

Projected Financial Statements

Key Points

- \$ Projected financial statements include an opening-day balance sheet, projected income statements for at least three years, and a cash flow projection.
- \$ Common accounting methods include the cash basis, the accrual basis, and the completed-contract method.
- \$ The balance sheet compares the possessions of a company and the debts that it owes on a specific day.
- \$ The opening-day balance sheet will closely correspond to the startup costs.
- \$ The projected income statement estimates sales, cost of goods sold, expenses, and profit.
- \$ The calculation for cost of goods sold varies by industry.
- \$ The income statement for a corporation and a proprietorship are different because the owners' salaries are recorded differently.
- \$ A cash flow projection estimates cash coming into the business and cash paid out; profitable businesses may still have cash shortages due to seasonal fluctuations and amounts due from customers that have not been collected.

The projected financial statements that are included in the business plan are the opening-day balance sheet, the projected income statements, and the projected cash flow statements. Before describing these, a discussion of accounting methods is necessary because several different methods are used to develop financial statements.

ACCOUNTING METHODS

Cash Basis

The cash basis is the simplest method and is the easiest to use. The *cash basis* records a sale when payment is received from the customer and records an expense when the bill is paid. For some businesses (especially service businesses that do not extend credit) this method works well and can be used for management purposes and for tax purposes. However, the cash basis does not always provide an accurate picture of the financial status of the company. Also, for companies that extend credit to their customers, the cash basis does not work well because the cash received from customers is not necessarily an accurate reflection of sales. Collections from customers may lag behind sales, making sales appear lower than they actually are.

Accrual Basis

The *accrual basis* records sales when they are made and records expenses when they are incurred. This method is not as simple as the cash method but gives an accurate picture of the financial health of the company. For companies that carry inventory and/or those that extend credit, the accrual basis is the best method to use.

Completed-Contract Method

Some firms, such as construction companies, work on projects that extend over many months. In these instances, it would give an inaccurate portrayal of the company if no expenses or income were recorded until the project was completed. For this reason, a method known as the *completed-contract method* is used. The customer is often billed as the project progresses (for example, at increments of 25, 50, and 75 percent completion), and a corresponding amount of expenses for materials and labor are recorded at the same time. This presents a more accurate picture of the income and expenses than if the cash or accrual method were used.

BALANCE SHEET

The *balance sheet* compares the possessions of a company and the debts that it owes on a specific day. Therefore, while the income statement records profit or loss over a period of time, the balance sheet shows the financial situation on a certain day.

Assets

A company's possessions, called *assets*, may be tangible items such as machinery and equipment, or they may be intangible assets such as a patent or goodwill. On the balance sheet, assets are divided into several categories—current, fixed, and other.

Current assets are those that are easily converted into cash and include the following:

- \$ *Cash*. All cash on hand in the business and in the business checking and savings accounts is recorded.
- \$ *Accounts receivable*. If a company extends credit and customers owe for purchases, this is a company asset because it is money that will be received in the future.
- \$ *Inventory*. All items available for resale are current assets. In a manufacturing firm, the inventory may be separated into two categories—raw materials and finished goods.
- \$ *Supplies*. All supplies such as shop supplies, office supplies, and bags and boxes for customers' packages would be included.
- \$ *Prepaid expenses*. The prepaid expenses listed in startup costs are considered a current asset.

Fixed assets are items that are more permanent in nature and are used in the business. These include the following:

- \$ *Machinery, equipment, furniture, fixtures*. All items listed in your startup costs in these categories would be fixed assets.
- \$ *Land and buildings*. If you purchase land and a building or if you construct a building, this would be shown in the amount of the price paid or the construction costs.
- \$ *Renovations*. If you spend money for renovations to leased property, this is considered a business asset even though you do not own the property.
- \$ *Vehicles*. This includes all company cars, trucks, and so on.

A company may have assets that do not fall into these categories. For example, if you are required to pay deposits for leases or utilities, the money is often held for several years before it is returned. For this reason, it is not considered a current asset and is therefore placed in a category called "other assets." Similarly, a company may have intangible assets such as goodwill or patents; these are included in "other assets."

Liabilities

The *liabilities* section of the balance sheet includes all debts that the company owes. As with the assets, the liabilities are categorized. Liabilities are classified as *current* (those that must be paid within 12 months) and *long-term* (those that are due more than one year after the date of the balance sheet).

Current liabilities are as follows:

- \$ *Accounts payable*. All bills due for inventory and supplies are included in *accounts payable*.
- \$ *Accrued expenses*. Bills due for utilities and other miscellaneous expenses are considered *accrued expenses*. Also, if employees are paid every two weeks and wages are owed to them when the balance sheet is prepared, these would be included.

\$ *Notes payable.* Any short-term loans that are due within 12 months from the date of the balance sheet are considered a current liability. Loan payments include both principal (loan repayment) and interest. Only the principal is recorded on the balance sheet.

\$ *Current portion of long-term debt.* Even if a loan is to be repaid over several years, a portion of the loan is due within the next year. That principal portion due within the next 12 months is considered the *current portion of long-term debt*. For example, if loan principal of \$10,000 is due over a five-year period, and \$3,000 of that amount is due within the next year, the \$3,000 is considered the current portion of the long-term debt.

Long-term liabilities are debts or portions of debts that are due more than 12 months from the date of the balance sheet. Sample loan amounts with estimated monthly payments, current portion, and long-term portion are shown in Table B-7. The current portion of the debt is subtracted from the total. This is shown in the table as well as on the sample balance sheet in Figure B-13.

Equity

Another category on the balance sheet is called the *equity, net worth, or capital account*. This account represents the difference between the assets and liabilities. Total assets minus total liabilities must equal net worth or equity. The equity includes all of the money the entrepreneur has invested from personal funds as well as retained earnings. *Retained earnings* is an accumulation of all profits and losses of the company from the day it began until the day the balance sheet is prepared. If the company makes a profit, retained earnings (and therefore, equity) increases; if the company loses money, retained earnings (and therefore, equity) decreases. (On opening day, retained earnings is 0.) Although the total equity figure does not necessarily represent the market value of the company, it is an important figure because financial institutions often compare the total liabilities to the total equity if the company applies for a loan.

TABLE B-7 Calculation of current and long-term portions of a loan

LOAN AMOUNT	PAYBACK	INTEREST	FIRST-YEAR PAYMENT	FIRST-YEAR CURRENT PORTION	LONG-TERM DEBT
10,000 (van)	3 years	10%	\$4,020 1,000 interest 3,020 principal	\$3,020	\$6,980 (\$10,000 - \$3,020)
20,000 (equipment)	4 years	12%	\$6,584 2,400 interest 4,184 principal	\$4,184	\$15,816 (\$20,000 - \$4,184)
100,000 (building)	15 years	10%	\$13,147 10,000 interest 3,147 principal	\$3,147	\$96,853 (\$100,000 - \$3,147)

Assets		
Current assets:		
Cash (working capital)	\$20,000	
Supplies	2,000	
Prepaid expenses	4,000	
Inventory	<u>60,000</u>	
Total current assets		\$86,000
Fixed assets:		
Furniture and fixtures	\$15,000	
Machinery and equipment	10,000	
Renovations	<u>25,000</u>	
Total fixed assets		\$50,000
Other assets		
Deposits	\$4,000	<u>\$4,000</u>
Total assets		\$140,000
Liabilities		
Current liabilities		
Current portion of long-term debt	<u>\$10,540</u>	
Total current liabilities		\$10,540
Long-term liabilities		
Note payable	\$100,000	
Less: current portion	<u>10,540</u>	
Total long-term liabilities		<u>\$89,460</u>
Total liabilities		\$100,000
Equity		
Total liabilities and equity		<u>\$140,000</u>

FIGURE B-13 The gift shop opening-day balance sheet

OPENING-DAY BALANCE SHEET

The opening-day balance sheet will correspond to the startup costs of the business. For example, suppose startup costs for a gift shop total \$140,000, as shown below:

<i>Inventory</i>	\$60,000
<i>Furniture and fixtures</i>	15,000
<i>Machinery and equipment</i>	10,000
<i>Prepaid expenses</i>	4,000

Supplies	2,000
Deposits	4,000
Building renovations	25,000
Working capital	<u>20,000</u>
Total startup costs	\$140,000

The owner plans to invest \$40,000 of her own money and borrow \$100,000 from the bank for seven years at 10 percent interest. The monthly payments would be approximately \$1,712. The first-year total loan payments would be \$20,540 and would include \$10,000 in interest and \$10,540 in principal. The opening-day balance sheet for this company is shown in Figure B-13.

PROJECTED INCOME STATEMENT

The income statement is completed on a periodic basis and records sales, cost of goods sold, expenses, and profit or loss.

- \$ *Sales.* On the income statement, the *sales* of a company may be listed as "sales," "income," or "revenue," depending on the type of company. If the statements are completed on an accrual basis, this represents the sales that have been generated, not necessarily those for which payment has been received.
- \$ *Cost of goods sold.* *Cost of goods sold* includes any costs for products, materials, or labor that are directly related to the sale. In a retail firm, cost of goods sold is the costs paid to suppliers for inventory. In service firms such as housecleaning or maid service businesses, the product cost is very small, but labor is a major part of the cost of goods sold. In construction firms, both labor and materials costs are often included in this section. Thus, the cost-of-goods-sold section will be different for different firms. Some of the more common calculations are shown in Figure B-14.
- \$ *Gross margin.* *Gross margin*, or *gross profit*, is the difference between sales and cost of goods sold. It shows the markup on the sales or activity of the company. For example, if a company has sales of \$100,000 and cost of goods sold of \$60,000, the gross margin would be \$40,000. Thus, it would be said that the company has a markup on sales of 40% ($\$40,000/\$100,000$).
- \$ *Operating expenses.* *Operating expenses* include ongoing expenditures that occur in the process of selling and managing the company. As a company grows, the operating expenses may have subcategories such as "selling expenses," "general and administrative expenses," and so forth.

There is one major difference on the income statement between a proprietorship and a corporation owner. The corporation owner's salary is a tax-deductible expense. The money that is taken by a proprietor or a partner is not a tax-deductible expense and is not shown on the income statement. The sample income statements for a corporation (Figure B-15) and a proprietorship or partnership (Figure B-16) show this difference.
- \$ *Net profit.* Net profit is equal to gross margin minus operating expenses. The full amount is not available to the entrepreneur, however, since income taxes and other cash outlays must be deducted from this sum.

Cost of Goods Sold for a Retail Gift Shop

Beginning inventory
 + Purchases
 + Freight
 - Ending inventory
 = Cost of goods sold

Cost of Goods Sold for a Construction Firm

Direct material
 + Direct labor
 = Cost of goods sold

Cost of Goods Sold for a Manufacturing Firm

Beginning inventory of raw material
 + Purchases
 + Freight-in
 - Ending inventory of raw material
 + Direct labor
 = Cost of goods sold

FIGURE B-14 Cost-of-goods-sold calculations for various industries

A sample income statement for Fine Wines, Inc., a retail shop, is shown in Figure B-17.

CASH FLOW

Many entrepreneurs are surprised to find that a "profitable" business may not be able to pay all of the bills that come due. This is caused by several factors. First, several bills must be paid out of the profit that the company makes. These bills do not appear as expenses on the income statement, but they must be paid nonetheless. Several other factors (the extension of credit to customers, seasonality, and so forth) also affect the cash balance of a company. These factors are discussed next. See also Table B-8, which contrasts the cash flow statement with the income statement.

- § *The proprietor's or partner's salary.* As stated earlier, these are not expenses and do not appear as a tax-deductible operating expense. They do drain cash out of the company, however.
- § *The principal paid on a loan.* As stated in the section on financing startup costs, a loan repayment consists of two parts, the actual loan repayment (principal) and the interest. Notice that the sample income statements in Figures B-15 through B-17 show the interest as an operating expense. The principal is not included; it must be paid out of profits.

Sales	\$ _____
Cost of goods sold	
Beginning inventory	\$ _____
+ Purchases	+ _____
+ Freight	+ _____
- Ending inventory	- _____
= Cost of goods sold	\$ _____
Gross margin	\$ _____
Expenses:	
Officer's salary	\$ _____
Employee wages	_____
Accounting/legal	_____
Advertising	_____
Rent	_____
Depreciation	_____
Supplies	_____
Utilities	_____
Telephone	_____
Interest	_____
Repairs	_____
Taxes	_____
Insurance	_____
Miscellaneous	_____
Credit card fees	_____
Dues/subscriptions	_____
Total expenses	\$ _____
Net profit	\$ _____
Income taxes	_____
Net profit after taxes	\$ _____
For planning purposes, compute the following:	
Net profit	\$ _____
Less: Income taxes	_____
Less: Loan principal*	_____
Net cash	\$ _____

*Discussed in section on cash flow.

FIGURE B-15 Sample income statement for a corporation

Sales	\$ _____
Cost of goods sold	
Beginning inventory	\$ _____
+ Purchases	+ _____
+ Freight	+ _____
- Ending inventory	- _____
= Cost of goods sold	\$ _____
Gross margin	\$ _____
Expenses:	
Employee wages	_____
Accounting/legal	_____
Advertising	_____
Rent	_____
Depreciation	_____
Supplies	_____
Utilities	_____
Telephone	_____
Interest	_____
Repairs	_____
Taxes	_____
Insurance	_____
Miscellaneous	_____
Credit card fees	_____
Dues/subscriptions	_____
Total expenses	\$ _____
Net profit	\$ _____
Less: Income taxes	_____
Less: Self-employment tax	_____
Net profit after taxes	\$ _____

Note that the owner's wages have not been subtracted anywhere on the income statement. However, the money must come out of the business; therefore the following format is recommended for planning purposes.

Net profit	\$ _____
Less: Income taxes	_____
Less: Self-employment tax	_____
Less: Owner's wages	_____
Less: Loan principal	_____
Net cash	\$ _____

FIGURE B-16 Sample income statement for a proprietorship or partnership

Sales	\$700,000
Cost of goods sold	
Beginning inventory	\$125,000
+ Purchases	+530,000
+ Freight	+ 10,000
- Ending inventory	<u>-115,000</u>
= Cost of goods sold	\$550,000
Gross margin	\$150,000
Expenses:	
Officer's salary	\$ 22,000
Employee wages	34,500
Accounting/legal	1,500
Advertising	9,200
Rent	23,500
Depreciation	5,100
Supplies	3,200
Utilities	6,250
Telephone	2,300
Interest	6,400
Repairs	1,300
Taxes	6,200
Insurance	2,500
Miscellaneous	1,500
Credit card fees	7,100
Dues/subscriptions	<u>500</u>
Total expenses	\$133,050
Net profit	\$ 16,950

FIGURE B-17 Sample income statement, Fine Wines, Inc.

\$ *Increases in inventory.* If a store begins the year with \$100,000 in inventory and ends the year with \$125,000 in inventory, the increase does not decrease profit. The inventory purchases are added in "purchases" in cost of goods sold but the increase is subtracted in "ending inventory." The net effect on profit is therefore 0. The example in Figure B-18 shows financial information for two stores that are identical except that one increases inventory and the other keeps inventory constant. Notice that the net profit is identical, but Store #2 purchased (and must pay for) \$50,000 more inventory than Store #1. Thus, cash will be affected by inventory increases, but the profit will not change.

\$ *Accounts receivable.* The lag between the time a sale is made and the time the money is collected (which creates *accounts receivable*) from the customer will have a definite impact on the cash balance of the company. If the company must pay for labor and/or materials costs to complete a job

TABLE B-8 The income statement versus the cash flow statement

INCOME STATEMENT (ACCRUAL METHOD)	CASH FLOW STATEMENT
Shows sales as they are generated.	Shows sales as "Cash in" only when the money is received.
Depreciation is shown.	If depreciation is included as an expense, it must be added back in since it is not a cash expense.
Interest on the loan is listed.	Both interest and principal are included (often combined on one line titled "Loan Payment").
Beginning inventory and ending inventory are included in the calculation of cost of goods sold.	Inventory purchases are recorded as the bills are paid.
A proprietor's salary is not shown as an expense.	A proprietor's salary is shown as the money is withdrawn.

	Store #1	Store #2
Sales	\$200,000	\$200,000
Cost of goods sold		
Beginning inventory	\$100,000	\$100,000
+ Purchases	+ 75,000	+125,000
+ Freight	+ 5,000	+ 5,000
- Ending inventory	-100,000	-150,000
= Cost of goods sold	\$ 80,000	\$ 80,000
Gross margin	\$120,000	\$120,000
Expenses	100,000	100,000
Net profit	\$ 20,000	\$ 20,000

Note that the profit of both stores is identical, however, Store #2 has \$50,000 more in inventory purchases (\$125,000 compared to \$75,000). Thus, if both companies start with an equal amount of cash, Store #2 will have much less cash than Store #1.

FIGURE B-18 Inventory purchases and profit

but must wait 30 or 60 days to receive the customer's payment, this will cause cash shortages.

\$ **Seasonality.** Most businesses have peak sales seasons and other times when sales are slow. This results in periodic cash shortages even though the company is profitable for the year as a whole.

\$ **Depreciation.** Depreciation is one factor that affects profitability but does not affect cash. When fixed assets are *depreciated*, a portion of the total cost is

shown as an expense each year. However, this is not necessarily the same amount as the payments on the asset. For example, an entrepreneur may buy a van for \$20,000 by paying a \$10,000 down payment and financing the balance for five years. The payments would be based on the \$10,000 balance, but the full \$20,000 cost would be depreciated over five years. For this reason, companies with a high depreciation expense often show a small profit or even show a loss, but since there is no depreciation "payment," the company may have adequate cash.

CASE STUDY: THE TRAVEL SCHOOL

The following is an illustration of projected financial information for a new business, The Travel School. The example includes startup costs, the opening-day balance sheet, the projected income statement, and the projected cash flow. The business, a corporation, was established to provide training for travel agents and airline reservationists. Because it is a service (training), there is no cost of goods sold or inventory. Several factors should be noted. First, notice the correlation between the startup costs and the balance sheet (see Figure B-19), as discussed in the previous section. The categories in the cash flow projection are not identical to the categories on the income statement (see Figure B-20). Also note that the working capital of \$55,700 shown in startup costs is the beginning cash amount on the cash flow projection (Figure B-21).

Discussion Questions

1. What is the difference between a current asset and a fixed asset?
2. Consider the three accounting methods discussed in this section. How do they vary? Why would a company choose one method over another?
3. Why does the opening-day balance sheet correspond to the startup costs?
4. Identify three industries in which labor should be recorded as part of cost of goods sold.
5. If a proprietorship shows a net profit of \$10,000 and a corporation shows the same net profit, why are the companies not equally profitable?
6. What is the difference between an operating expense and a startup cost?
7. Why would a profitable business not be able to pay its bills?
8. If a company shows a loss each year but has a very large depreciation expense, is that company in financial trouble? Why or why not?
9. Although most businesses should have three to six months of working capital, many new businesses need much more even if they are profitable. What factors would increase the amount of working capital a company needs?

BREAK-EVEN POINT

Keep the following key points in mind:

\$ A first step in calculating the break-even point is to separate fixed and variable expenses.

Startup Costs		
Working capital	\$55,700	
Supplies	3,900	
Grand opening advertising	2,000	
Legal fees	2,000	
Computers and software	16,400	
Phone system	1,600	
Furniture and fixtures	<u>8,400</u>	
Total Startup costs	\$90,000	
Owner's investment	<u>40,000</u>	
Amount borrowed	<u>\$50,000</u>	
Opening-Day Balance Sheet		
Current assets:		
Cash	\$55,700	
Supplies	3,900	
Prepaid advertising	2,000	
Prepaid legal fees	<u>2,000</u>	
Total current assets		\$63,600
Fixed assets:		
Computers and software	\$16,400	
Phone system	1,600	
Furniture and fixtures	<u>8,400</u>	
Total fixed assets		\$26,400
Total assets		\$90,000
Current liabilities:		
Current maturity of long-term debt	<u>\$ 8,523</u>	
Total current liabilities		\$ 8,523
Long-term liabilities:		
Notes payable	\$50,000	
Less: Current maturity	<u>8,523</u>	
Long-term liabilities		\$41,477
Total liabilities		\$50,000
Equity:		
Common stock	\$40,000	
Retained earnings	<u>0</u>	
Total equity		\$40,000
Total liabilities and equity		\$90,000

FIGURE B-19 The Travel School, startup costs and opening-day balance sheet

Sales	\$185,000
Expenses:	
Rent	\$36,000
Telephone	1,500
Advertising	12,000
Insurance	2,400
Equipment leases	7,800
Office supplies	1,200
Car phone lease	780
Officer's salary	24,996
Employee wages	51,000
Employee taxes	8,360
Accounting and legal	6,000
Repairs and maintenance	2,400
Auto expense	1,200
Depreciation	5,280
Interest	4,000
Total expenses	<u>\$164,916</u>
Net profit	\$20,084
Less: Income taxes	<u>3,013</u>
Profit after taxes	\$17,071

FIGURE B-20 The Travel School, projected income statement (first year)

- \$ If the break-even point is very high, the business may not be feasible.
- \$ It is helpful to calculate both the sales volume and the number of customers needed to break even.

What Is Your Break-Even Point?

It is helpful to the entrepreneur to calculate the *break-even point*, the minimum amount of sales necessary for the company's survival. Often when the break-even point is calculated, it is obvious that the business is not feasible. For example, one entrepreneur who planned to open a women's clothing store calculated that he would need to sell a minimum of \$1,000 per day in order to survive. Based on his location and the size of the proposed store, he knew that this was not possible and he did not open the business. Thus, calculating the break-even point may prevent an entrepreneur from making a costly mistake.

Have You Identified Fixed and Variable Expenses?

One of the first steps needed to determine the break-even point is to separate the company's expenses into two categories—fixed and variable. *Fixed expenses* are those that are not affected by the sales volume of the company. For example, if a company's lease agreement states that the rent will be \$3,000 per month, the company will pay this amount every month no matter what the sales volume is. Thus, it would be a fixed expense. Conversely, if the lease agreement states that the rent

	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Jan.
Beginning cash	\$55,700	\$41,921	\$31,230	\$21,659	\$17,112	\$3,000	\$12,736	\$12,375	\$11,865	\$25,188	\$27,760	\$23,229
Cash in	218	1,606	2,726	7,500	10,464	12,204	14,636	14,657	28,540	17,039	9,961	10,027
Cash available	\$55,918	\$43,527	\$33,956	\$29,159	\$27,576	\$26,258	\$27,372	\$27,032	\$40,405	\$42,227	\$37,721	\$33,256
Cash out:												
Rent	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Telephone	125	125	125	125	125	125	125	125	125	125	125	125
Advertising	1,500	1,000	1,000	750	750	750	1,000	1,500	1,500	1,500	750	750
Insurance	1,200	0	0	0	0	0	1,200	0	0	0	0	0
Equipment lease	650	650	650	650	650	650	650	650	650	650	650	650
Office supplies	50	50	50	50	50	75	100	100	150	150	175	175
Car phone	65	65	65	65	65	65	65	65	65	65	65	65
Officer's salary	2,083	2,083	2,083	2,083	2,083	2,083	2,083	2,083	2,083	2,083	2,083	2,083
Employee wages	3,000	3,000	3,000	3,000	4,250	4,250	4,250	5,000	5,000	5,000	5,000	6,250
Employee taxes	480	480	480	480	680	680	680	800	800	800	800	1,200
Accounting/legal	500	500	500	500	500	500	500	500	500	500	500	500
Repairs/maintenance	200	200	200	200	200	200	200	200	200	200	200	200
Auto	100	100	100	100	100	100	100	100	100	100	100	100
Loan payment	1,044	1,044	1,044	1,044	1,044	1,044	1,044	1,044	1,044	1,044	1,044	1,044
Total cash out	\$13,997	\$12,297	\$12,297	\$12,047	\$13,522	\$13,522	\$14,997	\$15,167	\$15,217	\$14,467	\$14,492	\$16,142
Cash balance	\$41,921	\$31,230	\$21,659	\$17,112	\$14,054	\$12,736	\$12,375	\$11,865	\$25,188	\$27,760	\$23,229	\$17,114

Note: This cash flow does not show a cost for inventory purchases because it is a service business and does not carry inventory. If a business buys and sells inventory, the cost for purchases must be shown under "Cash out."

FIGURE B-21 The Travel School, projected cash flow (first 12 months, beginning in February)

will be 7 percent of sales, the rent is then a *variable expense* because it will increase or decrease with the sales volume. Similarly, if an employee receives a salary of \$1,500 per month, this is a fixed expense; if the employee is also paid a commission based on sales, that part would be variable.

The distinction between fixed and variable is often vague. For example, we stated that the employee's monthly salary of \$1,500 is a fixed expense. However, if sales are too low, the employee would be laid off; therefore, it might be argued that this is a variable expense. For business plan purposes, it is helpful to calculate the break-even point based on the income statement you have projected. Thus, if you projected employee wages at \$1,500 per month with no commissions on the income statement, consider that a fixed expense. Most expenses such as rent, utilities, insurance, and equipment lease costs should be considered fixed.

What Is Your Contribution Margin?

Another step in the break-even calculation is determining the contribution margin. The *contribution margin* is calculated by dividing gross profit by the sales volume. This can be calculated on a per-unit basis, or it can be determined by looking at the projected income statement.

For example, refer to the income statement for the Fine Wines store in the previous section. Sales are estimated at \$700,000, cost of goods sold is estimated at \$550,000, and the gross margin (gross profit) is estimated at \$150,000. Assume that all expenses are fixed except for supplies expense of \$3,200 and credit card fees of \$7,100. These two expenses are variable expenses. Then, the contribution margin would be calculated as follows:

Cost of goods sold is 78.57% of sales ($550,000/700,000$). Supplies expense is .46% of sales ($3,200/700,000$). Credit card fees are 1.01% of sales ($7,100/700,000$). Therefore, the total variable expenses are $.7857 + .0046 + .0101 = .8004$. The contribution margin is $100\% - 80.04\% = 1.00 - .8004 = .1996$ or 19.96%.

Notice that for service businesses such as The Travel School, the companies do not show a cost of goods sold. Therefore, the sales volume and the gross profits are the same.

Calculating the Break-Even Point

The break-even point is determined by dividing fixed expenses by the contribution margin. For example, the Fine Wines store shows total expenses of \$133,050 for the first year. However, since the supplies expense and the credit card fees are variable expenses, the fixed expenses are determined by subtracting the variable expenses from the total expenses. Therefore, fixed expenses are $\$133,050 - \$3,200 - \$7,100 = \$122,750$. We have already determined that the contribution margin is .1996, therefore, the breakeven point is $\$122,750 / .1996 = \$614,980$. If the company's sales volume the first year is \$614,980, the net profit will be \$0. If sales are higher than the break-even point, the company will make a profit; if sales are lower, the company will incur a loss.

For The Travel School, total expenses are \$164,916. If all of these expenses are fixed except for office supplies of \$1,200, fixed expenses total \$163,716 ($\$164,916 - \$1,200$). Since there is no cost of goods sold, the break-even point is \$163,716 (equal to the fixed expenses).

How Many Customers Are Needed to Break Even?

It is helpful to determine how many customers per day are needed to reach your break-even point. The first step is to determine how much a typical customer will spend each time he or she makes a purchase. Although it will vary from one customer to the next, the entrepreneur must determine the average dollar amount for each customer. For example, the Fine Wines store may sell one customer a bottle of wine for \$10 and another customer may buy several bottles of more expensive wine for a total purchase of \$45. The average would be \$27.50 ($\$10.00 + \$45.00 = \$55.00/2 = \27.50). Since the break-even point is \$614,980 and the average customer spends \$27.50, it will take 22,363 customers per year ($\$614,980/\27.50) to survive. If the store is open 360 days per year, 62 customers per day will be needed to reach the break-even point (22,363 customers/360 days).

For some businesses, there is no need to calculate an average because each customer will spend the same amount. For example, The Travel School offers only one program for \$2,000. Thus each customer will spend exactly \$2,000. Since the break-even point is \$163,716 and each student pays \$2,000, approximately 82 customers will be needed the first year to break even ($\$163,716/\$2,000 = 81.8$).

See the "Determining the Break-Even Point" checklist for assistance.

Discussion Questions

1. Completing a break-even analysis early in the business planning process may save the entrepreneur a lot of wasted effort. Why?
2. Why is it helpful to calculate both the sales volume and the number of customers needed to reach the break-even point?
3. What is the difference between a fixed and variable expense?