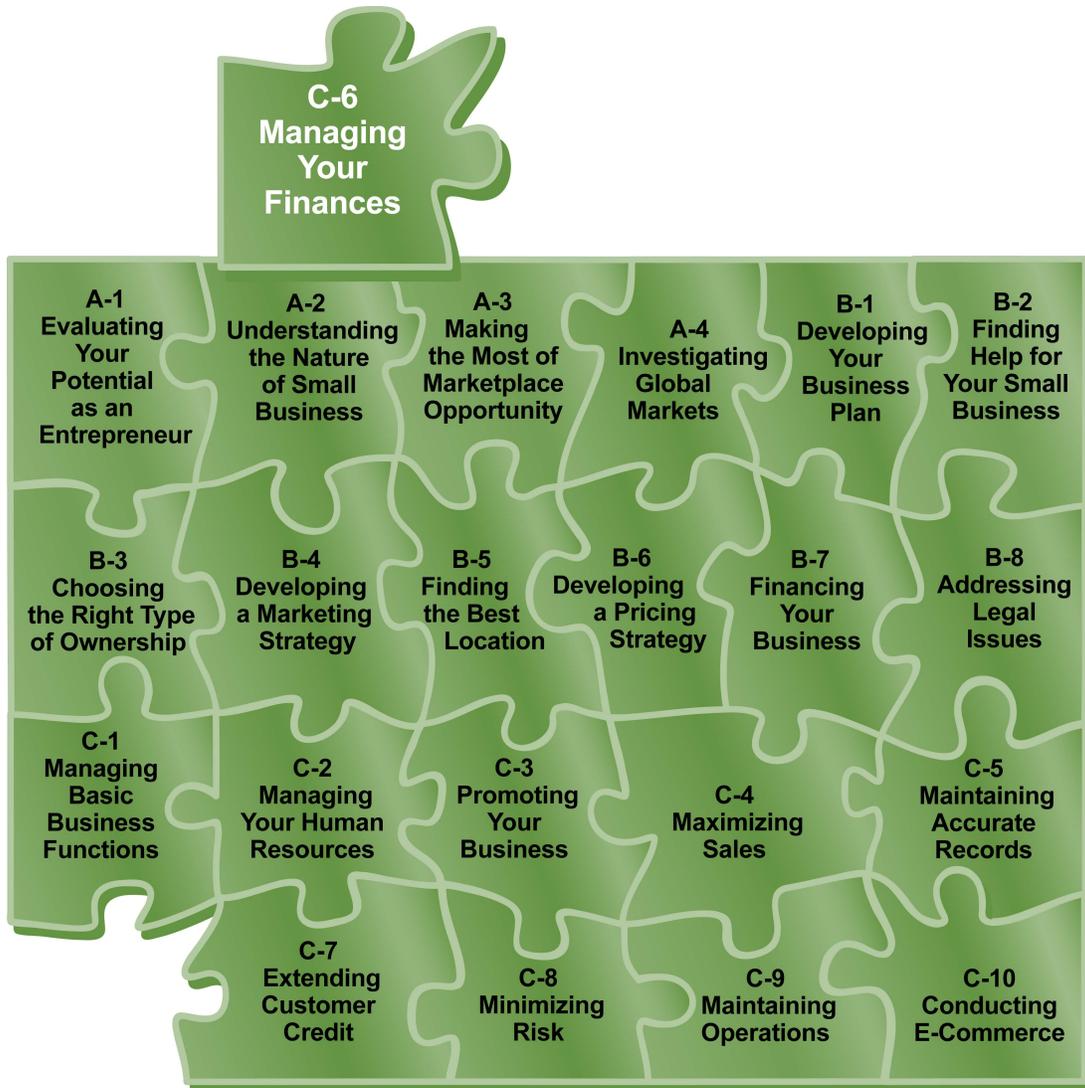


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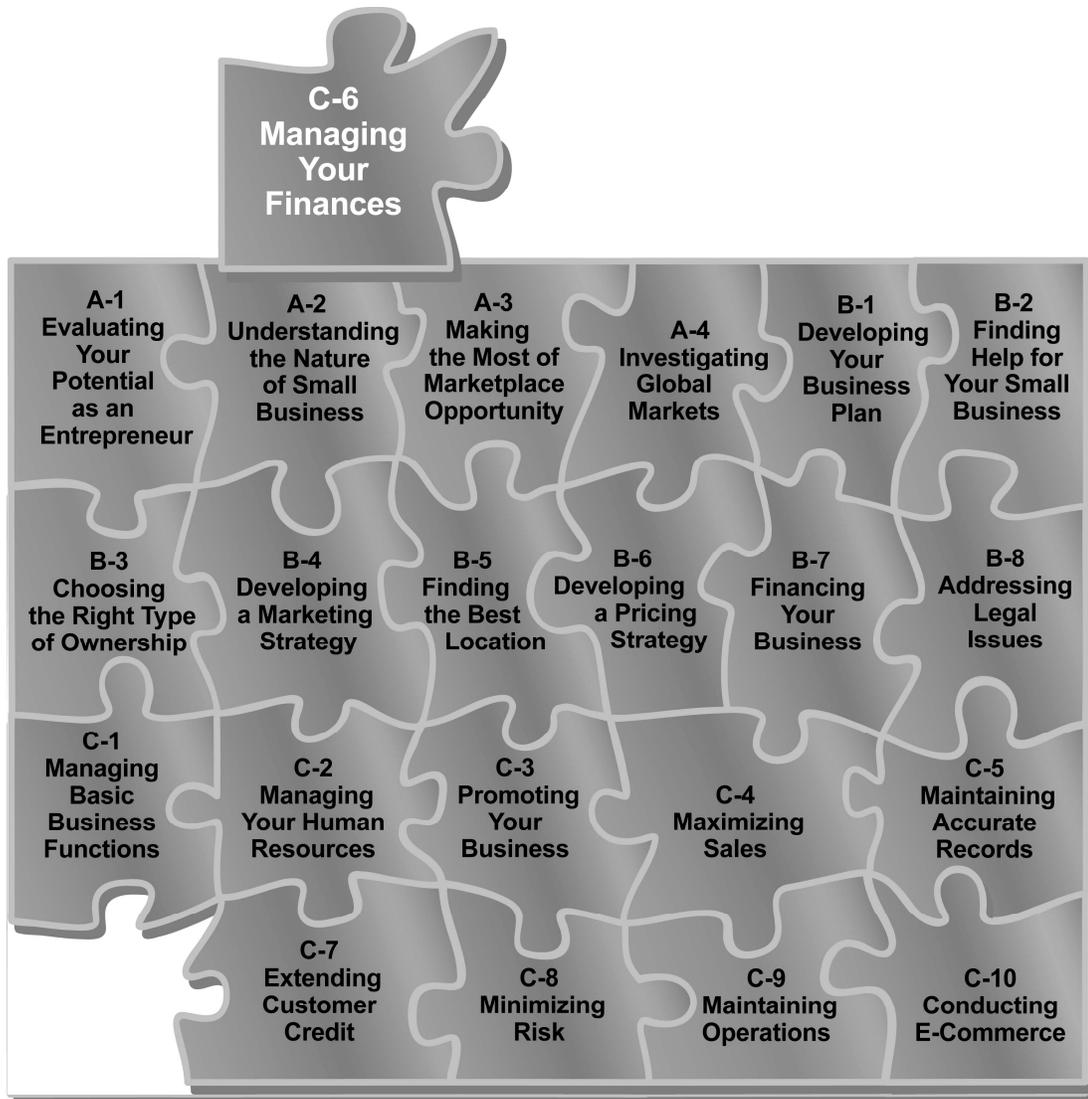
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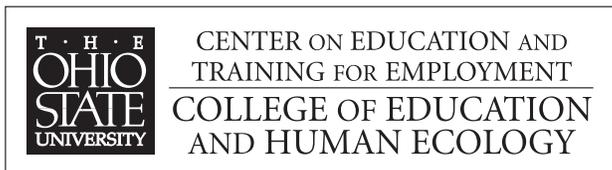
PACE

Fourth Edition

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Foreword

I am pleased to introduce you to the Fourth Edition of the Program for Acquiring Competence in Entrepreneurship (PACE). PACE represents our continuing effort to respond to the needs of the education and business communities. At no other time in history has understanding entrepreneurship been as important. For one thing, promoting entrepreneurship carries the societal imperative as small businesses as a whole contribute much to the growth and renewal of regional and national economies.

When first published in the late 1980s, PACE properly emphasized that entrepreneurship was based as much on sound planning as having products and services that were responsive to the marketplace. Through its various revisions, PACE continued to focus on the general importance of planning and managing the startup of a small business.

The current PACE edition represents a necessary break from past versions in both its format and some content. For one thing, the text format has been substantially changed from paragraphs to a series of related sections with subheadings. This change allows readers to have greater accessibility to the information, whether it is delivered via a printed booklet or a technology-based approach. And the format allows the instructor/facilitator to have greater flexibility in selecting content to accommodate the needs of various audiences and settings.

In terms of the content, PACE continues to emphasize the importance of planning and managing of a small business. But it now includes a renewed emphasis on meeting customer expectations. Any business cannot exist without a comprehensive understanding of who receives its products or services. In this sense, PACE introduces the topic of conducting e-commerce. Until recently, the entrepreneurial horizon may have been limited to serving local customers only. The advent of the Internet offers the promise of serving many more customers, but not without the accompanying challenges.

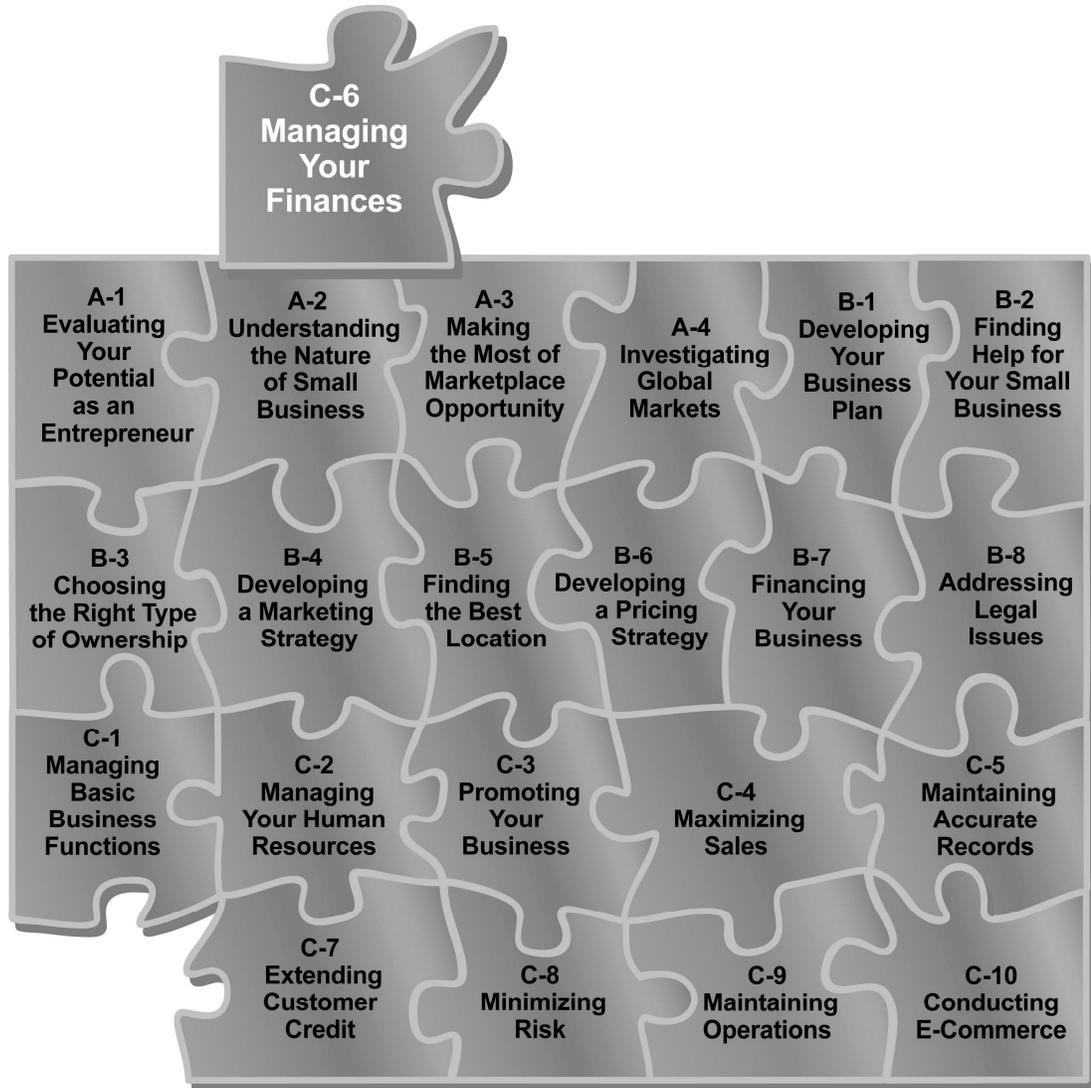
This edition was supported in part by a grant from OSU Extension and in partnership with OSU South Centers – Piketon. We hope that PACE will provide you with the understandings necessary to help you to achieve your entrepreneurship goals.

Ronald L. Jacobs
Director
Center on Education and Training for Employment

Overview

Introduction

Small business owners lack the vast array of resources for managing financial affairs that large corporations have. As an entrepreneur, you face the challenge of identifying the right tools, procedures, and financial experts to maintain your company's financial well being.



Continued on next page

Overview, Continued

Rationale A firm command of the skills and knowledge required to manage your finances is required in order to meet your financial obligations while realizing a profit.

Objectives By the conclusion of this module, you will be able to:

- Outline the basics of financial analysis including:
 - your role
 - major activities
 - potential trouble spots.
- Explain cash forecasting including:
 - the components of working capital
 - preparing the cash flow projection
 - developing controls.
- Describe the balance sheet including these entries:
 - assets
 - liabilities
 - net worth.
- Clarify the income statement including its components and how they vary between types of business.
- Explain depreciation accounting including these contrasting methods:
 - straight-line
 - declining balance
 - sum-of-the-year-digits.
- Describe the break-even analysis including:
 - the formula for identifying your break-even point
 - data resulting from the analysis
 - conclusions drawn from this evaluation.
- State the formulas for and basic components of key business ratios in the areas of:
 - liquidity
 - solvency
 - efficiency funds management
 - profitability.
- Identify the financial advisors for the various stages of your business's life.

Continued on next page

Overview, Continued

**Relevant
NCSEE
standards**

This module aligns with the following National Contents Standards for Entrepreneurship Education (NCSEE):

- I.02 Prepare estimated/projected income statement.
- I.03 Estimate cash-flow needs.
- I.04 Prepare estimated/projected balance sheet.
- I.24 Manage cash flow.
- L.33 Calculate break-even point.
- L.34 Explain factors affecting pricing decisions.
- O.06 Forecast income/sales.
- O.07 Conduct break-even analysis.
- O.12 Analyze cash-flow patterns.

More information on the NCSEE is available at: http://www.entre-ed.org/Standards_Toolkit.

Topics

The topics in this module are:

Topic	See Page
Financial Analysis Basics	5
Cash Forecasting	6
Balance Sheet	11
Income Statement	18
Depreciation Accounting	23
Break-Even Analysis	27
Key Business Ratios	29
Financial Advisors	32

Continued on next page

Overview, Continued

Exhibits

The exhibits in this module are:

Exhibit	See Page
Cash Forecasting	7
Balance Sheet	12
Income Statement	19
Cost/Profit Chart (showing break-even point)	28

Before you begin

After reviewing the above objectives for this module, determine whether you can already meet those objectives and consult your instructor if you can.

Financial Analysis Basics

Your role Your role in managing financial affairs is a major one and most likely will require you to surround yourself with trusted and competent advisors. As the owner and operator of the enterprise, you are responsible for:

- controlling the state of and balancing the various assets, liabilities, and owners equity involved in your business
 - overseeing working capital, especially planning for the cash you need to operate consistently
 - managing both short- and long-term debts
 - implementing sound credit terms and programs for credit sales
 - appraising the rate of return on your investment based on the amount of both money and time invested.
-

Major activities In carrying out your role, the major activities in which you'll be involved include:

- planning for future financial requirements in the context of your cash flow
 - analyzing the components of the balance sheet and income statements
 - calculating depreciation on assets for accounting purposes
 - identifying your break-even point
 - considering key business ratios
 - working with an accountant and/or other financial advisors.
-

Trouble spots When examining your financial situation, look closely for potential trouble spots such as:

- expenses greater than gross profits
- inadequate cash levels at the end or start of the month
- business expansion without new capital becoming available
- excessively high accounts receivable not discounted at the bank
- cash reduced below an acceptable balance because you had to buy fixed assets recoverable only through depreciation.

Seasonal fluctuations – You can attribute some of these conditions to seasonal fluctuations. One way to avoid cash shortages is short-term borrowing. Discuss this option with your banker and plan accordingly.

Cash Forecasting

Introduction When analyzing your financial situation, cash forecasting for future needs is vital to survival. Unless you plan for the cash required to operate and then develop the proper controls, you cannot expect meet your financial obligations.

Example: The next page is a sample cash flow projection for a small business.

Rationale Business growth is associated with a need for cash that grows faster than cash receipts. Planning for this circumstance is essential because you have to pay for assets such as inventory sooner than you collect accounts receivable.

Note: Too much cash on hand is not wise. It indicates that you've missed an opportunity to invest where you will earn money on the surplus.

Components of working capital Working capital is your current assets minus current liabilities. You have to forecast cash flow to manage working capital most effectively in regard to the interrelationships among the key components of:

- cash
- accounts receivable
- inventory
- accounts payable.

Definitions

- Working capital = current assets minus current liabilities
 - Current assets = those assets that can be readily converted to cash, usually within one year or less
 - Current liabilities = debt due for payment within one year
-

Continued on next page

Cash Forecasting, Continued

Sample Cash Flow Projection

Company Name													
Date													
	1	2	3	4	5	6	7	8	9	10	11	12	Total
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Cash on hand	0	0	0	0	0	0	0	0	0	0	0	0	
Cash sales													0
Collections from credit accounts													0
Loans or other cash													0
Total sales													0
Total Cash Available	0	0	0	0	0	0	0	0	0	0	0	0	
Purchases													0
Gross wages													0
Payroll expenses													0
Outside services													0
Supplies (office & operating)													0
Repairs and maintenance													0
Advertising													0
Delivery expense													0
Accounting & legal													0
Rent													0
Telephone													0
Utilities													0
Insurance													0
Taxes (real estate, inventory)													0
Interest													0
Bank service charges													0
Licenses & permits													0
Miscellaneous													0
Loan principal													0
Capital purchases													0
Owner's draw													0
Total Cash Paid Out	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash Position	0	0	0	0	0	0	0	0	0	0	0	0	

Continued on next page

Cash Forecasting, Continued

Preparing a cash flow projection

Figures used in preparing a cash flow projection are expected cash receipts and payments. The following guidelines apply to preparing cash flow projections:

Basis for forecasting – Base your cash flow projection on past experience and your knowledge of the performance of similar businesses. One technique is to base sales figures for a given month on that month's sales figures in previous years, taking into consideration current pricing and market trends.

Timeframe – Develop cash flow projections on a monthly basis from three months to a year in advance. Each month, compare the estimates with actual results and revise your projection accordingly.

Note: New businesses are expected to project monthly cash flow for at least the first year of operations.

Key assumptions – To be able to forecast cash flow accurately, you have to develop some key assumptions by which to operate such as:

- All charge purchases will be paid within one month according to your credit policy
- Sales will increase by a designated amount per month throughout the projected period
- Inventory purchases underlying the cost of goods sold will be paid for during the month in which they are sold
- The cost of goods sold represents a constant designated percentage of gross sales
- All sales are sold on credit.

A minimum cash balance should be maintained at the end of each month.

Continued on next page

Cash Forecasting, Continued

Preparing a cash flow projection (continued)

Projection of cash flow – A simple technique for projecting money in and out every month is described in the table below.

Step	Monthly Action
1	Add estimates of your expected income (sales, accounts receivables, etc.) during the next month to the cash balance at the end of the present month.
2	Subtract projected expenses for the next month from that figure. This is the cash available at the end of the month and your cash on hand to begin the next month.
3	To estimate your cash flow for the next year, repeat the above steps for the next 12 months.

Detection of patterns – As you maintain book control of the receipt and disbursement of business funds, you may detect patterns in your cash flow. These patterns indicate activity such as:

- how much cash comes in
- how much cash goes out
- how much money is left at the end of the month
- seasonal trends in cash flow
- a gradual increase in expenses in a specific category
- changing collection patterns
- unexplained inventory growth.

Developing controls

Develop financial controls to regulate the constant demands that operating a business places on your cash flow. An accounting system documents whether you have a deficit to make up in order to pay bills or a surplus to invest.

Types of controls – Tracking cash received requires both procedures for handling the funds and detailed record keeping to monitor how they are used.

Note: Design your record keeping system to be simple. You're more likely to keep detailed records if they're easy to use.

Continued on next page

Cash Forecasting, Continued

Developing controls (continued)

Control guidelines – The following guidelines apply to controlling funds:

- Keep your personal funds separate. Establish a business account separate from your personal account. Write yourself a pay check regularly.
- Record all incoming cash. The documentation can be simple, but it should include:
 - amount of cash received
 - date received
 - source from which you received it.
- Never make a disbursement from your daily cash receipts.
- Make disbursements only if you have either an invoice from the supplier or a receipt dated and signed by the person to whom you give the cash or check.
- Deposit each day's receipts on the day you receive them.
- Pay all bills with checks in order to have a record of the transaction.
- Use petty cash only for very small expenses, and balance the fund on a regular basis. Obtain a properly signed receipt for each disbursement and include the reason for the expense.

Review of control methods – Establish a regular schedule for reviewing the procedures and documentation. Follow a carefully developed checklist of points to address and questions to ask as you examine your finances.

Examples: Was this a necessary expense? Does it occur regularly?
Has the expense been properly allocated?

Balance Sheet

Introduction Your balance sheet must always balance. Assets have to equal liabilities plus net worth.

$$\text{Assets} = \text{Liabilities} + \text{Net Worth}$$

Example: The next page is a sample balance sheet for a small business.

Purpose The balance sheet gives you a picture of what your business owns and owes at a certain point in time. It's a snapshot of your assets, liabilities, and net worth.

- Assets and liabilities are balance sheet items reported at their current value.
 - Net worth, or owner's equity, reflects the owner's investment in the business.
-

Assets Assets are balance sheet entries documenting what your business owns. You can categorize them as current, fixed, or intangible. The following guidelines apply to assets:

- Asset categories are based on the availability (liquidity) of items, or the length of time required to convert them to cash.
- Analyze each item in a consistent way that accurately reflects any change in the financial climate over a period of time.
- Implement an effective inventory policy and maintain capital investment with a proper balance of fixed and current assets.

Current assets – Cash, merchandise, and accounts receivable are normally defined as *current assets* on a balance sheet. These assets can be converted into cash within 12 months. The reason for the 12-month rule is two-fold:

1. Most business managers consider 12 months a normal business cycle.
2. State and local tax returns are filed on an annual basis.

Exceptions: Accounts receivable items are not considered current assets if payment is due in more than 12 months or if inventory is either seasonal or out of style and will not sell within 12 months.

Continued on next page

Balance Sheet, Continued

Sample Balance Sheet

Your Business Name Sample Balance Sheet Month, Day, Year			
Assets			
Current Assets			
Cash			\$0
Accounts Receivable		\$0	
Less:	Reserve for Bad Debts	<u>0</u>	0
Merchandise Inventory			0
Prepaid Expenses			0
Notes Receivable			<u>0</u>
	Total Current Assets		<u>\$0</u>
Fixed Assets			
Vehicles		0	
Less:	Accumulated Depreciation	<u>0</u>	0
Furniture and Fixtures		0	
Less:	Accumulated Depreciation	<u>0</u>	0
Equipment		0	
Less:	Accumulated Depreciation	<u>0</u>	0
Buildings		0	
Less:	Accumulated Depreciation	<u>0</u>	0
Land			<u>0</u>
	Total Fixed Assets		0
Other Assets			
Goodwill			<u>0</u>
	Total Other Assets		<u>0</u>
	Total Assets		<u>\$0</u>

Continued on next page

Balance Sheet, Continued

Sample Balance Sheet, Continued

Your Business Name		
Sample Balance Sheet		
Month, Day, Year		
Liabilities and Capital		
Current Liabilities:		
Accounts Payable	\$0	
Sales Taxes Payable	0	
Payroll Taxes Payable	0	
Accrued Wages Payable	0	
Unearned Revenues	0	
Short-Term Notes Payable	0	
Short-Term Bank Loan Payable	0	
	0	
Total Current Liabilities	0	\$0
Long-Term Liabilities:		
Long-Term Notes Payable	0	
Mortgage Payable	0	
	0	
Total Long-Term Liabilities	0	0
Total Liabilities		0
Capital:		
Owner's Equity	0	
Net Profit	0	
	0	
Total Capital	0	0
Total Liabilities and Capital	0	\$0

Continued on next page

Balance Sheet, Continued

Assets (continued)

Fixed assets – Assets used over a period of several years under normal conditions are *fixed assets*. When looking at a balance sheet with only fixed assets, remember that the value of fixed assets may be based on cost minus depreciation. A more realistic estimate of worth may be the market value, or the value that buyers in the market are willing to pay for the asset.

Example: A dry cleaner operates from a building that she owns. The building is an investment that houses the entire business. Because it has a useful life of more than 12 months, it's an asset of a more permanent nature than inventory or accounts receivable.

Intangible assets – A small business owns assets that are not concrete; rather, they are *intangible assets*. The goodwill from playing a positive role in the community and respectability from servicing the public are two examples of intangible assets to which it is difficult to assign a value. However, if you buy or sell a business, a portion of the purchase price likely would be for intangible assets.

Examples: Other examples of intangible assets in the sense that a legal document says they exist are franchise fees, patents, and copyrights.

Other assets – This category of miscellaneous assets includes anything that doesn't fall into one of the above categories. Such an asset is the cash value of life insurance, or the equity in an ordinary life insurance policy you have purchased yourself. As you pay premiums over the life of the policy, you build up a specified cash value that becomes available to you as a loan from a bank or the insurance company.

Examples: Other assets include accounts receivable (debts due to you that aren't current) and investments such as stocks and bonds that you have in other companies.

Continued on next page

Balance Sheet, Continued

Liabilities as entries

Business liabilities express the cash value of what you owe to others. They're closely tied to business assets in the sense that liabilities are debts incurred in order to acquire assets. Liabilities are either current or long-term.

Current liabilities – A *current liability* is an obligation owed to an individual or firm that usually matures, or comes due, within 12 months. The following guidelines apply to current liabilities:

- A current liability and paid with a current asset, either cash assets or assets to be converted into cash within 90 days.
- The most common type of current liability is accounts payable, a debt usually to be paid within one year.
- Other current liabilities include withholding and social security taxes payable and money withheld for payroll and income taxes and required to be submitted to federal, state, and local governments within specified time periods. If a business is short on cash, it might use this money for operating expenses and experience difficulty with tax authorities.
- Another common type of current liability is the part of a long-term debt that matures within one year. Examples include the present year's payment due on mortgages and long-term notes.

Long-term liabilities – A debt that comes due after 12 months of maturity is a *long-term liability*. Examples include real estate mortgages and long-term loans.

Note: The funds from this type of liability are often used to purchase buildings, equipment, and other fixed assets.

Net worth

Net worth is your equity (or investment) in the business as owner. You acquire these assets by either incurring a debt (borrowing money) or investing your own funds (using your own cash).

Definition: Net worth = cash value of assets (cash, real estate, equipment) minus liabilities (amount you owe to repay loans or accounts payables).

Purpose – This entry tracks your progress in achieving the performance goals in terms of return on your investment in the business. It allows you to view the amount of money earned by the business from the perspective of how much you've invested in it.

Continued on next page

Balance Sheet, Continued

Net worth
(continued)

Types of ownership – The table below illustrates what net worth represents for each type of business ownership.

Type of Ownership	Net Worth Statement
Sole proprietorship	Investment by the owner
Partnership	Separate investment by each partner

Cushion for creditors – Net worth also serves as a cushion against possible losses. For creditors, your net worth is protection in case of nonpayment of a debt.

Note: If a business fails and has a negative net worth, creditors have a claim on all the assets, but after converting assets to cash, there still will not be enough to pay off the debts.

Definitions

Equity = the amount of cash you have invested in the business – your investment

Assets = those items owned by the business that can be converted to cash

Examples: real estate, equipment, inventory

Simply stated, net worth is the difference between what you own and what you owe.

Example: You have a home that has been appraised for \$150,000. You borrowed money from the bank to purchase the home. You also had \$30,000 cash you used for a down payment. Your net worth for the home is:

Home value	\$150,000
Down payment	<u>- \$30,000</u>
	\$120,000
Loan amount	<u>-\$120,000</u>
Net worth	\$0

You have \$0 net worth for the home.

Continued on next page

Balance Sheet, Continued

**Net worth
(continued)**

Now, you have made payments on the house for 10 years. The principal (not interest) you have paid equals \$67,000. The net worth of the home is:

Home value	\$150,000
Down payment	\$30,000
Principal payments	<u>- \$67,000</u>
Remaining principal owed on mortgage	\$53,000

Home value	\$150,000
Remaining principal owed on mortgage	<u>- \$53,000</u>
Net Worth	\$97,000

Income Statement

Introduction An income statement reflects the income and expenses of your business over a certain period of time. This financial documentation contrasts with the balance sheet, which gives the financial snapshot on a given date.

Example: The next page is a sample income statement for a small business.

Limitations The income statement contains a limited amount of information and doesn't show how efficiently the assets of the business are being used.

Note: The profit-and-loss statement (P&L) is the operating record that provides you with measures of your efficiency and ability to make a profit.

Components The components of an income statement are:

- gross sales
- cost of goods sold
- gross profit on sales
- expenses
- net profit.

Gross sales – Gross sales is the total revenues received from sales for the year. Adjust this item to figure net sales by deducting returned merchandise and allowances for spoiled or damaged merchandise.

Note: If you provide services instead of selling goods, gross sales are called *gross billings*.

Cost of goods sold – This item represents the price of the goods or services sold by your company and no other business expenses. It's the total price paid for the product sold during a specified accounting period plus transportation costs.

Continued on next page

Income Statement, Continued

Sample Income Statement

Your Company Name		
Sample Income Statement		
Month, Day, Year		
Revenue		
Gross Sales		\$0
Less:	Sales Returns and Allowances	0
	Net Sales	<u>0</u>
Cost of Goods Sold		
Beginning Inventory		0
Add:	Purchases	0
	Freight-in	0
	Direct Labor	0
	Indirect Expenses	0
		<u>0</u>
Less:	Ending Inventory	0
	Cost of Goods Sold	<u>0</u>
	Gross Profit (Loss)	<u>0</u>
Expenses		
Advertising		0
Amortization		0
Bad Debts		0
Bank Charges		0
Charitable Contributions		0
Commissions		0
Contract Labor		0
Credit Card Fees		0
Delivery Expenses		0
Depreciation		0
Dues and Subscriptions		0
Insurance		0
Interest		0
Maintenance		0
Miscellaneous		0

Continued on next page

Income Statement, Continued

Sample Income Statement, Continued

Your Company Name Sample Income Statement Month, Day, Year		
Expenses (continued)		
Office Expenses	0	
Operating Supplies	0	
Payroll Taxes	0	
Permits and Licenses	0	
Postage	0	
Professional Fees	0	
Property Taxes	0	
Rent	0	
Repairs	0	
Telephone	0	
Travel	0	
Utilities	0	
Vehicle Expenses	0	
Wages	0	
Total Expenses	0	0
Net Operating Income		
		0
Other Income		
Gain (Loss) on Sales	0	
Interest Income	0	
Total Other Income	0	0
Net Income (Loss)		
		0

Continued on next page

Income Statement, Continued

Components (continued)

Gross profit – After you find the net sales (gross sales minus returns and allowances) and cost of goods sold, you can calculate the gross profit, or gross margin. This figure equals sales minus the cost of the sales. The following guidelines apply to gross profit:

- This amount is actually the dollar portion of your sales that represents your markup on the inventory.
- If you discover that your profits are not as much as you want them to be, you can either increase your profit margin – your mark-up – or increase sales volume on the same margin with the following outcomes:
 - Increasing the mark-up may reduce volume, resulting in no change.
 - Increasing sales volume on the same margin is difficult and might add other costs such as advertising that would eat up any profit realized.
- Gross margin doesn't take into account selling or operating expenses.

Expenses – This component includes two categories: selling expenses and other operating expenses.

- Selling expenses are the cost of activities performed to increase the sales volume including:
 - salaries and commissions of salespersons
 - travel expenses for salespersons
 - delivery costs
 - advertising.
- Operating expenses are the cost of managing and carrying out your business, not directly due to sales or service activities. These expenses include:
 - office expenses
 - salaries
 - accounting expenses
 - rent
 - telephone costs
 - utilities
 - equipment repairs
 - depreciation of equipment and buildings.

Continued on next page

Income Statement, Continued

Components (continued)

Net profit (or loss) – This figure is the amount left after all usual costs and expenses for the accounting period have been deducted. The following guidelines apply to net profit:

- Net profit (or loss) is the bottom line representing the results of your effort.

Example: Subtracting total selling expenses from gross profit gives you the net profit. Net profit shows the profit from all buying and selling activity.

- Net profit doesn't reflect any income taxes because income taxes aren't considered a normal operating expense.

Note: If you operate a sole proprietorship, net profit (or loss) from your business is considered income on your individual federal income tax return.

- Net profit (or loss) = sales – (cost of goods sold + overhead + other expenses)
-

Depreciation Accounting

Introduction Depreciation is the decrease in the value of an item through age, wear, or deterioration. It's a normal expense of doing business, and you should take it into account since it affects your income and capital, on which you pay taxes.

Purpose Depreciation accounting helps you recognize that productive assets are consumed by use and you must make an allowance to replenish these assets.

Effect on assets Depreciation reduces both your assets and net income and, therefore, your tax liability. This expense, however, does not decrease your actual cash.

Standards **Preparation** – Professionals who prepare financial statements must adhere to prescribed accounting standards as well as principles such as conservatism, consistency, and full disclosure.

Regulation – Government agencies control the periods of time that you may use for depreciation and the manner in which you may account for it. The depreciation rate affects how much you have to pay in taxes.

Accounting methods To account for depreciation, spread the cost of your tangible fixed assets over their useful life through periodic depreciation charges to an expense account. You can also make corresponding credits to a valuation account referred to as the *allowance for depreciation*.

Total amount charged – The total amount charged to expense may not exceed the total cost of the asset (purchase price) minus any net salvage value (sale or trade-in price) expected at the end of its useful life.

Net salvage value – To determine the net salvage value, deduct estimated removal costs from expected sale proceeds.

Most common methods – The three methods of accounting for depreciation most commonly used are:

- straight-line
 - declining-balance
 - sum-of-the-year-digits.
-

Continued on next page

Depreciation Accounting, Continued

Straight-line method

The straight-line method of computing depreciation is the most widely used. The same amount of depreciation is recorded for each year (or specified accounting period) over the useful life of the asset.

Calculation – To figure annual depreciation, subtract the expected net salvage value from the acquisition cost and divide that amount by the expected life in years. The equation is:

$$\text{Annual Depreciation} = \frac{\text{Acquisition Cost} - \text{Net Salvage Value}}{\text{Useful Life in Years}}$$

Example: A printer with a cost of \$400 is expected to be used for five years and have a trade-in or salvage value at the end of that time of \$40. Calculate the annual straight-line depreciation as follows:

$$\$72 = \frac{\$400 - \$40}{5}$$

Declining-balance method

With the declining-balance method, you apply an appropriate percentage of the total value of the item to its net book value at the beginning of the year to obtain the depreciation charge for that year.

Maximum percentage – The maximum percentage allowable for income tax purposes is twice the rate that the straight-line method uses.

Example: The \$400 printer above had a useful life of five years. Each year, depreciation was 1/5, or 20%, of the cost after subtracting the salvage value. Tax regulations for the declining rate method ignore salvage value, so the rate allowable on the same printer is twice 20%, or 40%. The table below shows the declining rate method.

Year	Beginning Value	Rate	Depreciation for the Year	Depreciation to Date
1	\$400.00	40%	\$160.00	\$160.00
2	\$240.00	40%	\$96.00	\$256.00
3	\$144.00	40%	\$57.60	\$313.60
4	\$86.40	40%	\$34.56	\$348.16
5	\$51.84	40%	\$20.74	\$368.90
Ending book value = \$31.10 (Although no salvage is used, there is still a net book value of \$31.10 after five years – slightly less than the \$40 salvage value with the straight-line method.)				

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Depreciation Accounting, Continued

Sum-of-the-year digits method

When using the sum-of-the-year digits method, you charge a fraction of the cost of the asset to expense each year. Figure the denominator and numerator of the fraction as follows:

- The denominator is the sum-of-the-year digits, which is obtained by adding the numbers for each year of the asset's life.
- The numerator is the number of years remaining in the life of the asset.

Calculation – For the final calculation, apply the fraction to the acquisition cost minus the salvage value.

Example: The digits of the years of life of the printer expected to last five years are: 1, 2, 3, 4, and 5. So the denominator is: $1 + 2 + 3 + 4 + 5 = 15$. The numerator for the first year is the number of years left in the life of the printer, or 5. Therefore, the fraction is $5/15$ for the first year. For the second year, the fraction is $4/15$; for the third year, it's $3/15$; and so on. The printer's purchase price was \$400 and the salvage value is \$40. So the fraction each year is applied to \$360. The table below shows the sum-of-the-year-digits method compared to declining balance method and straight-line method.

Year	Fraction	Cost Minus Salvage	Depreciation for Year	Declining-Balance Method	Straight-Line Method
1	5/15	\$360.00	\$120.00	\$160.00	\$72.00
2	4/15	\$360.00	96.00	96.00	72.00
3	3/15	\$360.00	72.00	57.60	72.00
4	2/15	\$360.00	48.00	34.56	72.00
5	1/15	\$360.00	24.00	20.74	72.00
Total Depreciation – 5 years			\$360.00	\$368.90	\$360.00
Net Book Value – End of 5 years			\$40.00	\$31.10	\$40.00

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Depreciation Accounting, Continued

Comparison of methods

Accelerated methods – You'll notice that both the declining-balance and sum-of-the-year-digit methods yield higher depreciation charges in the earlier years of the asset's life and lower charges later. These two methods are called *accelerated methods*. Accelerated depreciation recovers the costs of assets and gives a higher tax savings early in the life of the asset. The faster cost recovery balances higher maintenance and repair costs later in the asset's life and results in more level earnings over the life of the asset.

Making changes – For income tax reporting purposes, you can make changes from the declining-balance method to the straight-line method (for the remaining balance) at any time. But you may not make any other change in depreciation accounting methods without the written permission of tax authorities.

Using different methods – You may use several different depreciation methods at the same time for different assets or groups of assets. It's also allowable to use one method of depreciation for figuring income taxes and another for preparing financial statements.

Break-Even Analysis

Introduction Identifying your break-even point is a technique to determine when your business generates enough income to cover all expenses. When you reach this milestone, you are no longer operating at a loss – you are generating enough income to cover all expenses. You have broken even.

Purpose The break-even analysis is a tool for comparing cost to profit at different volumes of sales in order to determine how profitable different items are in the line of products that you sell. It provides the answers to questions like:

- Which items are most profitable and which are least profitable?
- Have any items surpassed their profitability peak and started declining?
- How many units of each product do we have to sell before it begins to make a profit?

Formula To find the break-even point, distinguish between fixed and variable costs. Prepare a detailed income statement and place each expense into either the fixed or variable cost category. Once you have identified these costs, use the following formula to find your break-even point:

Fixed costs – Those costs that do not change with the level of production.

Example: Rent does not depend on your level of production. Rent is a fixed amount.

Variable costs – Variable costs are costs that usually vary in proportion to the business activity. These include materials used in manufacturing, goods purchased for resale, labor, and commissions.

$$\text{Break-Even Point} = \frac{\text{Total Fixed Costs}}{\text{Selling Price (per unit)} - \text{Variable Cost (per unit)}}$$

Example: The Gilmore Global Artisan Cooperative has fixed costs of \$500. They sell an African wooden sculpture for \$5 per unit. The variable cost per unit is \$2.50. To break even, they need to sell 200 units.

$$200 \text{ Units} = \frac{\$500}{(\$5 - \$2.50)}$$

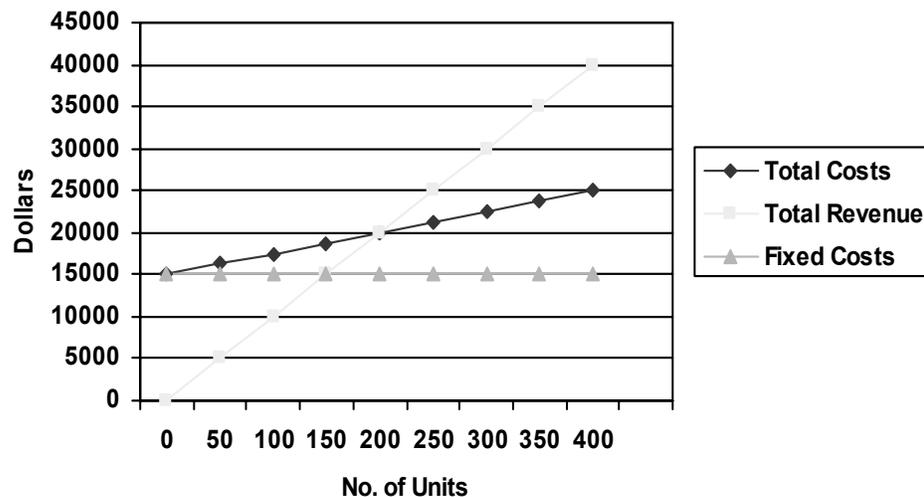
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Break-Even Analysis, Continued

Cost/profit chart

The break-even chart listed below visually depicts the relationship of cost to profit at various levels of sales volume. It identifies the break-even point, and it also shows the profit and loss for other sales volumes.

Break-Even Analysis



Resulting data

The results of a carefully developed break-even analysis give you the following data on which to base your business decisions:

- factors impacting profit
 - how to adjust costs to maximize profit
 - where your optimal break-even point is.
-

General conclusions

The break-even analysis reveals these facts about business operations:

- The larger the loss area, the greater the downside risk
 - The larger the profit area, the greater the up-side potential
 - The larger the fixed costs, the higher the risk (increased loss area)
 - The larger the proportion of variable costs, the higher the risk (increased loss area and decreased profit area).
-

Key Business Ratios

Introduction An operating expense ratio divides each separate operating expense by net sales. Examine this ratio to evaluate the relationship of expense to net sales, as well as identify trends of costs to income by monthly or seasonal changes.

Note: This technique is also referred to as the *common size statement*.

Formula To find an operating expense ratio, divide the operating expense by net sales.

$$\text{Operating Expense Ratio} = \frac{\text{Specific Operating Expense}}{\text{Net Sales}}$$

Areas addressed Key business ratios most commonly address these areas:

- liquidity
- solvency
- efficiency funds management
- profitability.

Liquidity The table below presents the types of liquidity ratios.

Type	Formula	Explanation
Current ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	<ul style="list-style-type: none"> • Determines whether current assets are sufficient to cover debts with a margin of safety for possible losses (inventory pilferage or uncollectable accounts) • Should be 2:1
Acid-test ratio (quick ratio)	$\frac{\text{Cash} + \text{Receivables} + \text{Government Securities}}{\text{Current Liabilities}}$	<ul style="list-style-type: none"> • Is a more accurate way to measure your debt-paying ability • Uses only cash, accounts receivable, and near-cash marketable securities as current assets (no inventory) to adjust the current ratio for more precision • Determines whether you can pay debts with available funds if cashflow stops • Should be 1:1 or better. At 1.0 or higher, your business is considered liquid.

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Key Business Ratios, Continued

Solvency The table below presents the single type of solvency ratio.

Type	Formula	Explanation
Debt to tangible net worth ratio	$\frac{\text{Liabilities}}{\text{Tangible Net Worth}}$	<ul style="list-style-type: none"> Measures your ability to cover current and long-term debts by examining the relationship between borrowed funds and funds owned Tangible net worth is the value of your business minus intangible assets – assets with an indeterminable value, such as goodwill, trademarks, patents, copyrights, and franchise fees Should be at least 1:1. If debt-to-intangible net worth is greater than 1:1, you're undercapitalized and should reduce debt or find more capital to invest.

Efficiency funds management The table below presents the types of efficiency funds management ratios.

Type	Formula	Explanation
Inventory ratio	$\frac{\text{Beginning Inventory} + \text{Ending Inventory}}{2}$	<ul style="list-style-type: none"> Compares cost of goods sold to average inventory (amount of inventory in stock at a given time).
Inventory turn ratio	$\frac{\text{Total Revenue}}{\text{Average Inventory}}$	<ul style="list-style-type: none"> Determines how many times average inventory on hand is sold in a given time period (how fast merchandise is being sold) Can be used to study turnover rates in similar businesses in order to establish the appropriate rate for your company A fairly high ratio indicates that inventory is current and saleable and you have good pricing policies An extremely high ratio indicates that inventory turns over too often, which may lead to shortages Inventory turnover may also be calculated as cost of goods sold divided by average inventory.

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Key Business Ratios, Continued

Efficiency funds management (continued)

The table below presents the types of efficiency funds management ratios.

Type	Formula	Explanation
Net sales to working capital ratio	$\frac{\text{Net Sales}}{\text{Current Assets} + \text{Current Liabilities}}$ <i>(working capital)</i>	<ul style="list-style-type: none"> Shows how many sales dollars you make for every dollar in working capital owned A low ratio may indicate inefficient use of working capital to generate sales An extremely high ratio may indicate insufficient working capital to maintain high sales volume Is subject to seasonal sales fluctuations, so assess by comparing current figures with similar sales periods in past years.

Profitability

The table below presents the types of profitability ratios.

Type	Formula	Explanation
Net income to net sales ratio	$\frac{\text{Net Income}}{\text{Net Sales}}$	<ul style="list-style-type: none"> Shows how much net income (or net profit) comes from every dollar of net sales Is a signal of operating efficiency Can indicate increasing expenses so review it frequently Is a key ratio for new business owners to consider.

Financial Advisors

Introduction You may find it beneficial to employ financial advisors at various stages of business growth and development.

Pre-startup In the pre-startup stage of business, you may need to consult with an objective outside party to help evaluate the methods for financing your business as well as the validity of the financial assumptions on which you're basing your early financial projections.

Resources – Good prospects for this type of advice include:

- Small Business Development Center (SBDC)
 - SCORE (originally the Service Corp of Retired Executives)
 - local accountants and attorneys
 - business owners with experience in the industry.
-

Early years In the first several years of business operations, you may require assistance such as:

- an accountant to develop and refine your financial management procedures and identify any trends within your financial statements
 - networking sponsored by the local chamber of commerce to gain insights from other business owners
 - periodic assessments of how you're handling financial matters from qualified professionals.
-

Growth and maturation As your business grows and matures, you may need more expertise in making business decisions and charting your course including:

- advisors in areas such as law and accounting to plan for succession and refine your strategic plan
 - in-house staff to provide significant input on financial matters
 - a qualified board of directors to enhance your business performance.
-

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