired. Checking the policy we find that it took effect January 1, and the premium covered one year. Therefore one-half of the prepaid insurance has been used. We recognize the use of this economic benefit by decreasing the asset account and increasing an expense.

 Insurance Expense
 7,500

 Prepaid Insurance
 7,500

c. Similarly, the Prepaid Telephone covered one year of service. Instead of using a separate account for telephone expenses, we will record them in Miscellaneous Expenses.

Adjusting is the process of updating the amounts in the accounts in the absence of a specific transaction.

Websell, Inc. Unadjusted Trial Balance as of June 30, 2004 ACCOUNT DR. CR. Cash \$2,235,000 Accounts Receivable 10,000 Supplies 2,000 Prepaid Insurance 15,000 Prepaid Rent 75,000 Prepaid Telephone 2,000 Copyright Permissions 100,000 Software 50,70 Equipment 500,000 Internet Access Rights 40,000 1,200,000 Web Site Accounts Payable 1,000 Revenue Received in Advance 0 Bonds Payable 2,000,000 Common Stock 1,000,000 Retained Earnings 0 Software Sales—Web Site 762,000 Software Sales—Retail 620,000 Consulting Revenue 123,000 Wages Expense 377,000 Commissions Expense 62,000 Marketing & Distribution Expense 38,000 \$4,506,000 Total \$4,506,000

. Prepaid rent was for 12 months.

 Rent Expense
 37,500

 Prepaid Rent
 37,500

e. Some of the supplies have been used. A check of the stockroom reveals that \$500 of supplies remain. Instead of using a separate account for supplies expenses, we will record them in Miscellaneous Expenses.

 Miscellaneous Expenses
 1,500

 Supplies
 1,500

f. One-tenth of the Copyright Permissions has lapsed. The expense for this item is recorded as amortization, a fancy name for the expiration of assets that are intangible.

g. The software is expected to be obsolete two years after its purchase. Again, we record this as an amortization expense.

 Amortization Expense
 12,500

 Software
 12,500

h. The equipment has a useful economic life of five years. Websell uses straight-line depreciation. Straight-line depreciation allocates a fixed fraction of the asset's cost to expense in each period. Instead of decreasing the balance in the equipment account

Exhibit 3.5 Websell T-Accounts

Websell T-Accounts (amounts in thousands) (June 30, 2004) Preadjustment

ASSETS

Cash			Accounts Receivable					Supplies			
	Dr.	Cr.			Dr.	Cr.			Dr.	Cr.	
(1)	1,000	300	(3)	(13)	3	48	(22)	(5)	2		
(2)	2,000	75	(4)	(16)	55						
(15)	65	1	(6)								
(19)	762	2	(7)		10				2		_
(20)	620	50	(8)								
(22)	48	40	(9)								
		100	(10)								· ·
		15	(11)							3	
		1,200	(14)							D.	
		377	(17)								
		38	(18)						70.		
		62	(21)								
	2,235										

Prepaid Insurance

	Dr	Cr.
(11)	15	
	15	

Prepaid Rent

	Dr	Cr.
(4)	75	
(1)	, 5	
	75	

Prepaid Telephore

Copyright Permissions

Dr.	Cr.
50	
50	

(8)

Equipment

	Dr.	Cr.
(3)	300	
		50.5
	10	
	300	

Internet Access Rights

(9)

(5)

Web Site

_Dr.	Cr.
1,200	
1,200	

(14)

LIABILITIES

Accounts	Payab!	le
Dr	Cr	

	_Dr.	Cr.
(6)	1	2
		1

Revenue Rec'd in Advance

	<u>Dr.</u>	Cr.	
(16)	65	65	(15)
(10)	03	0.5	(13)
		0	
		0	

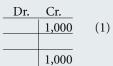
Bonds Payable

Dr.	Cr.	
	2,000	(2)
	2,000	

Websell T-Accounts (amounts in thousands) (June 30, 2004) Preadjustment

EQUITY

Common Stock



Retained Earnings

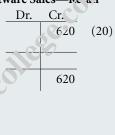


REVENUES

Software Sales—Web Site

Dr.	762	(19)
		Sho
6.//	762	

Software Sales—Rc+a'l



Consulting Revenue

Dr.	Cr.	
	3	(13)
	120	(16)
	120	(10)
	123	

EXPENSES

T 4 T	-	
Wages	Expense	2
vueco	LAPCIIS	Ė

	Dr.	Cr.
17)	377	
/		
	377	

Commission Expense

	Dr.	Cr.
(21)	62	
(21)	02	
	62	

Mktg. & Distribut. Exp.

	D1.	CI.
(18)	38	
	38	

we will create another account, Accumulated Depreciation, which will keep track of total depreciation to date and will be subtracted from the original value of the equipment account. That way, the original cost of the equipment will always be apparent on the balance sheet.

Depreciation Expense	
Accumulated Depreciation	30,000

i. The Internet Access Rights were acquired for a four-year period. Six months have elapsed since their acquisition.

Amortization Expense	5,000	
Internet Access Rights		5,000

The Web site presents a special problem. To be effect, e it must be continually updated. These costs will likely be counted as expended as they occur. The thinking is that they generate the current benefit, not the tuture benefit, of maintaining viability of the Web site. The \$1,200,000 recorded in Web Site, however, represents an initial investment in the site's basic structure and the one-time cost of transforming printed material into electronic form. Websell management expects the basic Web structure to last three years.

Amortization Expense	
Web Site	100,000

k. An examination of Wages expense shows that employees earned \$33,000 in wages not yet represented in the accounts. These wages will be paid at the next regularly scheduled pay day. We must recognize the value of the work performed in this 6-month period and set up a liability account for its payment.

```
      Wages Expense
      33,000

      Wages Payable
      33,000
```

- l. Co.n. vissions Expense, Marketing and Distribution Expense, Accounts Payable, and Roymue Received in Advance all require no adjustment.
- m We should record the interest on the Bonds Payable, because we used the money for six months. The bonds pay 6% annual interest. For the six months elapsed since their issuance, the bonds accumulated 1/2 of 6% of \$2,000,000, or \$60,000 in interest. We must set up a liability account and recognize the interest as an expense.

```
        Interest Expense
        60,000

        Interest Payable
        60,000
```

- n. Consulting Revenue, Common Stock, Software Sales—Web Site, and Software Sales—Retail require no adjustment.
- o. Retained Earnings, however, is another matter. The temporary accounts held income statement items out of Retained Earnings. We must adjust the retained earnings account by closing all the temporary revenue and expense accounts. We begin with the revenue accounts.

Consulting Revenue	
Software Sales—Web Site	
Software Sales—Retail 620,000	
Retained Earnings	1,505,000

p. Now we close the expense accounts.

Retained Earnings	
Wages Expense	410,000
Rent Expense	37,500
Insurance Expense	7,500
Depreciation Expense	30,000

Amortization Expense	127,500
Interest Expense	60,000
Commissions Expense	62,000
Miscellaneous Expenses	2,500
Marketing & Distribution Expense	38,000

Having adjusted and closed the accounts, we are ready to prepare an income statement and a balance sheet. The income statement is prepared by analyzing the retained earnings account for revenue and expense entries. The balance sheet is a properly formatted listing of all accounts with nonzero balances. Being a stickler for always including on your balance sheets any account with a nonzero balance will help you catch any revenue and expense accounts that you may have forgotten to close. Also, another reason for the name balance sheet is that it lists the balance's in the accounts.

Websell's income statement for the 6-month period ending June 30, 2004, is presented in Exhibit 3.6. Websell's balance sheet as of Jun. 30, 2004, is shown in Exhibit 3.7 on page 64.

The Websell example takes us through the mechanics of the bookkeeping process. Transactions occur, they are analyzed to decrimine how they affect individual accounts, and they are recorded in the journal and posted to the accounts. At the end of an accounting period adjusting entries are 1.1de, the financial statements are constructed, and temporary accounts are closed to really them for the next period.

Conclusion

This chapter introduced the economic concepts and accounting techniques behind the income statement. In particular, we defined revenues, expenses, and net income. We showed how temporary accounts are used in compiling an income statement. Compiling

Exhibit	3.6	
Websell II	nc Income Statemen	t

Websell, Inc. Income Statement for the Six Months Ended June 30, 2004 (amounts in thousands) REVENUES				
	Software sales—Web	\$ 762.0		
	Software sales—retail	620.0		
	Consulting revenues	123.0		
	Total revenues	\$1,505.0		
	EXPENSES			
	Wages	\$ 410.0		
	Amortization	127.5		
	Commissions	62.0		
	Interest	60.0		
	Marketing & distribution	38.0		
	Rent	37.5		
	Depreciation	30.0		
	Insurance	7.5		
	Miscellaneous	2.5		
	Total expenses	<u>\$ 775.0</u>		
	Net Income	<u>\$ 730.0</u>		

Exhibit 3.7Websell, Inc. Balance Sheet

Websell, Inc. Statement of Financial Position as of June 30, 2004 (amounts in thousands) **ASSETS** LIABILITIES Current assets: Current liabilities: \$2,235.0 Cash Accounts payable \$ 1.0 Accounts receivable 10.0 Wages payable 33.0 Supplies 500.0 Interest payable 60.0 Total current liabilities Prepaid insurance 7.5 94.0 Prepaid rent 37.5 Non carrent liabilities: Prepaid telephone 1.0 \$2,291.5 bond payable Total current assets 2,000.0 Total liabilities \$2,094.0 Noncurrent assets: 7.5 **EQUITY** Software Copyright permissions 90.0 Common stock \$1,000.0 Equipment Retained earnings 730.0 270.0 Total equity \$1,730.0 Less accum. dep. Internet access rights 35.0 Web site 1,100.0 Total noncurrent assets \$1,532.5 Total assets Total liabilities & equity \$3,824.0

the ince n.2 statement prompts us to adjust the accounts to bring them up-to-date and to close the revenue and expense accounts.

The concepts and techniques introduced in Chapters 2 and 3 are remarkably general and robust. They can be used with any set of conventions that specify rules for defining assets and liabilities, for recognizing revenue, and for recognizing expenses and matching them to revenues. These concepts and techniques are useful across a variety of contexts, including the international setting in which the conventions of accounting vary greatly. Regardless of the conventions, the concepts and techniques introduced here can be applied.

The next chapter reverses our trend of introducing more and more examples of assets and liabilities to concentrate on just one type of asset: cash. We introduce the statement of cash flows for many reasons, not the least of which is the information it contains for the users of financial statements. As we will see, cash flow statements are also useful devices for cementing your knowledge of basic accounting skills.

Key Terms

accrual accounting 52	income 44	period expenses 52
adjusting 58	journal 55	recognition 49
closing an account 53	loss 44	retained earnings 54
expenses 51	matching 51	revenues 48
general ledger 55	net assets 44	temporary accounts 54