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**FINANCIAL MANAGEMENT
FOR
SMALL BUSINESS INSTITUTES
IN POLAND**

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Developed by

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**Center on Education and
Training for Employment
The Ohio State University
Columbus, Ohio**



PW-ABQ-055

**FINANCIAL MANAGEMENT FOR
SMALL BUSINESSES IN POLAND**

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FOREWORD

The United States Agency for International Development (U.S.AID) sponsored this project as part of the U.S.Congress initiative entitled Secure Eastern European Democracy (SEED Act). This project is one of a number of university-based initiatives to provide education for university faculty in emerging countries about business management and economics in support of the newly established market economy.

Since June of 1991, the International Enterprise Academy at The Ohio State University has worked cooperatively with the Solidarity Economic Foundation in Gdańsk, Poland, to facilitate the creation of three Polish-American Enterprise Institutes in connection with the universities in Białystok, Poznań and Rzeszów. In each site two coordinators and fifteen or more faculty members have established courses for business owners in Entrepreneurship, Marketing, Management, Finance, Strategic Planning, and Export-Import. In addition, we developed skills among the faculty for business advising in these areas and developed case studies of Polish entrepreneurs.

The development of the six curriculum products took place over a two-year period and were the cooperative efforts of the coordinators from the Polish Institutes and the faculty from various American Universities. We are indebted to the following people for their dedication, patience and understanding in addition to their outstanding expertise in the area.

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The editors of these six curriculum products deserve special thanks for two years of attention to detail and schedules that everyone thought was impossible. Both Piotr Koryński and Elżbieta Jacowicz have masters degrees in economics from the University of Gdańsk in Poland. Since the beginning of this project, they have worked at The Ohio State University in an effort to make these curriculum products appropriate for use in their country.

We also thank the secretaries in both countries and others who worked hard on these six very ambitious curriculum projects. At The Ohio State University we especially want to thank Barbara Rahe, Jeanne Thomas, Janet Ray, and Kathy Summerfield. In Poland, we want to thank Dagmara Topolewicz, Ewa Dratwa, Małgorzata Tyburczy, Edyta Rusin and Dorota Małaszkiwicz.

Because these curriculum products include many copyrighted materials that we have obtained limited permission to use for this project, this product may not be published or used for other purposes without express permission from The Center on Education and Training for Employment at The Ohio State University.

We believe that these materials will provide long-term benefits to the faculty for whom they were designed and the business owners who will participate in their courses. We hope that these American models of business training will make a difference in the communities where they are used and impact on their success in a market economy.

M. Catherine Ashmore
Director, International Enterprise Academy

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We are grateful to the primary author, Dr. Lynn Neeley of Northern Illinois University, for development of this teaching outline for use in the Enterprise Institutes in Poland. She was assisted by Bogusław Plawgo, Andrzej Jurgilewicz, M. Catherine Ashmore, Piotr Koryński, and Elżbieta Jacowicz as the materials were assembled in 1991-93.

We are also indebted to the publishers or authors who gave permission to use selected portions of their copyrighted materials. They include:

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FINANCE MANAGEMENT MODULE

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INTRODUCTION

Purpose

The purpose of finance is to use an important resource, money, in the best way possible. Why is finance important to a small business person or an entrepreneur? With good financial practices and methods, a small business person can make increased profits without increasing sales, or decreasing quality of products, lowering the level of service. Good finance leads to economic growth and a higher standard of living.

Finance enables small business persons to make decisions and to establish policies that ensure efficient and effective allocation and acquisition of monies to support the business' success. The primary foci of finance are to regulate, monitor, evaluate, and forecast the flow of funds through a business. This course consists of a 40-hour training module. For this program you will develop the following competencies in the Finance Course:

- To design and manage record keeping
- To construct financial statements
- To manage cash flows
- To evaluate performance through ratio analysis
- To evaluate performance through trend analysis
- To evaluate performance through comparison of cash flow position and profit position
- To understand the tax system
- To establish and monitor tax strategies
- To know sources of tax law information
- To plan for the financial needs of your business
- To utilize all available sources of funds
- To illustrate the importance of the time value of money
- To evaluate investments

Audience

All types of businesses can use the techniques and methods described in these finance units. Those types of businesses would include service businesses, such as attorneys or hairdressers, as well as small manufacturers, retailers, and wholesalers. Clearly one exception would be the application of inventory analysis or performance standard to service types of businesses. Generalizations or rules usually have exceptions.

Generally these finance units can benefit all business people, however, exceptions exist. Instructors may wish to compose elementary, intermediate, and advanced "menus" of finance units. For, instance, an advanced menu might not include the unit, "Record Keeping and Financial Statements." The instructor's objective should be to meet student (customer) needs in the best way.

RECORD KEEPING AND FINANCIAL STATEMENTS

UNIT 1

Title: RECORD KEEPING AND FINANCIAL STATEMENTS

Purpose: This unit is designed to show participants basic record keeping techniques and to understand how and why financial statements are constructed and maintained.

Objectives: To train participants to keep practical, useful records and to enable participants to prepare financial statements

Materials:

Transparency 1A	Importance of Financial Records
Transparency 1B	The Accounting Equation
Transparency 2	Double Entry Accounting System
Transparency 3	Assets, Liabilities, and Owners' Equity Defined
Transparency 4	Phillips' Pharmacy Balance Sheet 1 through 7 and Income statement and Cash Position
Transparency 5	Phillips' Pharmacy First Month's Transactions
Transparency 6	Phillips' Pharmacy Ledger Accounts
Transparency 7	Phillips' Pharmacy Balance Sheet, Income Statement, Funds Sources and Uses 1/31/19XX
Transparency 8	Accounting Entries
Transparency 9	Sources and Uses of Funds
Transparency 10	Phillips' Pharmacy Second Month's Transactions
Transparency 11	Phillips' Pharmacy Ledger Accounts
Transparency 12A-B-C	Phillips' Pharmacy Balance Sheet, Income Statement, Funds Sources and Uses 2/28/19XX
Transparency 13	Phillips' Pharmacy Trial Balance
Transparency 14	Phillips' Pharmacy Post Closing Trial Balance
Transparency 15A-B-C	Corrales Men's Shoes, Inc.
Transparency 16	Melissa's Health Food Store, Inc.

Handouts:

Handout 1A	Importance of Financial Records
Handout 1B	Phillips' Pharmacy First Month Transactions
Handout 2	Phillips' Pharmacy Ledger Accounts
Handout 3	Accounting Entries
Handout 4	Sources and Uses of Funds
Handout 5	Phillips' Pharmacy Second Month's Transactions
Handout 6	Phillips' Pharmacy Ledger Accounts
Handout 7	Corrales Men's Shoes, Inc.
Handout 8	Melissa's Health Food Store, Inc.

Class Exercises:

Handout 1B	Phillips' Pharmacy First Month Transactions
Handout 2	Phillips' Pharmacy Ledger Accounts
Handout 4	Sources and Uses of Funds
Handout 5	Phillips' Pharmacy Second Month's Transactions
Handout 6	Phillips' Pharmacy Ledger Accounts
Handout 7	Corrales Men's Shoes, Inc.
Handout 8	Melissa's Health Food Store, Inc.

Product:

Business records importance lists
Business ledger accounts
Business trial balance
Business balance sheet
Business income statement
Business sources and uses of funds statement

Assignment:

Compile Reasons to Assemble Good Financial Records
Construct Phillips' Pharmacy Ledger Accounts, first month
Complete Phillips' Pharmacy Ledger Accounts, second month
Tabulate Phillips' Pharmacy Trial Balance
Compose Phillips' Pharmacy Balance Sheet, Income Statement and Sources and Uses of Funds Statement

Notes to Instructor:

If possible, participants should be advised to bring a hand calculator to class with them. A pencil or pen and paper is sufficient, but a calculator will save time.

This unit should be adjusted to the level of sophistication of the participants. For some people the material will contain completely new concepts; for others much of the material may be simple.

Phillips' Pharmacy provides comprehensive examples that continue throughout several of the finance units. The Phillips' Pharmacy examples show actual account balances and financial statements. Other shorter, simpler examples have been provided as well. Either set of examples can be used; it is not required to incorporate both into this unit. Although Phillips' Pharmacy is a retail business, the concepts and techniques presented apply to service businesses as well.

Some participants may attend this session so that they can understand what their accountants are or should be providing to them as entrepreneurs.

A statement of sources and uses of funds could be a new concept even for those who are experienced with bookkeeping and accounting.

All examples of financial statements can be presented in a Polish format, a United States format, or both formats may be shown for illustrative purposes. Some entrepreneurs may wish to become familiar with the United States formats in order to evaluate possible joint ventures, partnerships, or export arrangements.

All record keeping and financial statement examples have been based on double entry bookkeeping. If the instructor wishes to present single entry bookkeeping, Polish examples should be incorporated into the class.

The accrual accounting method has been shown in this material. Cash method is another method of accounting that instructors may wish to explain and provide direction and/or examples.

Instructors should adjust times to meet the needs of their participants.

Instructors should provide the summary remarks and preview the next unit.

Estimated time:

Double entry bookkeeping	30 minutes
Record keeping use for information	30 minutes
Class break	30 minutes
Trial Balance Computation	45 minutes
Balance Sheet Construction	90 minutes
Lunch break	90 minutes
Income (Earnings) Statement Construction	90 minutes
Sources and Uses of Funds	75 minutes

¹ Waedt, Fred. Part 1 - "Building and understanding financial statement." *Financial Management for Small Business*. Small Business Development Center, University of Wisconsin, p. 1. © The University of Wisconsin System. Translated and used with permission.

² Siropolis, N. C. *Small Business Management*, 4rd ed. Houghton Mifflin Company, p. 329. © 1990 by Houghton Mifflin Company. Translated and used with permission.

Content	Process
<p>Introduction</p> <p>Record keeping and financial statements are frequently overlooked by entrepreneurs. However, these are very important for many reasons including: planning, measuring performance, controlling problems, and acquiring outside funding.</p> <p>Three primary points substantiate the extreme importance of financial record keeping: (a) they enable the small business person to improve or refine performance and efficiency; (b) they convince potential investors of historic performance and future potential; and (c) they validate the correctness of tax payments. Each of these points deserves a more detailed explanation.</p> <p>Monitor progress! The survival of your business may depend on this. If the business performance is followed with care, problems may be anticipated. At the very least problems may be found and solved more rapidly. To find a problem before it becomes a disaster is important. Problems can be solved; disasters can only be mourned.</p> <p>Convince potential investors or partners of you and your business abilities! You will be asking these people to invest part of their money or their future with you. This is a great request and possible commitment. What would a person find it necessary to do to convince you to give them money willingly? What must</p> <p style="padding-left: 40px;">bankers, partners, stockholders, or bondholders</p> <p>think of a request for money or commitments that has been based on little or no</p>	<p>Make the three points of improved performance, a demonstratable track record and potential, and tax audit defense forcefully. (Polish tax police will probably become more active and demanding as business activity increases.)</p> <p>Show TP 1A and distribute HO 1A.</p> <p>Expand the points on HO 1A and encourage discussion. Some participants may be willing to tell of experiences that they or their friends have had in these areas.</p>

Content	Process
<p>evidence? Evidence is shown in financial records. Those records can demonstrate past, current, and possible future performance.</p> <p>Finally, as your friends in the U.S. know, the tax police are a factor to be respected. Most probably the tax police will become more</p> <p style="padding-left: 40px;">active, persistent, and demanding!</p> <p>Financial records are a reliable method for protecting your interests and the well being of your business against over zealous tax police.</p> <p>All materials in this course are based on double-entry booking and use of the accrual method of accounting. Double-entry bookkeeping simply means that a business' asset must equal the total of the liabilities and the owners' equity. What are assets, liabilities, and owners' equity? Assets are things of monetary value that the business controls. Liabilities are debts. Owners' Equity is the claim on assets by the owners minus the claims on those same assets by the creditors. Accrual accounting method allows a business person to show, or account for, items such as depreciation, prepaid expenses, and accrued expenses.</p> <p>(Exercise instructor preferences with the following materials.)</p> <p>To illustrate these ideas we will use (Phillips' Pharmacy¹ or the combination of Corrales Men's Shoes, Inc.² and Melissa's Health Food Stores, Inc.³). NOTE: The instructor should decide which transparencies and handouts to use.</p>	<p>Define accrual and cash accounting methods. Also define double-entry bookkeeping, asset, liability, and owners' equity. Explain that this course (all 6 units) is based on accrual method and double entry bookkeeping.</p> <p>Introduce these ideas using TP 1-4.</p> <p>Highlight how a new business builds a balance sheet with either TP 4 or TP 15.</p> <p>Distribute HO 7 if Corrales Men's Shoes, Inc. has been chosen. Read through the descriptions to the class that are in the case.</p>

Content	Process
<p>As you can see, a business' activity is shown directly on the balance sheet. It is a "photograph" of a company at an instant in time.</p>	<p>If Phillips' Pharmacy has been chosen, read through steps 1-7 that accompany these handouts.</p>
<p>Here you can see three different financial statements that businesses construct so that their condition can be accurately shown on paper.</p>	<p>Show this point with either TP 4 or TP 15. NOTE: Corrales only shows two statements, an income statement and a balance sheet.</p>
<p>As you can see, the financial statements are related to one another.</p>	<p>Discuss the illustrative functions of financial statements and the relationships between the statements.</p>
<p>To clearly understand how the statements are each composed and how they are related to one another, we will list common transactions in ledger accounts.</p>	<p>Choose either Phillips' Pharmacy or Melissa's Health Food Store to explain this section.</p>
<p>A. Recording Business Ledger Accounts</p>	<p>Introduce these concepts with either TP 5 and 6 or TP 16.</p>
<p>By recording the transactions in ledger or "T" accounts, the information can be sorted in a systematic manner. For example, all transactions affecting the cash account will be recorded in the cash account--increases on the left side and decreases on the right side--which can be totaled and summarized on a periodic basis. The same is true for each of the remaining accounts. It is simply too cumbersome to record all of the transactions directly in the balance sheet as was done in the previous example for Phillips' Pharmacy (TP 4).</p>	<p>Show TP 8 to explain accounting conventions (debits and credits).</p>
	<p>Distribute either HO 1B and 2 or HO 8.</p>
	<p>It may be useful to show TP 8 again and have students refer to it while working with their "T" accounts. This is the transparency that explains debits and credits. Your group of participants may or may not need this help.</p>

Content	Process
<p>Accounting convention requires that certain rules be followed when recording transactions in ledger or "T" accounts. Now please take some time and put these transactions into the appropriate "T" accounts.</p>	<p>Distribute HO 3.</p>
<p>Now that you have posted the business' transactions, remember that we use the accrual basis of accounting. Not all the transactions increased or decreased that amount of cash the business has. How do we assess the business' cash position, i.e., how much cash do we have?</p>	<p>Ask participants to post transactions to "T" accounts before beginning part B.</p>
<p>Now let us take what we have completed and assemble a trial balance.</p>	<p>Show TP 9 to explain the general categories of sources and uses of funds.</p>
<p>Of course the trial balance is just an intermediate step that will enable us to construct a balance sheet, an income statement and a funds sources and uses statement.</p>	<p>Distribute HO 3.</p>
<p>B. Computing a Business Trial Balance</p>	<p>Ask participants to post transactions to "T" accounts before beginning part B.</p>
<p>As you can see the balance shown in the "T" accounts can be used to construct your trial balance. Notice that the amounts shown in each category correspond to the</p>	<p>Show TP 9 to explain the general categories of sources and uses of funds.</p>
	<p>Distribute and discuss HO 4.</p>
	<p>When the discussion of sources and uses of cash has concluded, the instructor has one of two choices. If the Phillips' example was chosen, distribute HO 5 and 6 while displaying TP 10 and 11. These show a second month of transactions for Phillips'. Now, lead the group into assembling a trial balance for either Phillips' and Melissa.</p>
	<p>If Phillips' has been chosen, illustrate this point with TP 12.</p>
	<p>Introduce the trial balance idea with TP 13 (Phillips') or construct one for the participants with the data in the Melissa example.</p>

Content	Process
<p>balances in your "T" accounts. Also notice that the debits equal the credits. Two more step should be taken before composing the other financial statements.</p>	<p>Go over each figure in the trial balance to be certain that all participants understand where the figures came from.</p>
<p>1. You or your accountant must prepare "adjusting entries." These are the entries needed to bring the accounts up to date for items such as depreciation expense, interest expense, and accrued payroll.</p>	
<p>Once the adjusting entries have been recorded, you or the accountant will again prepare a trial balance. The last step before constructing the financial statements is to make the closing entries to eliminate the balances in the revenue, expense, and drawing accounts. The net result of the transactions affecting revenues and expenses must be summarized or "closed" into the owners' equity account. The amount that is summarized or closed should represent the profit or loss earned by the company since the last time the "books were closed." If the owner has withdrawn any amounts from the business, these withdrawals would be recorded as reductions in cash (right-hand entries) and increases in the drawing account (left-hand entries). Therefore, the equity account balance will change to reflect the profit or loss earned by the company and any withdrawals made by the owners.</p>	<p>Show the participants one or two examples of typical closing entries so that they will understand the principals involved.</p>
<p>2. You or your accountant must make the closing entries outlined above. Now you have a post closing trial balance and are ready to prepare the financial statements.</p>	
<p>C. Constructing a Business Balance Sheet</p> <p>After making the appropriate entries, it is relatively easy to prepare a balance sheet and an income statement. The balance</p>	<p>Illustrate the Post Closing Trial Balance with TP 14.</p> <p>Discuss the Post Closing Trial Balance.</p> <p>Display TP 12 again to illustrate the balance sheet as it is discussed.</p>

Content	Process
<p>sheet is a listing of the assets, liabilities, and equity accounts in a format that shows the equality of assets to the liabilities plus owners' equity. In one common format the assets are listed on the left-hand side of a balance sheet, and the liabilities and equities are on the right-hand side of the balance sheet.</p>	<p>Discuss the format of the balance sheet and how the amounts shown in the balance sheet correspond to the summary of each "T" account.</p>
<p>D. Composing a Business Income Statement</p> <p>The income statement is a summary of the operating transactions which have affected the net change in ownership. It does not show how assets or liabilities changed between balance sheet dates. Sales are recorded as credits in as much as they increase "ownership." The cost of sales decrease ownership and are recorded as debits. Expenses are broken down into many different types to give the entrepreneur a useful record of what types of expenses are being incurred. As a result, even a relatively small business requires a relatively large number of accounts.</p>	<p>Continue to display TP 12 to illustrate the Income Statement as it is discussed.</p> <p>Discuss the format of the Income Statement and how the amounts shown in the Income Statement correspond to the summary of each "T" account.</p>
<p>E. Completing a Business Sources and Uses of Funds Statement</p> <p>It is not unusual for the changes in a company's cash account to be quite different than the reported accounting profit. To analyze why accounting profits and changes in the cash account are not the same, it is necessary to prepare a statement of sources and uses of funds. This statement may take on several different formats; however, the objective is to find out where funds came from and where funds were used.</p>	<p>Continue to display TP 12 to illustrate the Sources and Uses of Funds Statement as it is discussed.</p> <p>TP 9 should be shown again to refresh the participant's memories.</p> <p>Discuss the format of the Sources and Uses of Funds statement and how the amounts shown in the Sources and Uses of Funds statement correspond to the summary of each "T" account.</p>

Financial Record Importance

- A. Improve Performance and Efficiency**
 - 1. Monitor progress
 - 2. Anticipate or pinpoint problems
 - 3. Solve problems
- B. Convene Potential Investors or Partners**
 - 1. Show past and current performance
 - 2. Demonstrate capabilities or potential
- C. Substantiate Correct Tax Payments**

Waedt, Fred. Part 1 - "Building and understanding financial statement." *Financial Management for Small Business*. Small Business Development Center, University of Wisconsin, p. 1. © The University of Wisconsin System. Translated and used with permission.

The Accounting Equation

Accountants frequently talk about "balancing the books." This phrase has a very specific meaning which is expressed in the ACCOUNTING EQUATION:

$$\text{Assets (A)} = \text{Liabilities (L)} + \text{Owners' Equity (OE)}$$

$$\text{Owners' Equity} = \text{Assets} - \text{Liabilities}$$

$$\text{Assets} = \text{Liabilities} + \text{Owners' Equity}$$

Waedt, Fred. Part 1 - "Building and understanding financial statement." *Financial Management for Small Business*. Small Business Development Center, University of Wisconsin, p. 2 & 3. © The University of Wisconsin System. Translated and used with permission.

***Recording Transactions in a Double
Entry Accounting System***

When an asset increases, there must be a corresponding increase in liabilities or increase in owners' equity or decrease in another asset.

When assets in total decrease, liabilities must decrease or owners' equity must decrease.

When ownership increases, either assets increase or liabilities decrease.

Waedt, Fred. Part 1 - "Building and understanding financial statement." *Financial Management for Small Business*. Small Business Development Center, University of Wisconsin, p. 4. © The University of Wisconsin System. Translated and used with permission.

<i>Assets</i>	- things of monetary value that are under the legal control of a business entity (examples include cash, accounts receivable, inventory, land, and buildings)
<i>Liabilities</i>	- debts owed by the business (examples include accounts payable, taxes owed, short-term loans, and mortgages)
<i>Owners' Equity</i>	- the claim on assets by the owners calculated as the assets minus liabilities (liabilities are the claims on assets by the creditors)

Waedt, Fred. Part 1 - "Building and understanding financial statement." *Financial Management for Small Business*. Small Business Development Center, University of Wisconsin, p. 3. © The University of Wisconsin System. Translated and used with permission.

1. A new pharmacy is started by Pete Phillips with an investment of \$58,000. The cash is placed in the company checking account at a local bank. Assets are increased from \$0 to \$58,000 and the owner's equity is increased from \$0 to \$58,000.

The balance sheet then reads:

Balance Sheet 1

<u>Assets</u>		<u>Liabilities and Owner's Equity</u>	
Cash	\$58,000	Pete Phillips, Capital	\$58,000

2. The new business purchases some merchandise for resale and pays \$25,000 in cash. One asset is increased; another asset is decreased.

Balance Sheet 2

<u>Assets</u>		<u>Liabilities and Owner's Equity</u>	
Cash	\$33,000		
Inventory	<u>25,000</u>	P. Phillips, Capital	\$58,000
Total	<u>\$58,000</u>	Total	<u>\$58,000</u>

3. More merchandise for resale is purchased on thirty-day terms. The invoice amount is \$10,000. An asset is increased liabilities are increased from \$0 to \$10,000.

Balance Sheet 3

<u>Assets</u>		<u>Liabilities and Owner's Equity</u>	
Cash	\$33,000	Accounts Payable	\$10,000
Inventory	<u>\$35,000</u>	P. Phillips, Capital	<u>58,000</u>
Total	<u>\$58,000</u>	Total	<u>\$68,000</u>

Waedt, Fred. Part 1 - "Building and understanding financial statement." Financial Management for Small Business. Small Business Development Center, University of Wisconsin, p. 4 & 5. © The University of Wisconsin System. Translated and used with permission.

4. A sale is made to a local hospital. Goods costing \$10,000 are sold for \$15,000. This type of transaction is handled in two parts; its "customer" aspect (A) and its "cost" aspect (B).

- A. The sale is invoiced to the hospital. An asset is increased; ownership is increased.

NOTE: Revenues and expenses (profits and losses) are not ordinarily placed in the balance sheet as shown in the following balance sheets. Instead, the net income (loss) is closed to the balance sheet when the books are closed.

Balance Sheet 4-A

<u>Assets</u>		<u>Liabilities and Owner's Equity</u>	
Cash	\$33,000	Accounts Payable	\$10,000
Accounts Receivable	15,000	P. Phillips, Capital	58,000
Inventory	<u>35,000</u>	Profit or Loss	<u>15,000</u>
Total	<u>\$83,000</u>	Total	<u>\$83,000</u>

- B. From a duplicate copy of the invoice, the bookkeeper has entered the cost of the sale. The inventory is decreased; ownership is decreased.

Balance Sheet 4-B

<u>Assets</u>		<u>Liabilities and Owner's Equity</u>	
Cash	\$33,000	Accounts Payable	\$10,000
Accounts Receivable	15,000	P. Phillips, Capital	58,000
Inventory	25,000	Profit or Loss	
		Sales	\$15,000
		Less: Cost	
		of Sales	(10,000)
Total	<u>\$73,000</u>	Total	<u>\$73,000</u>

Waedt, Fred. Part 1 - "Building and understanding financial statement." Financial Management for Small Business. Small Business Development Center, University of Wisconsin, p. 5. © The University of Wisconsin System. Translated and used with permission.

5. Paid miscellaneous expenses of \$4,000. As the asset cash is decreased; owner's equity is decreased.

Balance Sheet 5

<u>Assets</u>		<u>Liabilities and Owner's Equity</u>	
Cash	\$29,000	Accounts Payable	\$10,000
Accounts Receivable	15,000	P. Phillips, Capital	58,000
Inventory	25,000	Profit or Loss	
		Sales	\$15,000
		Less: Cost	
		of Sales	(10,000)
		Expense	(4,000)
Total	<u>\$69,000</u>	Total	<u>\$69,000</u>

6. \$8,000 is collected from the hospital. Cash is increased and accounts receivable is decreased. Notice that the totals remain the same.

Balance Sheet 6

<u>Assets</u>		<u>Liabilities and Owner's Equity</u>	
Cash	\$37,000	Accounts Payable	\$10,000
Accounts Receivable	7,000	P. Phillips, Capital	58,000
Inventory	25,000	Profit or Loss	
		Sales	\$15,000
		Less: Cost	
		of Sales	(10,000)
		Expense	(4,000)
Total	<u>\$69,000</u>	Total	<u>\$69,000</u>

7. If the books are closed at this point, the balance sheet would be presented:

Balance Sheet 7

<u>Assets</u>		<u>Liabilities and Owner's Equity</u>	
Cash	\$37,000	Accounts Payable	\$10,000
Accounts Receivable	7,000	P. Phillips, Capital	59,000
Inventory	<u>25,000</u>		
Total	<u>\$69,000</u>	Total	<u>\$69,000</u>

8. The income statement for the period between balance sheet (1) and balance sheet (7) is:

*Phillips' Pharmacy
Income Statement
for the Month Ended January 1, 19XX*

Sales	\$ 15,000
Cost of Sales	(10,000)
Gross Profit	\$ 5,000
Expense	(4,000)
Net Income for Period	<u>\$ 1,000</u>

Such a statement might be prepared to show why the cash balance declined from \$58,000 to \$37,000.

Analysis of Changes in the Cash

Balance Sheet changes tending to increase cash:

Net income for period	\$ 1,000	
Increase in accounts payable	<u>10,000</u>	<u>\$11,000</u>

Balance Sheet changes tending to decrease cash:

Increase in accounts receivable	\$ 7,000	
Increase in inventory	<u>25,000</u>	<u>\$32,000</u>
Net changes tending to decrease cash:		<u>\$21,000</u>

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***Transactions During First
Month of Operations***

- A. Deposited \$58,000 into a checking account in the name of the business, Phillips' Pharmacy.
- B. Purchased merchandise for resale for \$25,000 and paid cash.
- C. Purchased merchandise for resale for \$10,000, by asking to be billed for the purchase by the vendor.
- D. Sold on account merchandise costing \$10,000 to a hospital for \$15,000.
- E. Paid miscellaneous expenses of \$4,000 during the first month of operations to get the store opened and running.
- F. In this example, the collection of \$8,000 from the hospital will be ignored. Later, this difference will be analyzed in terms of its impact, or lack of impact, on net income and changes in the cash balance.

Other Instructions

- G. Close temporary accounts to the income summary account.
- H. Transfer profit or loss to capital account.

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Ledger Accounts for Phillips' Pharmacy

Balance Sheet Accounts

Temporary Accounts

CASH

ACCOUNTS PAYABLE

SALES

ACCTS. RECEIVABLE

NOTES PAYABLE

COST OF SALES

INVENTORIES

P. PHILLIPS, CAP.

EXPENSES

P. PHILLIPS, DRAWING INCOME SUMMARY

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Balance Sheet 7

<u>Assets</u>		<u>Liabilities and Owner's Equity</u>	
Cash	\$37,000	Accounts Payable	\$10,000
Accounts Receivable	7,000	P. Phillips, Capital	59,000
Inventory	<u>25,000</u>		
Total	<u>\$69,000</u>	Total	<u>\$69,000</u>

Phillips' Pharmacy
Income Statement
for the Month Ended January 1, 19XX

Sales	\$ 15,000
Cost of Sales	(10,000)
Gross Profit	\$ 5,000
Expense	(4,000)
Net Income for Period	<u>\$ 1,000</u>

Analysis of Changes in the Cash Position**Balance Sheet changes tending to increase cash:**

Net income for period	\$ 1,000	
Increase in accounts payable	<u>10,000</u>	<u>\$11,000</u>

Balance Sheet changes tending to decrease cash:

Increase in accounts receivable	\$15,000	
Increase in inventory	<u>25,000</u>	<u>\$40,000</u>
Net changes tending to decrease cash:		<u>\$29,000</u>

Accounting convention requires that certain rules be followed when recording transactions in ledger or "T" accounts:

Asset Rule: Increases are recorded on the left (debit) side of the accounts and decreases are recorded on the right (credit) side.

Liability Rule: Increases are recorded on the right (credit) side of the accounts and decreases are recorded on the left (debit) side.

Equity Rule: Increases are recorded on the right (credit) side and decreases in equity accounts are recorded on the left (debit) side.

Revenue Rule: Increases are recorded on the right (credit) side and decreases are recorded on the left (debit) side.

Expenses: Increases are recorded on the left (debit) side and decreases are recorded on the right (credit) side. The same is true for the owner's drawing account.

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Sources

1. Increases in a liability or capital account such as:
 - a. An increase in accounts payable
 - b. An increase in accrued wages or accrued taxes
 - c. An increase in notes payable
 - d. An increase in P. Phillips, Capital
2. Decreases in asset accounts such as:
 - a. A decrease in inventories
 - b. A decrease in accounts receivable
 - c. A decrease in fixed assets such as land or buildings

Uses

1. Decreases in claims against assets
 - a. A decrease in accounts payable
 - b. A decrease in accrued wages or accrued taxes
 - c. A decrease in notes payable
 - d. A decrease in P. Phillips, Capital
2. Increases in asset accounts
 - a. An increase in inventories
 - b. An increase in accounts receivable
 - c. An increase in fixed assets such as land or buildings

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Transactions During The Second Month of Operations

- A. Paid part-time clerks \$650 for wages during the month.
- B. Paid for the \$10,000 of merchandise purchased on account in the first month of operations.
- C. Purchased a micro-computer and related software for \$7,500 to be used for accounting records, payroll records, inventory management, etc. Paid \$2,500 cash and borrowed \$5,000 from the local bank on a 120 day note at 14 percent interest. The note is dated the first of the month.
- D. Purchased a delivery vehicle for \$9,500 cash on the first of the month.
- E. Cash sales during the month totaled \$11,500 and credit sales totaled \$6,150. The total cost of goods sold was \$12,350.
- F. Merchandise purchased during the month totaled \$42,000 of which \$15,000 was paid for and \$27,000 was on account.
- G. Paid monthly rent of \$675, advertising of \$500, utilities \$250, and other miscellaneous expenses of \$150.
- H. Pete Phillips withdrew \$1,200 from the business for personal living expenses.
- I. Collected \$8,500 due on account from last month's credit sales to the local hospital.

Other Instructions

- J. Enter the increases and decreases into the "T" accounts.
- K. Prepare a trial balance.
- L. Prepare the necessary adjusting entries for interest expense and depreciation expense.
- M. Prepare an adjusted trial balance.
- N. Prepare closing entries.
- O. Prepare a balance sheet, income statement, and reconcile the difference between the change in the cash balance and the accounting profits.

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BALANCE SHEET ACCOUNTS		TEMPORARY ACCOUNTS
<u>CASH</u>	<u>ACCOUNTS PAYABLE</u>	<u>SALES</u>
<u>ACCTS. RECEIVABLE</u>	<u>ACCRUED WAGES</u>	<u>COST OF SALES</u>
<u>INVENTORIES</u>	<u>ACCRUED INTEREST</u>	<u>EXPENSES</u>
<u>OFFICE EQUIP.</u>	<u>NOTES PAYABLE</u>	<u>INCOME SUMMARY</u>
<u>ACCUM. DEPT.-OFFICE</u>	<u>P. PHILLIPS, CAPITAL</u>	
<u>DELIVERY EQUIP.</u>	<u>P. PHILLIPS, DRAWING</u>	
<u>ACCUM. DEPR.-DELIV.</u>		

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*Phillips' Pharmacy
Balance Sheet
End of Month Two*

<u>Current Assets</u>		<u>Current Liabilities</u>	
Cash	\$ 8,575	Accounts Payable	\$27,000
Accounts Receivable	12,650	Accrued Wages	150
Inventories	<u>54,650</u>	Accrued Interest	58
Total Current Assets	\$75,875	Notes Payable	<u>5,000</u>
		Total Current Liab.	\$32,208
<u>Fixed Assets</u>		<u>Owner's Equity</u>	
Office Equipment	\$ 7,500	P. Phillips, Cap.	
Less: Accum. Depr.- Office	(100)	Beg. of Month	\$59,000
Delivery Equipment	9,500	Plus: Net Income	2,642
Less: Accum. Depr.- Deliv.	<u>(125)</u>	Less: Withdrawals	(1,200)
Total Fixed Assets	\$16,775	P. Phillips, Cap. End of Month	60,442
Total Assets	<u>\$92,650</u>	Total Liab & Equity	<u>\$92,650</u>

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*Phillips' Pharmacy
Income Statement
For The Second Month*

Sales	\$17,650
Less: Cost of Goods Sold	12,350
Gross Profit	5,300
Less: Expenses	2,658
Net Income	\$ 2,642

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Sources

1.	Increases in a liability or capital account such as:	
a.	An increase in accounts payable	\$17,000
b.	An increase in accrued wages or accrued interest	208
c.	An increase in notes payable	5,000
d.	An increase in P. Phillips, Capital	1,442
2.	Decreases in asset accounts such as:	
a.	A decrease in inventories	
b.	A decrease in accounts receivable	2,350
c.	A decrease in fixed assets such as land or buildings	
	TOTAL SOURCES	\$26,000

Uses

1.	Decreases in liabilities	
a.	A decrease in accounts payable	
b.	A decrease in accrued wages or accrued taxes	
c.	A decrease in notes payable	
d.	A decrease in P. Phillips, Capital	
2.	Increases in asset accounts	
a.	An increase in inventories	29,650
b.	An increase in accounts receivable	
c.	An increase in fixed assets such as land or buildings	16,775
	TOTAL USES	\$46,425
	NET SOURCES (USES)	\$(20,425)

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*Phillips' Pharmacy
Trail Balance
End of Month Two*

	DEBITS	CREDITS
Cash	\$ 8,575	\$
Accounts Receivable	12,650	
Inventories	54,650	
Office Equipment	7,500	
Accumulated Depr. - Office Equipment		
Delivery Equipment	9,500	
Accumulated Depreciation - Deliv. Eq.		
Accounts Payable		27,000
Accrued Wages		
Notes Payable		5,000
P. Phillips, Capital		59,000
P. Phillips, Drawing	1,200	
Sales		17,650
Cost of Goods Sold	12,350	
Expenses	<u>2,225</u>	
TOTALS	<u>\$108,650</u>	<u>\$108,650</u>

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*Phillips' Pharmacy
Post Closing Trial Balance
For The End of Month Two*

	DEBITS	CREDITS
Cash	\$ 8,575	\$
Accounts Receivable	12,650	
Inventories	54,650	
Office Equipment	7,500	
Accumulated Depr. - Office Equipment		100
Delivery Equipment	9,500	
Accumulated Depreciation - Deliv. Eq.		125
Accounts Payable		27,000
Accrued Wages		150
Accrued Interest		58
Notes Payable		5,000
P. Phillips, Capital		60,442
TOTALS	\$92,875	\$92,875

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Example: An entrepreneur, George Corrales, is about to lease space in a shopping center to sell men's shoes. On February 1, he deposits \$20,000 in a bank account opened in the name of his venture: Corrales Men's Shoes, Inc. His beginning balance sheet appears in Exhibit 11.6.

Corrales Men's Shoes, Inc.: Balance Sheet (February 1, 1985)

<u>Assets</u>		<u>Equities</u>	
Cash	\$20,000	Owners' equity	\$20,000

This balance sheet says the venture has assets of \$20,000 cash, with Mr. Corrales, as the sole shareholder, having a 100 percent claim against that cash. On February 2, he borrows \$10,000 from a commercial bank. His new balance sheet appears in Exhibit 11.7. This balance sheet says the venture has assets of \$30,000 cash. Now the bank has a one-third claim against total assets and the entrepreneur a two-thirds claim. On February 3, the entrepreneur buys 400 pairs of shoes from a supplier for \$10,000 cash. His new balance sheet appears in Exhibit 11.8.

Corrales Men's Shoes, Inc.: Balance Sheet (February 2, 1985)

<u>Assets</u>		<u>Equities</u>	
Cash.	\$30,000	Bank loan	\$10,000
	<u> </u>	Owners' equity	<u>20,000</u>
	<u>\$30,000</u>		<u>\$30,000</u>

Corrales Men's Shoes, Inc.: Balance Sheet (February 3, 1985)

<u>Assets</u>		<u>Equities</u>	
Cash	\$30,000	Bank loan	\$10,000
Inventory	10,000	Owners' equity	<u>20,000</u>
Total	<u>\$30,000</u>	Total	<u>\$30,000</u>

Note that the right-hand side of the balance sheet did not change between February 2 and 3. Only the left-hand side changed. The entrepreneur simply exchanged one asset--cash--for another--inventory--and received as much as he gave up. The key point here is that he really is no better off today than yesterday, because his equity of \$20,000 remains unchanged. On February 4, the entrepreneur sell 10 pairs of shoes for \$1,000 cash. His new balance appears in Exhibit 11.9.

Corrales Men's Shoes, Inc.: Balance Sheet (February 4, 1985)

<u>Assets</u>		<u>Equities</u>	
Cash	\$21,000	Bank loan	\$10,000
Inventory	<u>9,500</u>	Owners' equity	
		Common stock	\$20,000
		Retained earnings	<u>500</u>
Total	<u>\$30,500</u>	Total	<u>\$30,500</u>

Note that the entrepreneur's equity has increased by \$500, to \$20,500 because he made some profitable sales. He sold shoes that had cost him \$500 for \$1,000--a 100 percent markup--giving him a profit of \$500. His new income statement (is shown in Exhibit 11.10).

Corrales Men's Shoes, Inc.: Income Statement (for four days ending February 4, 1985)

Sales revenues	\$1,000
Cost of goods sold	<u>500</u>
Gross profit	<u>\$ 500</u>

How Income Statement Ties into Balance Sheet

<u>Balance sheet</u>		<u>Income statement</u>	
(February 4, 1985)		(for four days ending February 4, 1985)	
<u>Assets</u>			
Cash	\$21,000	Sales revenues	\$1,000
Inventory	<u>9,500</u>	Cost of goods sold	<u>500</u>
Total assets	<u>\$30,500</u>	Gross profit	<u>\$ 500</u>
<u>Equities</u>			
Bank loan	\$10,000		
Owners' equity			
Common stock	\$20,000		
Retained earnings	<u>500</u>		<u>20,500</u>
Total equities	<u>\$30,500</u>		<u>\$30,500</u>

Turning to Exhibit 11.11, note how the income statement in Exhibit 11.10 ties into the February 4 balance sheet in Exhibit 11.9. The income statement gives the details behind the changes that have taken place within the category of the balance sheet called retained earnings.

Without the income statement, the entrepreneur might never know what his sales revenues and operating expenses are. He also might never know what his profits are. For example, he paid himself a \$500 cash dividend on February 5, and his new balance appears in Exhibit 11.12. At first glance, this balance sheet suggests that the entrepreneur made no profit. As we know, his profits were \$500 on revenues of \$1,000. The net change in retained earnings is recorded as zero because he paid himself a \$500 cash dividend, as shown by his new income statement (see Exhibit 11.13).

Corrales Men's Shoes, Inc.: Balance Sheet (February 5, 1985)

<u>Assets</u>		<u>Equities</u>	
Cash	\$20,500	Bank loan	\$10,000
Inventory	<u>9,500</u>	Owners' equity	
		Common stock	\$20,000
		Retained earnings	<u>0</u> <u>20,000</u>
Total	<u>\$30,000</u>	Total	<u>\$30,000</u>

Corrales Men's Shoes, Inc.: Income Statement (for five days ending February 5, 1985)

Sales revenues	\$1,000
Cost of goods sold	<u>500</u>
Gross profit	\$ 500
Dividends	<u>500</u>
Added to retained earnings	<u>\$ 0</u>

Although the balance sheet tells the entrepreneur that his worth is \$20,000, this is true only on paper. The true worth of his venture cannot be known until he tries to sell out. His venture could be worth more or less than \$20,000, depending on what a prospective buyer is willing to pay. This is an important point, because entrepreneurs often believe that balance sheets report the real worth of their ventures. Accountants do not try to measure what a venture is worth, unless the entrepreneur wants to sell out.

Melissa's Health Food Store, Inc.

Tomorrow, Melissa Moran will open a new health food store. She plans to sell "foods the way nature made them." In preparing for the opening, she has already spent these sums of money:

\$11,000	for equipment
10,300	for inventory
700	for advertising and publicity
400	for legal and accounting services
400	for lease deposit
200	for licenses and permits

The company's bank balance is \$2,000.

Question Prepare a beginning balance sheet, assuming that Mrs. Moran and her co-investors bought \$25,000 worth of common stock.

A month later, Mrs. Moran took pride in her performance. Her revenues reached \$8,000 and her expenses totaled \$7,600. An expense breakdown follows:

\$5,400	for cost of health foods sold
1,200	for salaries (including Mrs. Moran's)
400	for rent
200	for advertising
200	for utilities
200	for other expenses

Question Prepare an income statement for Mrs. Moran's first month of business.

Financial Record Importance

- A. **Improve Performance and Efficiency**
 - 1. Monitor progress or regression
 - 2. Anticipate or pinpoint problems
 - 3. Solve problems effectively

- B. **Convince Potential Investors or Partners**
 - Bankers
 - Joint Venture Partners
 - Stockholders or Bondholders
 - Import/Export Partners

 - 1. Show past and current performance
 - 2. Demonstrate current capabilities and future potential

- C. **Substantiate Correct Tax Payments for Increasingly Persistent and Ruthless Tax Police**

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***Transactions During First
Month of Operations***

- A. Deposited \$58,000 into a checking account in the name of the business, Phillips' Pharmacy.
- B. Purchased merchandise for resale for \$25,000 and paid cash.
- C. Purchased merchandise for resale for \$10,000, by asking to be billed for the purchase by the vendor.
- D. Sold on account merchandise costing \$10,000 to a hospital for \$15,000.
- E. Paid miscellaneous expenses of \$4,000 during the first month of operations to get the store opened and running.
- F. In this example, the collection of \$8,000 from the hospital will be ignored. Later, this difference will be analyzed in terms of its impact, or lack of impact, on net income and changes in the cash balance.

Other Instructions

- G. Close temporary accounts to the income summary account.
- H. Transfer profit or loss to capital account.

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Ledger Accounts for Phillips' Pharmacy

BALANCE SHEET ACCOUNTS

TEMPORARY ACCOUNTS

CASH

ACCOUNTS PAYABLE

SALES

ACCOUNTS
RECEIVABLE

NOTES PAYABLE

COST OF SALES

INVENTORIES

P. PHILLIPS, CAP.

EXPENSES

F. PHILLIPS, DRAWING INCOME SUMMARY

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Accounting convention requires that certain rules be followed when recording transactions in ledger or "T" accounts:

Asset Rule: Increases are recorded on the left (debit) side of the accounts and decreases are recorded on the right (credit) side.

Liability Rule: Increases are recorded on the right (credit) side of the accounts and decreases are recorded on the left (debit) side.

Equity Rule: Increases are recorded on the right (credit) side and decreases in equity accounts are recorded on the left (debit) side.

Revenue Rule: Increases are recorded on the right (credit) side and decreases are recorded on the left (debit) side.

Expenses: Increases are recorded on the left (debit) side and decreases are recorded on the right (credit) side. The same is true for the owner's drawing account.

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Sources

1. Increases in a liability or capital account such as:
 - a. An increase in accounts payable
 - b. An increase in accrued wages or accrued taxes
 - c. An increase in notes payable
 - d. An increase in P. Phillips, Capital
2. Decreases in asset accounts such as:
 - a. A decrease in inventories
 - b. A decrease in accounts receivable
 - c. A decrease in fixed assets such as land or buildings

Uses

1. Decreases in claims against assets
 - a. A decrease in accounts payable
 - b. A decrease in accrued wages or accrued taxes
 - c. A decrease in notes payable
 - d. A decrease in P. Phillips, Capital
2. Increases in asset accounts
 - a. An increase in inventories
 - b. An increase in accounts receivable
 - c. An increase in fixed assets such as land or buildings

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Transactions During The Second Month of Operations

- A. Paid part-time clerks \$650 for wages during the month.
- B. Paid for the \$10,000 of merchandise purchased on account in the first month of operations.
- C. Purchased a micro-computer and related software for \$7,500 to be used for accounting records, payroll records, inventory management, etc. Paid \$2,500 cash and borrowed \$5,000 from the local bank on a 120 day note at 14 percent interest. The note is dated the first of the month.
- D. Purchased a delivery vehicle for \$9,500 cash on the first of the month.
- E. Cash sales during the month totaled \$11,500 and credit sales totaled \$6,150. The total cost of goods sold was \$12,350.
- F. Merchandise purchased during the month totaled \$42,000 of which \$15,000 was paid for and \$27,000 was on account.
- G. Paid monthly rent of \$675, advertising of \$500, utilities \$250, and other miscellaneous expenses of \$150.
- H. Pete Phillips withdrew \$1,200 from the business for personal living expenses.
- I. Collected \$8,500 due on account from last month's credit sales to the local hospital.

Other Instructions

- J. Enter the increases and decreases into the "T" accounts.
- K. Prepare a trial balance.
- L. Prepare the necessary adjusting entries for interest expense and depreciation expense.
- M. Prepare an adjusted trial balance.
- N. Prepare closing entries.
- O. Prepare a balance sheet, income statement, and reconcile the difference between the change in the cash balance and the accounting profits.

BALANCE SHEET ACCOUNTS		TEMPORARY ACCOUNTS	
<u>CASH</u>	<u>ACCOUNTS PAYABLE</u>	<u>SALES</u>	
<u>ACCTS. RECEIVABLE</u>	<u>ACCRUED WAGES</u>	<u>COST OF SALES</u>	
<u>INVENTORIES</u>	<u>ACCRUED INTEREST</u>	<u>EXPENSES</u>	
<u>OFFICE EQUIP.</u>	<u>NOTES PAYABLE</u>	<u>INCOME SUMMARY</u>	
<u>ACCUM. DEPT.-OFFICE</u>	<u>P. PHILLIPS, CAPITAL</u>		
<u>DELIVERY EQUIP.</u>	<u>P. PHILLIPS, DRAWING</u>		
<u>ACCUM. DEPR.-DELIV.</u>			

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Example: An entrepreneur, George Corrales, is about to lease space in a shopping center to sell men's shoes. On February 1, he deposits \$20,000 in a bank account opened in the name of his venture: Corrales Men's Shoes, Inc. His beginning balance sheet appears in Exhibit 11.6.

Corrales Men's Shoes, Inc.: Balance Sheet (February 1, 1985)

<u>Assets</u>		<u>Equities</u>	
Cash	\$20,000	Owners' equity	\$20,000

This balance sheet says the venture has assets of \$20,000 cash, with Mr. Corrales, as the sole shareholder, having a 100 percent claim against that cash. On February 2, he borrows \$10,000 from a commercial bank. His new balance sheet appears in Exhibit 11.7. This balance sheet says the venture has assets of \$30,000 cash. Now the bank has a one-third claim against total assets and the entrepreneur a two-thirds claim. On February 3, the entrepreneur buys 400 pairs of shoes from a supplier for \$10,000 cash. His new balance sheet appears in Exhibit 11.8.

Corrales Men's Shoes, Inc.: Balance Sheet (February 2, 1985)

<u>Assets</u>		<u>Equities</u>	
Cash	\$30,000	Bank loan	\$10,000
		Owners' equity	<u>20,000</u>
	<u>\$30,000</u>		<u>\$30,000</u>

Corrales Men's Shoes, Inc.: Balance Sheet (February 3, 1985)

<u>Assets</u>		<u>Equities</u>	
Cash	\$30,000	Bank loan	\$10,000
Inventory	10,000	Owners' equity	<u>20,000</u>
Total	<u>\$30,000</u>	Total	<u>\$30,000</u>

Note that the right-hand side of the balance sheet did not change between February 2 and 3. Only the left-hand side changed. The entrepreneur simply exchanged one asset--cash--for another--inventory--and received as much as he gave up. The key point here is that he really is no better off today than yesterday, because his equity of \$20,000 remains unchanged. On February 4, the entrepreneur sell 10 pairs of shoes for \$1,000 cash. His new balance appears in Exhibit 11.9.

Corrales Men's Shoes, Inc.: Balance Sheet (February 4, 1985)

<u>Assets</u>		<u>Equities</u>	
Cash	\$21,000	Bank loan	\$10,000
Inventory	<u>9,500</u>	Owners' equity	
		Common stock	\$20,000
		Retained earnings	<u>500</u>
Total	<u>\$30,500</u>	Total	<u>\$30,500</u>

Note that the entrepreneur's equity has increased by \$500, to \$20,500 because he made some profitable sales. He sold shoes that had cost him \$500 for \$1,000--a 100 percent markup--giving him a profit of \$500. His new income statement (is shown in Exhibit 11.10).

Corrales Men's Shoes, Inc.: Income Statement (for four days ending February 4, 1985)

Sales revenues	\$1,000
Cost of goods sold	<u>500</u>
Gross profit	<u>\$ 500</u>

How Income Statement Ties into Balance Sheet

Balance sheet

(February 4, 1985)

Assets

Cash	\$21,000
Inventory	<u>9,500</u>
Total assets	<u>\$30,500</u>

Equities

Bank loan	\$10,000
Owners' equity	
Common stock	\$20,000
Retained earnings	<u>500</u>
Total equities	<u>\$30,500</u>

Income statement

(for four days ending February 4, 1985)

Sales revenues	\$1,000
Cost of goods sold	<u>500</u>
Gross profit	<u>\$ 500</u>

Turning to Exhibit 11.11, note how the income statement in Exhibit 11.10 ties into the February 4 balance sheet in Exhibit 11.9. The income statement gives the details behind the changes that have taken place within the category of the balance sheet called retained earnings.

Without the income statement, the entrepreneur might never know what his sales revenues and operating expenses are. He also might never know what his profits are. For example, he paid himself a \$500 cash dividend on February 5, and his new balance appears in Exhibit 11.12. At first glance, this balance sheet suggests that the entrepreneur made no profit. As we know, his profits were \$500 on revenues of \$1,000. The net change in retained earnings is recorded as zero because he paid himself a \$500 cash dividend, as shown by his new income statement (see Exhibit 11.13).

Corrales Men's Shoes, Inc.: Balance Sheet (February 5, 1985)

<u>Assets</u>		<u>Equities</u>	
Cash	\$20,500	Bank loan	\$10,000
Inventory	<u>9,500</u>	Owners' equity	
		Common stock	\$20,000
		Retained earnings	<u>0</u> <u>20,000</u>
Total	<u>\$30,000</u>	Total	<u>\$30,000</u>

Corrales Men's Shoes, Inc.: Income Statement (for five days ending February 5, 1985)

Sales revenues	\$1,000
Cost of goods sold	<u>500</u>
Gross profit	\$ 500
Dividends	<u>500</u>
Added to retained earnings	<u>\$ 0</u>

Although the balance sheet tells the entrepreneur that his worth is \$20,000, this is true only on paper. The true worth of his venture cannot be known until he tries to sell out. His venture could be worth more or less than \$20,000, depending on what a prospective buyer is willing to pay. This is an important point, because entrepreneurs often believe that balance sheets report the real worth of their ventures. Accountants do not try to measure what a venture is worth, unless the entrepreneur wants to sell out.

Melissa's Health Food Store, Inc.

Tomorrow, Melissa Moran will open a new health food store. She plans to sell "foods the way nature made them." In preparing for the opening, she has already spent these sums of money:

\$11,000	for equipment
10,300	for inventory
700	for advertising and publicity
400	for legal and accounting services
400	for lease deposit
200	for licenses and permits

The company's bank balance is \$2,000.

Question Prepare a beginning balance sheet, assuming that Mrs. Moran and her co-investors bought \$25,000 worth of common stock.

A month later, Mrs. Moran took pride in her performance. Her revenues reached \$8,000 and her expenses totaled \$7,600. An expense breakdown follows:

\$5,400	for cost of health foods sold
1,200	for salaries (including Mrs. Moran's)
400	for rent
200	for advertising
200	for utilities
200	for other expenses

Question Prepare an income statement for Mrs. Moran's first month of business.

BUDGETS AND CASH FLOW MANAGEMENT

UNIT 2

Title: BUDGETS AND CASH FLOW MANAGEMENT

Purpose: This unit should enable the participants to determine and forecast the cash needs of their business.

Objective: To instruct participants on the preparation and use of budgets and techniques for good cash flow management

Materials:

Transparencies:

Transparency 1-7	"How to Beat Cash Flow Woe"
Transparency 8	Income Statement and Cash Budget Relationship
Transparency 9	The Cost of Uncollected Accounts
Transparency 10	Business Credit Terms
Transparency 11	How Credit Customers May Benefit from Cash Discounts
Transparency 12	Aging Schedule (of Accounts Receivable)
Transparency 13	Charlane's Fashions
Transparency 14	What Purchase Savings May Mean to the Entrepreneur
Transparency 15	Purchasing Guidelines
Transparency 16-17	Inventory Management
Transparency 18	Inventory Costs
Transparency 19	The True Cost of Inventory
Transparency 20	Samantha Teen Shoppe, Inc.
Transparency 21	Phillips' Pharmacy History
Transparency 22	Phillips' Pharmacy—19X4 Monthly Cash Expenditure Budget
Transparency 23	Phillips' Pharmacy—19X4 Monthly Operating Expense Budget
Transparency 24	Sales Targets
Transparency 25	Three Steps
Transparency 26	Phillips' Pharmacy—Monthly Inventory Plan
Transparency 27	Credit Sales
Transparency 28	Phillips' Pharmacy—Collections History
Transparency 29	January—Estimated Cash to Be Received
Transparency 30	February—Estimated Cash to Be Received March—Estimated Cash to Be Received
Transparency 31	Phillips' Pharmacy—19X4 Estimated Monthly Cash Sales
Transparency 32	Phillips' Pharmacy—Cash Budget for Calendar Year 19X4
Transparency 33	Phillips' Pharmacy—Extended Cash Budget to Show Borrowings for Calendar Year 19X4
Transparency 34	Phillips' Pharmacy—Balance Sheets
Transparency 35	Phillips' Pharmacy—Income Statements for Months of January and February, 19X4

Handouts:

Handout 1A-B	Financial Statements—The Cash Budget
Handout 2	The Cost of Uncollected Accounts
Handout 3	Business Credit Terms
Handout 4	How Credit Customers May Benefit from Cash Discounts
Handout 5A-B-C	Aging Schedule (of Accounts Receivable)
Handout 6A-B	Charlane's Fashions, Inc.
Handout 7	Bingham Electrical Parts, Inc.
Handout 8	Inventory Management
Handout 9	Phillips' Pharmacy History
Handout 10	Phillips' Pharmacy—19X4 Monthly Operating Expense Budget
Handout 11	Phillips' Pharmacy—19X4 Monthly Cash Expenditure Budget
Handout 12	Three Steps
Handout 13	Phillips' Pharmacy—Monthly Inventory Plan
Handout 14	Phillips' Pharmacy—19X4 Monthly Operating Expense Budget
Handout 15	Phillips' Pharmacy—Collections History
Handout 16	January—Estimated Cash to Be Received This Month from Credit Sales in Past Months
Handout 17	February—Estimated Cash to Be Received
Handout 18	March—Estimated Cash to Be Received
Handout 19	Phillips' Pharmacy—19X4 Estimated Monthly Cash Sales
Handout 20	Phillips' Pharmacy—Cash Budget for Calendar Year 19X4
	Phillips' Pharmacy—Extended Cash Budget to Show Borrowings for Calendar Year 19X4
	Phillips' Pharmacy—Balance Sheets
	Phillips' Pharmacy—Income Statements for Months of January and February, 19X4
	Phillips' Pharmacy—Statement of Cash Flows for Months Ending January and February 19X4

Class Exercises:

Handout 5A-C	Charlane's Fashions, Inc.
Handout 6A-B	Bingham Electrical Parts, Inc.
Handout 11-20	Inventory Management
	This is a comprehensive exercise for class participants about the Phillips' Pharmacy (Please see titles above.).

Product:

- A forecast of business cash needs
- A business cash inflows estimate
- A cash budget
- A statement of cash flows
- A presentation of cash flow deficits and surpluses

Assignment:

Develop a forecast of business cash needs
Forecast business cash inflows
Construct a cash budget
Compose a statement of cash flows
Anticipate cash flow deficits and surpluses

Notes to Instructor:

If possible, participants should be advised to bring a hand calculator to class with them. A pencil or pen and paper is sufficient, but a calculator will save time.

This is probably the most important set of concepts for any business person. Cash Management is the leading cause of problems in United States businesses especially small businesses.

Phillips' Pharmacy provides comprehensive examples that continue throughout several of the finance units. The Phillips' Pharmacy examples show actual account balances and financial statements. Other shorter, simpler examples have been provided as well. Either set of examples can be used; it is not necessary to incorporate both into this unit. Although Phillip's Pharmacy is a retail business, the concepts and techniques presented apply to service businesses as well.

The instructor should be certain to demonstrate how the balance sheet and income statement can be transformed into cash flow statements.

Interpretation of cash flow statement should be shown. The instructor will probably want to contrast the balance sheet and income statement accounts with the cash flow statement. Profit shown on the income statement will probably not equal cash the entrepreneur actually has. Cash flow statements can show the entrepreneur how much cash is available.

The cash flow statement, balance sheet and income statement are tools to help the small business person develop an enterprise management strategy.

The aspects of businesses that are most likely to be the source of cash management problems should be stressed to the participants. Typically, there are problems with:

Accounts Receivable,
Purchasing,
Credit Sales Terms, and
Inventory.

The monthly cash excess or deficit topic leads to and is covered in the unit, "Financial Planning and Banks and Other Sources of Funds." This is the reason that so little time appears in this unit for that topic.

Instructors should adjust times to meet the needs of their participants.

Instructors should provide the summary remarks and preview the next unit.

Estimated time:

This section will probably require one and one-half days, i.e., 10 to 12 hours.

Overview of typical sources of cash management problems	30 minutes
Mathematical examples of savings from effective cash management	60 minutes
Mathematical examples of costs from ineffective cash management	60 minutes
Class Break	30 minutes
Monthly cash expenditure budget	30 minutes
Monthly inventory plan	45 minutes
Collections of Accounts Receivable	30 minutes
Lunch break	90 minutes
Estimated cash to be received from prior credit sales	60 minutes
Estimated monthly cash sales	30 minutes
Annual cash budget	45 minutes
Monthly cash excess or deficit	10 minutes
Estimated balance sheet	20 minutes
Estimated income statement	20 minutes
Estimated cash flow statement	80 minutes
Class Break	30 minutes

¹ Ingrisano, John R. *How to beat Cash Flow Woe*. Madison Business, December 1988. © Madison Business. Translated and used with permission.

² Siropolis, N. C. *Small Business Management*, 4th ed., Chapter 15, p. 464. Houghton Mifflin Company. © Houghton Mifflin Company. Translated and used with permission.

³ Wingenter, Thomas H. Part 3 - "Financial Budgeting." *Financial Management for Small Business*. Small Business Development Center, University of Wisconsin, p. 45. © The University of Wisconsin System. Translated and used with permission.

Content	Process
<p>Introduction</p> <p>Poor cash flow management is the leading cause of problems for businesses. For this reason learning good cash flow management practices is very important. Even the most profitable firm can find itself short of cash at some time during the year.</p> <p>What are some of the typical cash flow management problems for businesses? What are some solutions to these cash flow management problems?</p> <ol style="list-style-type: none"> 1. Find sources of credit before necessary 2. Build cash reserves 3. Review monthly cash status 4. Analyze expense to reduce overhead 5. Institute same-day billing 6. Institute same-day order processing 7. Begin same-day deposits 8. Pay bills just before due 9. Verify billing information 10. Keep inventories low 11. Bill large projects frequently 12. Ask for deposits 13. Pay sales commissions when payment is received 14. Negotiate price with suppliers' 	<p>Display TP 1-7 to give an overview of this unit. Discuss each of the major points with the participants.</p> <p>Encourage them to discuss how potential cash flow problems apply to them and to their businesses.</p> <p>Encourage participants to share experiences they or their acquaintances have had with cash shortages.</p> <p>Emphasis this: Some of these points may not apply to Polish business that only trade domestically; however, if Polish businesses have any foreign trade or partners, they need to think of all of the possibilities.</p>

Content	Process
<p>15. Negotiate terms and credit with suppliers</p> <p>16. Beware "shaky" customers</p> <p>17. Put due dates on all bills</p> <p>18. Include late charges schedule on bills</p> <p>19. Follow up with late payers</p> <p>20. Send bills separate from packing slips¹</p>	
<p>Regardless of whether you wish to learn how to do actual cash flow calculations, it is important to understand the relationship between the income statement and the cash budget. Seldom is there a direct relationship.</p>	<p>Distribute HO 1A and 1B to illustrate cash and profit relationship.</p>
<p>Good cash flow management can save money or actually make money for a business. Poor cash flow management can cost a business money. Some of the common parts of businesses that can provide improved cash flow management opportunities are:</p>	<p>Demonstrate this point with TP 8. Discuss this transparency; it illustrates an important point--a company can be "profitable" on the books and still be "broke."</p>
<ol style="list-style-type: none"> 1. Uncollected accounts, 2. Business credit terms, and 3. Curbing overly optimistic expansion plans. 	<p>Distribute HO 2. Display TP 9 and discuss the potential cash saving or loss.</p> <p>Show TP 12 and distribute HO 4. The Aging Schedule in TP 12 and HO 4 shows a common technique for improving cash management.</p>
<p>Charlane's fashion² business shows how overly ambitious plans can cause severe cash problems, even bankruptcy for a business.</p>	<p>Distribute HO 3 and HO 4. Display TP 10 and TP 11. Discuss the potential cash saving shown on TP 11.</p>
	<p>Display TP 13. Distribute HO 5A, 5B and 5C. 5A, 5B and part of 5C are the Charlane's Fashions, Inc.² case. It makes</p>

Content	Process
<p>4. Prompt collections of accounts receivable</p> <p>5. Careful purchases.</p> <p>6. Inventory Management</p> <p>In this first transparency you see a list of good advice for inventory management. This is not an easy task because a balance must be found between satisfying customers needs and not over burdening the entrepreneur.</p> <p>Please notice how dramatic the savings can be with good inventory management.</p> <p>Some of the costs associated with this inventory are not obvious. Here is a partial list of inventory costs.</p> <p>Here is a short case that shows how efficient inventory use can be a tremendous advantage to any company. This case, Samantha Teen Shop², is about a clothing store. Let us do a few simple calculations now. Contrast the company if it sells its inventory three times per year versus if the inventory is sold four times per year, i.e., an inventory turnover of 3 versus 4 while revenues remain the same.</p> <p>It is impossible to overestimate the importance of good cash flow management to a business. Remember that there are many ways that an entrepreneur can make the business better or worse with these ideas and techniques.</p>	<p>for good class discussion about overly ambitious entrepreneurs.</p> <p>Ask participants if they know anyone who has ever been in a similar predicament.</p> <p>Bingham Electric² on HO 5C can show a business that needs to collect accounts receivable more rapidly. It also can illustrate the potential advantage of a published set of industrial standards.</p> <p>Stimulate discussion with TP 14. Discuss the smart purchasing guidelines that appear on TP 15.</p> <p>Inventory management involves TP 16, 17, 18, and 19, and HO 6A and 6B.</p> <p>Discuss TP 16.</p> <p>Demonstrate, mathematically, the large savings possible with TP 17. HO 6A and 6B corresponds to TP 17.</p> <p>Display TP 18 and invite participants to share their experiences with inventory costs. Also encourage them to consider the inventory costs in a variety of businesses such as green grocer business versus a business that sells coal.</p> <p>Show TP 20 and perform the calculations. The instructor may invite a participant to show the calculation. The primary point is that Samantha can save 11,500 by selecting inventory that sells more rapidly. In other words, with careful inventory</p>

Content	Process
<p>Now we will begin to work on a integrated example in a real small business, Phillips' Pharmacy³, to show how to:</p> <ol style="list-style-type: none"> 1. Forecast cash needs 2. Forecasting cash inflows (cash sales and collections) 3. Construct a cash budget, and 4. Compose a statement of cash flows <p>The most powerful financial management tool for a small firm, the cash flow statement.</p> <p>First let me introduce you to Phillips' Pharmacy in a meaningful way. Pete Phillips has begun his business relying on some of the same sources of funds and ways of forecasting that you have. Please read about him and his pharmacy now.</p> <p>A. Developing a Forecast of Business Cash Needs</p> <p>Phillips' Pharmacy has created a basic financial plan that can be converted to a cash flow plan. HO 8 is a monthly operating expense budget for Phillips' Pharmacy. The monthly operating expense budget represents "accounting flows" which may or may not represent cash flows. HO 9A is the monthly cash expenditures budget for Phillips' Pharmacy.</p> <p>There is a difference between cash flows and accounting flows like the insurance premium which is paid annually but for accounting purposes an amount equal to 1/12th of the total is expensed to each month of the year. In a similar fashion, the operating budget expenses 359 each</p>	<p>selection, Samantha requires 11,500 less capital to operate the business.</p> <p>At this point the instructor should have persuaded the participants that careful cash flow management is critical to the best business performance.</p> <p>Show TP 21. Distribute HO 7. This will provide a clear, brief history for the Phillips' Pharmacy.</p> <p>Show TP 22 and 23 as you explain this section. These transparencies show the dollar amount and make the objectives and procedures more clear.</p> <p>Distribute HO 8 and 9A so that each participant has a copy to study. They also should be encouraged to annotate the handouts so that they can be used as resources at a later time.</p>

Content	Process
<p>month for interest while the cash budget takes into account the total amount paid for both principal and interest. Depreciation and bad debts are not included in the cash expense budget. Neither of these is a cash outlay. The difference in the operating budget total expenses and the cash expenditure budget total results from the different methods of handling depreciation, bad debts and the desired profits in the two statements.</p> <p>As you can see the operating budget projects total expenses of 143,540 while the cash expenditure budget projects a total of only 135,720 for the year. The 7,820 difference results from different methods of handling depreciation, bad debts and the desired profits in the two statements.</p> <p>Now we will follow the steps to complete the forecast of Phillips' Pharmacy cash outflows. As you can see from TP 23, Pete Phillips has estimated (from his historic records) all expenditures except inventory. We will calculate the cash required for inventory purchases.</p> <p>To make this calculation there are several step.</p> <ol style="list-style-type: none"> 1. Project annual sales 2. Determine the amount of inventory necessary to made those sales in an efficient way 3. Compute the desired ending inventory 4. Calculate the planned purchases. <p>With these four steps a monthly inventory plan can be constructed.</p>	<p>Introduce the first step of cash budgeting for a business, the cash outflows.</p> <p>Show TP 23.</p> <p>Display TP 24, Monthly Sales Targets.</p>

Content	Process
<p>Start with the annual sales projects Pete has made. Of course there must be enough inventory on hand so that the pharmacy does not run out of merchandise, and simultaneously too much inventory on hand is a waste of resources.</p> <p>Pete has determined that he may be ineffective in managing his inventory. We will learn how to do this type of evaluation in Unit 3. Pete, however, understands his inventory flow and doesn't believe that he can make a large inventory management improvement to an acceptable level all in this next year. After considering all factors involved, Pete has set appropriate targets for his inventory management and will perform the necessary calculations using them. These calculation are last three steps necessary before completing the forecast of cash outflows.</p> <p>Step one reveals the desired amount of inventory that Pete needs for the pharmacy at any moment.</p> <p>Step two is the computation that determines the desired ending inventory level for the pharmacy.</p> <p>These two numbers (from steps one and two) can then be used to find how much additional inventory Pete must buy during the next year for his pharmacy. To manage the pharmacy efficiently, Pete must transform the annual inventory numbers he has derived into a monthly inventory plan.</p> <p>To show cash outflow for each month we take our prior calculations and complete this type of a table. Columns 1, 2, and 3 are all numbers that we have determined before. Column 1 represents the monthly sales that were shown earlier.</p>	<p>Reassure the participants that this technique is included in Unit 3.</p> <p>Display TP 25, and distribute HO 9B, that illustrate the calculations.</p> <p>Display TP 26 and distribute HO 10.</p> <p>You may wish to show TP 24 and 25, again to remind the participant of the source of the numbers.</p> <p>Now show TP 26 again.</p>

Content	Process
<p>Column 2 shows the cost of sales which are 70 percent of sales, i.e., Column 1 multiplied by 0.70 equals Column 2.</p>	<p>Point out the different columns as you discuss the relationship between them.</p>
<p>Column 3 reflects the inventory reduction that has planned to make his inventory management more efficient. The same amount is listed for each month.</p>	<p>Point to the two month lag that is show between Columns 4 and 5 on TP 27.</p>
<p>Column 4 is the monthly cost of sales after the planned inventory reduction has been incorporated. In other words, Column 4 is Column 2 minus Column 3.</p>	<p>Give participants HO 11 so that they can refer to it later.</p>
<p>Column 5 requires a little more thought. Merchandise is usually paid for one month after it has been received and it is received one month after it has been ordered! Clearly it is very important for Pete to forecast his needs well into the future. Pete must pay this month for inventory that he ordered two months ago and received one month ago.</p>	
<p>Now that Pete has finished the inventory payments calculations, he has a complete picture of his cash outflows. The next step toward completing the pharmacy's cash budget is to calculate the cash inflows.</p>	
<p>B. Forecasting Business Cash Inflows</p>	
<p>If all a business' sales are all cash sales, cash inflows are equal to sales. No further calculations are necessary. This is not the situation at the pharmacy.</p>	
<p>Pete Phillips sells some of his merchandise for cash and some of it on credit. To determine the total cash inflows, Pete Phillips should make three steps. He must</p>	<p>Display TP 27. Suggest to participants that they could follow a similar procedure in their own businesses.</p>
<p>1. Forecast his credit sales</p>	

Content	Process
<p>2. Estimate when the amounts due will be collected, and</p> <p>3. Total the payments from previous credit sales with cash sales.</p> <p>Here is the first step to determine cash inflows. Based on year X3 he has made an estimate of credit sales for X4. In Column 1 appear the sales made on credit that Phillips' Pharmacy had each month of year X3. In Column 2 is the total sales (cash and credit) that Phillips' Pharmacy had each month of year X3. Column 3 shows the percentage that results when the credit sales in Column 1 are divided by the total sales in Column 2. Column 4 are numbers you have seen before. They are the monthly sales estimate that Pete has forecast for the Phillips' Pharmacy. When Column 3 and Column 4 are multiplied together, the result is Column 5, the estimated monthly credit sales for Phillips' Pharmacy in year X4.</p> <p>Now cash sales have been estimated and credit sales have been estimated. The second step to determine cash inflows is to forecast when the money for the credit sales will be collected.</p> <p>A business should use an aging schedule to estimate when the amounts due from credit sales will be collected. An aging schedule shows an estimate of what percentage of credit sales will be paid within 30 days, between 31 and 60 days, and between 61 and 90 days. More categories can be added if necessary. An estimate like this is based on thing such as experience with collections, and reasonable expectation in that kind of business.</p> <p>For Pete Phillips to estimate each month's collections of cash from past credit sales, the aging schedule is applied to each</p>	<p>Point out each column as you discuss the calculation.</p> <p>Display TP 28 and explain what an aging schedule is, and the origin of the numbers on the schedule (percentage of accounts collected expected each month).</p> <p>Distribute HO 12. This can be used as a guideline in their own businesses.</p>

Content	Process
<p>month's credit sales as is shown on these transparencies. For example, in the month of January Pete Phillips will collect the cash from 26 percent of the credit sales that were made in October, 40 percent of the credit sales that were made in November, and 30 of the credit sales that were made in December. To follow the process further, you can see that for February, 26 percent of November, 40 percent of December, 30 percent of January credit sales were collected.</p>	<p>Explain TP 29 and TP 30. Be certain that everyone understands how to arrive at the numbers.</p>
<p>After estimates of cash collected from credit sales have been completed for each month of year X4, there is only one more step to calculating total monthly cash inflows. Cash collections from past credit sales can be combined with cash sales to show total cash inflows for each month.</p>	<p>Give each person a copy of HO 13 and HO 14 so that they can study the calculations later.</p>
<p>The final step to estimate cash inflows is to combine the payments from previous credit sales with cash sales. That simple addition will reveal cash inflows for each month. Now a complete cash budget for Phillips' Pharmacy can be forecast for year X4.</p>	<p>Distribute HO 15 and clarify the amount of cash sales that are forecasted for each month of year X4 with TP 31.</p>
<p>C. Constructing A Cash Budget</p>	<p>Display TP 32 and point out each row (cash sales, collections on accounts receivable, etc.) as you introduce these ideas to the participants.</p>
<p>Pete Phillips has now estimated cash sales, collections on account receivable (past credit sales), cash expenditures other than inventory payments, and inventory payments. With these the cash budget for year X4 can be shown.</p>	<p>Distribute HO 16 for study. It is probably a good idea to pause here as be certain that everyone realizes that in some months of X4 Pete Phillips expects to have an excess of cash while in other</p>
<p>As you see details of each month's inflows and outflows are shown here and any excess or deficit in cash for each month has been calculated. Please notice that in some months of X4 Pete Phillips expects to have an excess of cash while in other months of the same year, he expects to</p>	

Content	Process
<p>have a deficit. This is a normal occurrence for any business. Many of you may have experienced these fluctuations in the amount of cash that you have <i>versus</i> the amount of cash that you need.</p> <p>Remember that our purpose here is to learn how to anticipate problems, such as a cash deficit, so that we can prepare to solve the problems and avoid an emergency. Yes, that is correct. We are working here to learn how to anticipate and therefore frequently avoid difficulties.</p> <p>If we anticipate our deficits and surpluses of cash plans can be made to borrow when necessary and lend or reinvest when possible. Business people who perform these calculations are usually considered wise and far-sighted. These types of forecasts and calculations are frequently expected as part of a good business plan or as part of a worthy loan proposal at a bank or other lending institution.</p>	<p>months of the same year, he expects to have a deficit.</p> <p>Show TP 33 and distribute HO 17.</p>
<p>D. The Statement of Cash Flows</p> <p>A statement of cash flows is a formal document prepared by many companies on a monthly or annual basis just as they prepare their balance sheet and income statement.</p> <p>The purpose of the statement of cash flows is to highlight the major activities that have provide cash and that have used cash during a period. It also shows the resulting effect on the overall cash balance of those major activities.</p> <p>Managers, investors, and creditors may use a statement of cash flows to:</p>	<p>Display and discuss each of the three basis financial statements that have been prepared for Phillips' Pharmacy with TP 34, 35, and 36.</p> <p>Distribute HO 18, 19, and 20 so that each participant will have a copy to examine now or at a later time.</p>

Content	Process
<ol style="list-style-type: none"> 1. determine the amount of cash provided by a business during a period of time 2. learn of the business' ability to meet its debts or provide money for its owners 3. find how much the owners have reinvested into their business 4. calculate the amount of financing required to expand the business, and 5. to gauge the business' ability to continue to make money. 	
<p>The statement of cash flows classifies cash receipts and cash disbursements as operating, investing, and financing cash flows. Both inflows and outflows are included within each category. Operating activities include the cash effects of transactions result in net income. Investing activities include any transactions that involve fixed assets. Financing activities include any transaction involving borrowing (except interest payments), or owners of a business.</p>	<p>Demonstrate these facts with TP 36 and HO 20.</p>
<p>E. The Statement of Cash Flows as A Planning Tool</p>	
<p>Of course we have seen that entrepreneurs can use a cash flow statement to anticipate and avoid cash shortages, and also to anticipate and exploit opportunities to invest. This is the first use of the statement of cash flows. However, there are other uses.</p>	<p>Discuss the utility of a statement of cash flows for an entrepreneur with the participants.</p>
<ol style="list-style-type: none"> 1. Cash disbursements to owners can be coordinated and harmonized with the other actions of the business so that 	

Content	Process
<p>owners do not accidentally and unnecessarily harm their own business.</p> <ol style="list-style-type: none"><li>2. Financing plans can be well in advance to develop new products, to add to plant and equipment or to acquire another business.<li>3. Ways may be found to strengthen a weak cash position to make the business more credit worthy.<li>4. The feasibility or implementation of plans can be checked before commitments are made that could prove to be detrimental.	

HOW TO BEAT CASH FLOW WOE

*By the time a cash flow
crisis strikes, it's often
too late to do much
more than grit your
teeth and hope you
survive.*

Ingrisano, John R. How to beat Cash Flow Woe. Madison Business, December 1988. © Madison Business. Translated and used with permission.

*Most companies get into
a cash flow crunch because
they're so busy doing what
they do best--producing
and selling a product or
providing a service--that
they overlook the
importance of cash
management.*

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The subject of cash flow is boring, until the flow dries up. Then the problem can become critical, fast.

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"Steps Toward Good Cash Flow"

1. Establish Credit before needed
2. Build Cash Reserve
3. Review Monthly Cash Status (Past 6 months)
4. Analyze Expenses to Reduce Overhead
5. Institute Same-day Billing

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6. Institute Same-day Order Processing
7. Begin Same-day Deposits
8. Pay Bills just before due
9. Verify billing information
10. Keep inventories low

Ingrisano, John R. How to beat Cash Flow Woe. *Madison Business*, December 1988. © *Madison Business*.
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11. Bill big projects frequently
12. Ask for deposits
13. Pay sales commissions when Payment is received
14. Negotiate price with suppliers
15. Negotiate Terms and Credit with Suppliers

Ingrisano, John R. How to beat Cash Flow Woe. Madison Business, December 1988. © Madison Business. Translated and used with permission.

16. Beware "Shaky" customers
17. Put due dates on all bills
18. Include Late Charges Schedule on bills
19. Follow up with Late Payers
20. Send bills separate from packing slip

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Income Statements

	<u>Actual January</u>	<u>Projected February</u>
Sales revenues	\$20,000	\$32,000
Expenses	<u>15,000</u>	<u>24,000</u>
Profits	<u>\$ 5,000</u>	<u>\$ 8,000</u>

Cash Budget

	<u>January</u>	<u>February</u>	<u>March</u>
Sales revenues	\$20,000	\$32,000	\$40,000
Cash inflows			
from sales	0	20,000	32,000
Cash outflows			
for inventory	<u>24,000</u>	<u>30,000</u>	<u>30,000</u>
Cash gain or loss	(\$24,000)	(\$10,000)	\$ 2,000
Beginning cash	<u>24,000</u>	<u>0</u>	(\$10,000)
Ending cash	<u>\$ 0</u>	<u>(\$10,000)</u>	<u>(\$ 8,000)</u>

Siropolis, N. C. Small Business Management, 4th ed., Chapter 11, 1986, p. 333. Houghton Mifflin Company.
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The Cost of Uncollected Accounts

If the ratio of before-tax profits to sales is...	...then, for every \$1,000 of uncollected accounts, additional sales in these amounts would be needed to recover the lost profit
20%	\$ 5,000
15%	6,700
10%	10,000
5%	20,000
2%	50,000

Siropolis, N. C. Small Business Management, 4th ed., Chapter 15, p. 457. Houghton Mifflin Company.
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Business Credit Terms

<u>Terms</u>	<u>Meaning</u>
2-10-30	2 percent discount for first 10 days; bill due net on day 30. Sales date coincides with date of shipment, not when sales is closed.
2-10-30 E. O. M.	2 percent discount for first 10 days, bill due net on day 30--but both days are counted from the <i>end</i> of the month in which the sales are made.
2-10-30 M. O. M.	2 percent discount for first 10 days, bill due net on day 30--but both days start from the fifteenth of the month <i>following</i> the sales date.
2-10-30 R. O. G.	2 percent discount for first 10 days, bill due net on day 30--but both periods start from the date of receipt of the product, not from the date of sale.
C. O. D. (Cash On Delivery)	Bill due upon delivery of product.
C. B. D. (Cash Before Delivery)	Product is prepared and packaged by seller, but shipment is not made until buyer pays in full.

Siropolis, N. C. Small Business Management, 4th ed., Chapter 15, p. 461. Houghton Mifflin Company.
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How Credit Customers May Benefit from Cash Discounts

If entrepreneur offers credit terms of...	...then credit customers, by taking advantage of cash discounts, can earn an annual interest rate* of
1-10-30	18%
2-10-30	36%
3-10-30	54%
1-10-60	7%
2-10-60	14%
3-10-60	22%

*FORMULA:
$$I = \frac{D}{(G - D)(T \div 360)} \times 100$$

where I = annual rate of interest earned by credit customer
 D = amount of cash discount offered to credit customer
 G = amount of bill owed the entrepreneur
 T = the days' difference between the discount and net payment
 dates
 360 = the number of days in a year (rounded)

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<i>Aging Schedule</i>	
<u>Age</u>	Amounts Owed by Customers <u>(Receivables)</u>
Not past-due	\$13,600
01 to 30 days past-due	5,400
31 to 60 days past-due	1,200
61 to 90 days past-due	800
More than 90 days past-due	<u>400</u>
Total owed	<u>\$21,400</u>

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Charlane's Fashions, Inc.: Balance Sheet (July 31, 1980)

<u>Assets</u>		<u>Equities</u>	
Current assets	\$41,000	Current liabilities	\$ 5,100
Fixed assets	<u>4,300</u>	Owners' equity	<u>40,200</u>
Total assets	<u>\$45,300</u>	Total equities	<u>\$45,300</u>

***Charlane's Fashions, Inc.: Income Statement
(for six months ending July 31, 1980)***

Sales revenues	\$100,500
Operating expenses	<u>89,300</u>
Operating profit	\$ 11,200
Federal income tax	<u>2,400</u>
Net profit	<u>\$ 8,800</u>

Charlane's Fashions, Inc.: Balance Sheet (July 31, 1981)

<u>Assets</u>		<u>Equities</u>	
Current assets		Current liabilities	
Cash	\$ 900	Accounts payable	\$503,100
Inventory	<u>314,400</u>	Payroll tax	23,300
Fixed assets	5,500	Bank loan	<u>3,800</u>
		Owners' equity	<u>(209,400)</u>
Total assets	<u>\$320,800</u>	Total equities	<u>\$320,800</u>

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What Purchase Saving May Mean to the Entrepreneur

If the ratio of before-tax profits to sales is...	...then purchase savings of \$1,000 would raise profits as much as a sales increase of
20%	\$ 5,000
15%	6,700
10%	10,000
5%	20,000
2%	50,000

Siropolis, N. C. *Small Business Management*, 4th ed., Chap. 17, p. 511. Houghton Mifflin Company.
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Purchasing Guidelines

- Buying the Right Quality
- Buying the Right Quantity
- Buying at the Right Time
- Buying from the Right Supplier
- Buying at the Right Price

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Inventory Management

- To avoid the loss of customers because product is not in stock
- To enable customers to look over a product before buying
- To capitalize on discounts in the price of raw materials
- To keep a plant from cutting back or shutting down
- To make product in quantities that minimize cost
- To speculate against increases in price and cost
- To assure customers of prompt delivery
- To protect against strikes

This list is by no means complete, nor does each reason stand by itself

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$$\begin{aligned}\text{Inventory Investment} &= \frac{12 \text{ months/year}}{3 \text{ turns/year}} \\ &= 4 \text{ months' supply}\end{aligned}$$

$$\begin{aligned}\text{Inventory investment} &= \frac{\$900,000 \text{ revenues/year} \times 75\%^5}{3 \text{ turns/year}} \\ &= \frac{675,000}{3} \\ &= \$225,000\end{aligned}$$

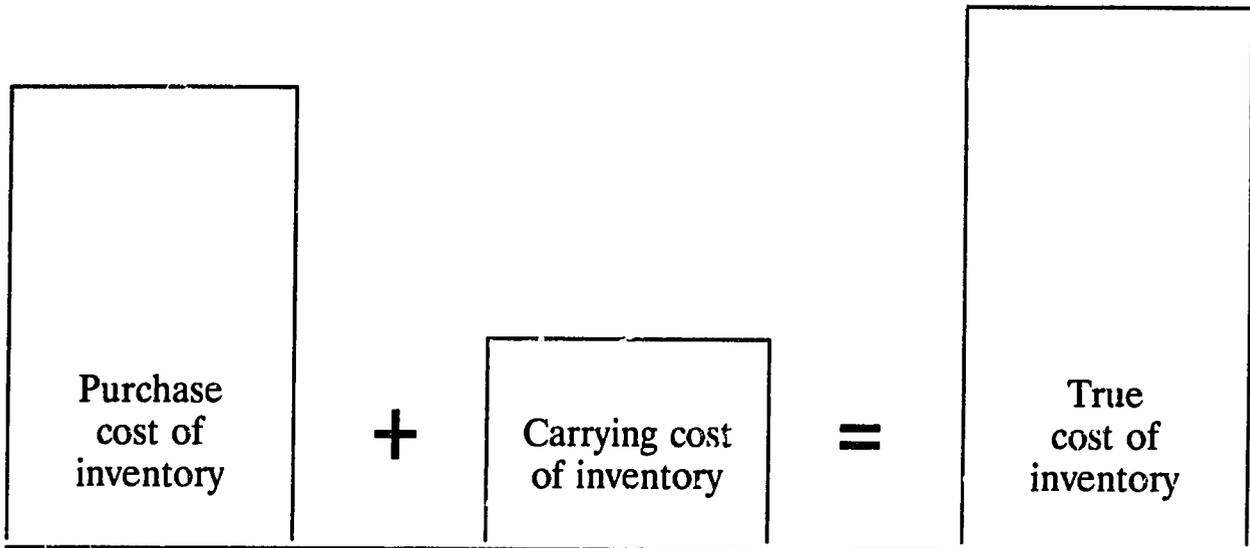
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Inventory Costs

- Storage and handling
- Interest, insurance, and property taxes
- Obsolescence and spoilage
- Paperwork

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The True Cost of Inventory



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Samantha Teen Shoppe, Inc.

Last year, the store had:

- Sales revenues of \$234,000
- A gross margin of 40 percent on sales
- An inventory turnover of three

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An Example Business--Phillips' Pharmacy

Peter Phillips, a thirty-nine-year-old pharmacist, has been operating a small pharmacy in Sturgeon Bay for three years. He had become increasingly disenchanted with his former job as a head pharmacist with a national chain in Chicago. He felt that he had the management capability to run his own business and had always wanted to be his own boss. The death of his mother afforded him, through a small inheritance, the opportunity to start his own business. Since his family had often vacationed in Door County, he felt that a Sturgeon Bay location would eliminate some of the tension and stress he had experienced in his previous job.

The \$38,000 from his mother's estate, together with \$20,000 that he withdrew from his pension fund, was enough equity to secure a loan of \$30,000. Because of several connections he had with drug suppliers in Chicago, he secured favorable trade credit on all of his opening inventory of \$100,000. He moved his family to Sturgeon Bay and opened the business in early 19X1.

The first year of being in business for himself did not meet Pete's expectations. The loss from operations for that year was \$13,299. This forced him to secure a second mortgage on his home for \$21,369 in order to obtain working capital.

Changes in operations allowed him to cut his second year losses to only \$2,500. His wife Marsha, an R.N., went back to work for the Sturgeon Bay school system, working full time at the high school. Peter and his family were able to manage without taking a salary from the business except for \$5,639 in 19X2.

Marsha, however, was extremely impatient with her husband's inability to make the business turn a profit. Peter agreed it was time the business pay him a salary commensurate with his training, as well as a profit based on their investment. Although the third year showed a profit of \$10,635, Peter and Marsha felt that the business could show a better return.

Figures 1 and 2 show the most recent balance sheet and income statement for the firm.

Phillips' Pharmacy
19X4 Monthly Cash Expenditure Budget

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Wages	\$ 3,575	\$2,600	\$2,600	\$2,600	\$3,575	\$4,225	\$4,875	\$6,175	\$6,175	\$5,200	\$5,200	\$5,200	\$ 52,000
Rent	900	900	900	900	900	900	900	900	900	900	900	900	10,800
Utilities	675	670	670	280	225	170	170	170	225	335	450	560	4,600
Prof. Services	440	----	----	880	----	----	440	----	----	440	----	----	2,200
Taxes/License	550	165	220	385	110	500	550	830	660	500	500	550	5,520
Insurance	7,500	----	----	----	----	----	----	----	----	----	----	----	7,500
Interest/Principal Payment	609	609	609	609	608	608	608	608	608	608	608	608	7,300
Repair	1,540	200	200	200	230	275	275	280	200	200	200	200	4,000
Advertising	450	150	50	50	275	675	675	675	300	300	300	600	4,500
Telephone	75	65	60	60	60	75	90	100	100	65	85	65	900
Misc./Del.	1,230	300	520	150	660	740	1,110	890	660	660	740	740	8,400
Withdrawals	<u>2,334</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,315</u>	<u>28,000</u>
TOTAL BUDGET	<u>\$19,879</u>	<u>\$7,994</u>	<u>\$8,164</u>	<u>\$8,449</u>	<u>\$8,978</u>	<u>\$10,503</u>	<u>\$12,028</u>	<u>\$12,163</u>	<u>\$12,163</u>	<u>\$11,543</u>	<u>\$11,318</u>	<u>\$11,738</u>	<u>\$135,720</u>

Depreciation and Bad Debts are not cash expenses.

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Phillips' Pharmacy
19X4 Monthly Operating Expense Budget

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Wages	\$ 3,575	\$2,600	\$2,600	\$2,600	\$3,575	\$4,225	\$4,875	\$6,175	\$6,175	\$5,200	\$5,200	\$5,200	\$ 52,000
Rent	900	900	900	900	900	900	900	900	900	900	900	900	10,800
Utilities	675	670	670	280	225	170	170	170	225	335	450	560	4,600
Prof. Services	440	----	----	860	----	----	440	----	----	440	----	----	2,200
Taxes/License	550	165	220	385	110	500	550	830	660	500	500	550	5,520
Insurance	625	625	625	625	625	625	625	625	625	625	625	625	7,500
Interest	359	359	359	359	358	358	358	358	358	358	358	358	4,300
Repair	1,540	200	200	200	230	275	275	280	200	290	200	200	4,000
Depreciation	177	177	177	177	177	177	177	177	176	176	176	176	2,120
Advertising	450	150	50	50	275	675	675	675	300	300	300	600	4,500
Bad Debts	90	120	210	60	270	300	450	360	270	270	300	300	3,000
Telephone	75	65	60	60	60	75	90	100	100	65	85	65	900
Misc./Del.	<u>1,230</u>	<u>300</u>	<u>520</u>	<u>150</u>	<u>660</u>	<u>740</u>	<u>1,110</u>	<u>890</u>	<u>660</u>	<u>660</u>	<u>740</u>	<u>740</u>	<u>8,400</u>
Total Operating Expenses	10,686	6,331	6,591	6,726	7,465	9,020	10,695	11,540	10,649	10,029	9,834	10,274	109,840
Plus:													
Owner Withdrawal (Salary) and Profit	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,540	30,700
Principal Payment	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>3,000</u>
TOTAL BUDGET	<u>\$13,496</u>	<u>\$9,141</u>	<u>\$9,401</u>	<u>\$9,536</u>	<u>\$10,275</u>	<u>\$11,830</u>	<u>\$13,505</u>	<u>\$14,350</u>	<u>\$13,459</u>	<u>\$12,839</u>	<u>\$12,644</u>	<u>\$13,064</u>	<u>\$143,540</u>

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***Phillips' Pharmacy
19X4 Monthly Sales Targets***

	<u>Last Year</u>	<u>Last Year %</u>	<u>30% Gross Margin Budgeted</u>	<u>35% Gross Margin Budgeted</u>
Jan	\$ 12,736	3	\$ 14,355	\$ 12,303
Feb	16,980	4	19,139	16,405
Mar	29,717	7	33,493	28,708
Apr	8,491	2	9,570	8,202
May	38,207	9	43,062	36,910
Jun	42,453	10	47,847	41,012
Jul	63,680	15	71,770	61,517
Aug	50,945	12	57,416	49,214
Sep	38,210	9	43,062	36,910
Oct	38,200	9	43,062	36,910
Nov	42,459	10	47,847	41,012
Dec	<u>42,450</u>	<u>10</u>	<u>47,847</u>	<u>41,012</u>
TOTAL	<u>\$424,528</u>	<u>100%</u>	<u>\$478,470</u>	<u>\$410,115</u>

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Phillips' Pharmacy
19X4 Annual Inventory

STEP ONE: Compute average inventory

$$\text{Desired Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$3.4 = \frac{\$334,930}{X}$$

$$X = \$98,509$$

STEP TWO: Compute desired ending inventory

$$\text{Average Inventory} = \frac{\text{Beginning Inventory} + \text{Ending Inventory}}{2}$$

$$\$98,509 = \frac{\$110,154 + \text{E.I.}}{2}$$

$$2 \times \$98,509 = 110,154 + \text{E.I.}$$

$$197,018 = 110,154 + \text{E.I.}$$

$$197,018 - 110,154 = \text{E.I.}$$

$$86,864 = \text{E.I.}$$

STEP THREE: Compute planned purchases

NOTE: A standard gross profit section of an Income Statement looks like this:

Sales	\$478,470
Less: Cost of Goods Sold	
Beginning Inventory	\$110,154
Plus: Purchases	<u>+ 311,640</u>
Goods Available for Sale	421,794
Less: Ending Inventory	<u>- 86,864</u>
Cost of Goods Sold	\$334,930
Gross Profit	\$143,540

$$(a) \$334,930 + \$86,864 = \$421,794$$

$$(b) \$421,794 - \$110,154 = \$311,640$$

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***Phillips' Pharmacy
Monthly Inventory Plan***

	(1)	(2)	(3)	(4)	(5)
	<u>Projected Monthly Sales</u>	<u>Projected Monthly Cost of Sales</u>	<u>Planned Inventory Reduction</u>	<u>(Col 2-Col 3) Estimated Monthly Orders</u>	<u>Est. Mo. Inventory Payments</u>
Dec	---	\$ 10,049	\$ 1,941	\$ 8,108	---
Jan	\$ 14,355	13,398	1,941	11,457	\$ 45,150
Feb	19,139	23,445	1,941	21,504	8,108
Mar	33,493	6,699	1,941	4,758	11,457
Apr	9,570	30,143	1,941	28,202	21,504
May	43,062	33,493	1,941	31,552	4,758
Jun	47,847	50,239	1,941	48,298	28,202
Jul	71,770	40,191	1,941	38,250	31,552
Aug	57,416	30,143	1,941	28,202	48,298
Sep	43,062	30,143	1,941	28,202	38,250
Oct	43,062	33,493	1,941	31,552	28,202
Nov	47,847	33,493	1,940	31,553	28,202
Dec	<u>47,847</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>31,552</u>
TOTAL	<u>\$478,470</u>	<u>\$334,929</u>	<u>\$23,291</u>	<u>\$311,638</u>	<u>\$325,235</u>

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***Phillips' Pharmacy
Open Account Credit Sales
as a % of Total Monthly Sales***

<u>Sales</u>	<u>19X3 Credit Sales</u>	÷	<u>19X3 Sales</u>	=	<u>19X3 % Credit Sales for the Month</u>	x	<u>19X4 Monthly Sales Targets</u>	=	<u>Estimated Monthly Credit Sales</u>
Jan	\$ 4,001		\$ 12,736		31%		\$ 14,355		\$ 4,450
Feb	4,980		16,980		29%		19,139		5,550
Mar	7,313		19,717		25%		33,493		8,373
Apr	3,306		8,491		39%		9,570		3,732
May	6,534		38,207		17%		43,062		7,321
Jun	6,320		42,453		15%		47,847		7,177
Jul	7,380		63,680		12%		71,770		8,612
Aug	6,023		50,945		12%		57,416		6,890
Sep	8,386		38,210		22%		43,062		9,474
Oct	12,298		38,200		32%		43,062		13,780
Nov	17,057		42,459		40%		47,847		19,139
Dec	<u>20,410</u>		<u>42,450</u>		<u>48%</u>		<u>47,847</u>		<u>22,967</u>
TOTAL	<u>\$104,008</u>		<u>\$424,528</u>		<u> </u>		<u>\$478,470</u>		<u>\$117,465</u>

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***Phillips' Pharmacy
Collections History***

<u>% Collections</u>	<u>Time in Days</u>
30%	0 to 30
40%	31 to 60
26%	61 to 90

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***January--Estimated Cash to be Received This Month
from Credit Sales in Past Months***

<u>Month Involved</u>	<u>Sales</u>	<u>Credit Sales</u>	x	<u>Estimated % Collections in Jan.</u>	=	<u>Estimated \$ Collections in Jan.</u>
Dec	\$42,450	\$20,410		30%		\$ 6,123
Nov	42,459	17,057		40%		6,823
Oct	38,200	12,298		26%		<u>3,197</u>
						<u>\$16,143</u>

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***February--Estimated Cash to Be Received from Credit Sales
in Past Months***

<u>Months Involved</u>	<u>Sales Targets</u>	<u>Estimated Credit Sales</u>	x	<u>Estimated % Collections in Feb.</u>	=	<u>Estimated \$ Collections in Feb.</u>
Jan	\$14,355	\$ 4,450		30%		\$ 1,335
Dec	42,450	20,410		40%		8,164
Nov	42,450	17,057		26%		<u>4,435</u>
						<u>\$13,934</u>

***March--Estimated Cash to Be Received from Credit Sales
in Past Months***

<u>Months Involved</u>	<u>Sales Targets</u>	<u>Estimated Credit Sales</u>	x	<u>Estimated % Collections in Mar.</u>	=	<u>Estimated \$ Collections in Mar.</u>
Feb	\$19,139	\$ 5,550		30%		\$1,665
Jan	14,355	4,450		40%		1,780
Dec	42,450	20,410		26%		<u>5,307</u>
						<u>\$8,752</u>

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***Phillips' Pharmacy
19X4 Estimated Monthly Cash Sales***

Month	Sales Targets	-	Estimated Credit Sales	=	Estimated Cash Sales
Jan	\$14,355		\$ 4,450		\$ 9,905
Feb	19,139		5,550		13,589
Mar	33,493		8,373		25,120
Apr	9,570		3,732		5,838
May	43,062		7,321		35,741
June	47,847		7,177		40,670
July	71,770		8,612		63,158
Aug	57,416		6,890		50,526
Sep	43,062		9,474		33,588
Oct	43,062		13,780		29,282
Nov	47,847		19,139		28,708
Dec	47,847		22,967		24,880

Wingenter, Thomas H. Part 4 - "Cash Flow Management." Financial Management for Small Business. Small Business Development Center, University of Wisconsin, p. 77. © The University of Wisconsin System. Translated and used with permission.

Phillips' Pharmacy
Cash Budget
For Calendar Year 19X4

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Cash Sales	\$ 9,905	\$13,589	\$25,120	\$ 5,838	\$35,741	\$40,670	\$63,158	\$50,526	\$33,588	\$29,282	\$28,708	\$24,880	\$361,005
+ Collections on Accts. Rec.	<u>16,143</u>	<u>13,934</u>	<u>8,752</u>	<u>5,889</u>	<u>5,912</u>	<u>5,866</u>	<u>6,051</u>	<u>7,358</u>	<u>7,837</u>	<u>7,837</u>	<u>9,715</u>	<u>13,717</u>	<u>108,552</u>
Cash Inflows	<u>26,048</u>	<u>27,523</u>	<u>33,872</u>	<u>11,727</u>	<u>41,653</u>	<u>46,536</u>	<u>69,209</u>	<u>57,884</u>	<u>40,966</u>	<u>37,119</u>	<u>38,423</u>	<u>38,597</u>	<u>469,557</u>
Cash Expenditures	19,879	7,994	8,164	8,449	8,978	10,503	12,028	12,963	12,163	11,543	11,318	11,738	135,720
Payments for Inventory	<u>45,150</u>	<u>8,108</u>	<u>11,457</u>	<u>21,504</u>	<u>4,758</u>	<u>28,202</u>	<u>31,552</u>	<u>48,298</u>	<u>38,250</u>	<u>28,202</u>	<u>28,202</u>	<u>31,552</u>	<u>325,235</u>
Cash Outflows	<u>65,029</u>	<u>16,102</u>	<u>19,621</u>	<u>29,953</u>	<u>13,736</u>	<u>38,705</u>	<u>43,580</u>	<u>61,261</u>	<u>50,413</u>	<u>39,745</u>	<u>39,520</u>	<u>43,290</u>	<u>460,955</u>
Excess (deficiency) of cash over outflows	[38,981]	11,421	14,251	[18,226]	27,917	7,831	25,629	[3,377]	[9,447]	[2,626]	[1,097]	[4,693]	8,602
Beginning Balance	<u>2,343</u>	<u>[36,638]</u>	<u>[25,217]</u>	<u>[10,966]</u>	<u>[29,192]</u>	<u>[1,275]</u>	<u>6,556</u>	<u>32,185</u>	<u>28,808</u>	<u>19,361</u>	<u>16,735</u>	<u>15,638</u>	<u>2,343</u>
Cash Available (Deficit)	<u>[\$36,638]</u>	<u>[\$25,217]</u>	<u>[\$10,966]</u>	<u>[\$29,192]</u>	<u>[\$1,275]</u>	<u>\$ 6,556</u>	<u>\$32,185</u>	<u>\$28,808</u>	<u>\$19,361</u>	<u>\$16,735</u>	<u>\$15,638</u>	<u>\$10,945</u>	<u>\$ 10,945</u>

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***Phillips' Pharmacy
Extended Cash Budget
To Show Borrowings For Calendar Year 19X4***

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Cash Inflows	\$26,048	\$27,523	\$33,872	\$11,727	\$41,653	\$46,536	\$69,209	\$57,884	\$40,966	\$37,119	\$38,423	\$38,597	\$469,557
Cash Outflows	<u>65,029</u>	<u>16,102</u>	<u>19,621</u>	<u>29,953</u>	<u>13,736</u>	<u>38,705</u>	<u>43,580</u>	<u>61,261</u>	<u>50,413</u>	<u>39,745</u>	<u>39,520</u>	<u>43,290</u>	<u>460,955</u>
Excess (deficiency of cash over outflows	[38,981]	11,421	14,251	[18,226]	27,917	7,831	25,629	[3,377]	[9,447]	[2,626]	[1,097]	[4,693]	8,602
Beginning Balance	<u>2,343</u>	<u>3,362</u>	<u>3,783</u>	<u>4,034</u>	<u>3,808</u>	<u>4,125</u>	<u>6,556</u>	<u>32,185</u>	<u>28,808</u>	<u>19,361</u>	<u>16,735</u>	<u>15,638</u>	<u>2,343</u>
Cash Available (Deficit)	[36,638]	14,783	18,034	[14,192]	31,725	11,956	32,185	28,808	19,361	16,735	15,638	10,945	10,945
+ Needed Borrowings	40,000	----	----	18,000	----	----	----	----	----	----	----	----	
- Loan Repayments	----	<u>11,000</u>	<u>14,000</u>	----	<u>27,600</u>	<u>5,400</u>	----	----	----	----	----	----	
Ending Balance	<u>\$ 3,362</u>	<u>\$ 3,783</u>	<u>\$ 4,034</u>	<u>\$ 3,808</u>	<u>\$ 4,125</u>	<u>\$ 6,556</u>	<u>\$32,185</u>	<u>\$28,808</u>	<u>\$19,361</u>	<u>\$16,735</u>	<u>\$15,638</u>	<u>\$10,945</u>	<u>\$ 10,945</u>

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Phillips' Pharmacy
Balance Sheets

December 31, 19X3 January 31, 19X4 February 28, 19X4

Assets**Current Assets**

Cash	\$ 2,343	\$ 1,896	\$ 414
Accounts Receivable (net)	34,040	21,517	12,597
Inventory	110,154	109,862	109,419
Prepaid Expenses	<u>1,029</u>	<u>7,904</u>	<u>7,279</u>
Total Current Assets	147,566	141,179	129,709

Fixed Assets

Fixtures and Equipment (net after depreciation)	<u>30,634</u>	<u>30,457</u>	<u>30,280</u>
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TOTAL ASSETS	<u>\$178,200</u>	<u>\$171,636</u>	<u>\$159,989</u>
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Liabilities**Current and Accrued
Liabilities**

Accounts Payable	\$ 45,150	\$ 8,108	\$ 11,457
Notes Payable (within one year)	34,390	74,140	62,890
Other Liabilities	<u>12,614</u>	<u>12,614</u>	<u>12,614</u>
Total Current & Accrued Liabilities	92,154	94,862	86,961

Long-Term Liabilities

Notes Payable (later than one year)	<u>28,832</u>	<u>28,832</u>	<u>28,832</u>
--	---------------	---------------	---------------

Total Liabilities	120,986	123,694	115,793
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Owners' Equity	<u>57,214</u>	<u>47,942</u>	<u>44,196</u>
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TOTAL LIABILITIES AND OWNERS' EQUITY	<u>\$178,200</u>	<u>\$171,636</u>	<u>\$159,989</u>
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***Phillips' Pharmacy
Income Statements
For Months of January and February 19X4***

	<u>January</u>	<u>February</u>
Sales	\$ 12,000	\$ 17,000
Less Cost of Goods Sold:		
Beginning Inventory	110,154	109,862
Plus Purchases	<u>8,108</u>	<u>11,457</u>
Total Inventory Available	118,262	121,319
Less Ending Inventory	<u>109,862</u>	<u>109,419</u>
Cost of Goods Sold	8,400	11,900
Gross Profit	3,500	5,100
Less Operating Expenses:		
Wages	3,417	2,514
Rent	900	900
Utilities	718	719
Professional Services	410	0
Taxes/Licenses	565	140
Insurance	625	625
Interest	359	359
Repairs	1,420	350
Depreciation	177	177
Advertising	430	150
Bad Debts	100	135
Telephone	78	72
Misc./Delivery	<u>1,340</u>	<u>372</u>
Total Operating Expenses	<u>10,539</u>	<u>6,513</u>
Net Profit (Loss) Before Tax	<u>\$ (6,939)</u>	<u>\$ (1,413)</u>

Wingenter, Thomas H. Part 4 - "Cash Flow Management." Financial Management for Small Business. Small Business Development Center, University of Wisconsin, p. 91. © The University of Wisconsin System. Translated and used with permission.

Phillips' Pharmacy
Statement of Cash Flows
For Months Ending January and February 19X4

	<u>January</u>	<u>February</u>
Operating Activities		
Net Income	\$ (6,939)	\$ (1,413)
Adjustments needed to convert net income to a cash basis:		
Depreciation expenses for the month	177	177
Add (deduct) changes in current assets:		
Decrease in Accounts Receivable	12,523	8,920
Decrease in Inventory	292	443
Increase in Prepaid Exp.	(6,875)	
Decrease in Prepaid Exp.		625
Add (deduct) changes in current liabilities:		
Decrease in Accounts Payable	(37,042)	
Increase in Accounts Payable		<u>3,349</u>
Cash provided by operations	<u>(37,864)</u>	12,101
Investing activities		
Cash provided by:		
Sale of long-term investments	\$XXXX	\$XXXX
Cash was used to:		
Purchase plant and equipment	<u>(XXXX)</u>	<u>(XXXX)</u>
Net cash used for investing activities	XXXX	XXXX
Financing Activities		
Cash was provided by:		
Issue of short-term note	\$40,000	
Cash was used to:		
Retirement of short-term note	(250)	11,250
Pay withdrawals to owner	<u>(2,333)</u>	<u>(2,333)</u>
Net cash provided (used) by financing activities	<u>37,417</u>	<u>(13,583)</u>
Net increase (decrease) in cash	<u>\$ (447)</u>	<u>\$ (1,482)</u>

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Financial Statements
The Cash Budget

Example: A wholesaler begins a venture on January 1 with a \$15,000 inventory and \$24,000 cash. She pays her bills promptly, and she bills customers 30 days net. She keeps an inventory equal to sales expected during the next 30 days.

Siropolis, N. C. Small Business Management, 4th ed., Chapter 11, 1986, p. 332. Houghton Mifflin Company.
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Income Statements

	<u>Actual January</u>	<u>Projected February</u>
Sales revenues	\$20,000	\$32,000
Expenses	<u>15,000</u>	<u>24,000</u>
Profits	<u>\$ 5,000</u>	<u>\$ 8,000</u>

One month later, the wholesaler looks at her first income statement with pride. "A \$5,000 profit isn't bad for a beginner," she says. Her January income statement appears in the Exhibit above, along with her projected income statement for February.

One day later, her banker calls to say she has run out of cash. "How come?" replies the wholesaler. "I made a profit of \$5,000 in January. How can I possibly be out of cash?"

The missing cash is tied up in inventory and in bills owed by customers. The wholesaler had plowed her profits of \$5,000 back into the business to build up inventories in anticipation of February sales of \$32,000. She had used up the \$24,000 cash on hand as of January 1 for the same reason.

How might the wholesaler have avoided this cash flow problem?

Cash Budget

	<u>January</u>	<u>February</u>	<u>March</u>
Sales revenues	\$20,000	\$32,000	\$40,000
Cash inflows from sales	0	20,000	32,000
Cash outflows for inventory	<u>24,000</u>	<u>30,000</u>	<u>30,000</u>
Cash gain or lost	(\$24,000)	(\$10,000)	\$ 2,000
Beginning cash	<u>24,000</u>	<u>0</u>	<u>(10,000)</u>
Ending cash	<u>\$ 0</u>	<u>(\$10,000)</u>	<u>(\$ 8,000)</u>

The Cost of Uncollected Accounts

If the ratio of before-tax profits to sales is then, for every \$1,000 of uncollected accounts, additional sales in these amounts would be needed to recover the lost profit	
20%		\$ 5,000
15%		6,700
10%		10,000
5%		20,000
2%		50,000

Credit can also be costly, unless entrepreneurs take pains to control their costs of credit and collection closely. Just how costly credit can be, is underscored by the Exhibit above and by this example:

Example: An entrepreneur sell \$1,000 worth of lumber on credit to the Nemo Corporation, which manufactures office furniture. She has done business with Nemo before. Although at times she had to send two or three invoices, Nemo eventually paid the bill. The entrepreneur's ratio of before-tax profits to sales revenues is 5 percent.

Three months go by, and the amount is still outstanding. When the entrepreneur pursues the collection, she finds that Nemo has gone out of business. Note in the Exhibit above that, at a profit-to-sales ratio of 5 percent, the entrepreneur must sell \$20,000 of additional lumber to offset the \$1,000 that she cannot collect.

Business Credit Terms

<u>Terms</u>	<u>Meaning</u>
2-10-30	2 percent discount for first 10 days; bill due net on day 30. Sales date coincides with date of shipment, not when sale is closed.
2-10-30 E.O.M.	2 percent discount for first 10 days, bill due net on day 30--but both days are counted from the <i>end</i> of the month in which the sales are made.
2-10-30 M.O.M.	2 percent discount for first 10 days, bill due net on day 30--but both days start from the fifteenth of the month <i>following</i> the sales date.
2-10-30 R.O.G.	2 percent discount for first 10 days, bill due net on day 30--but both periods start from the date of receipt of the product, not from the date of sale.
C.O.D. (Cash On Delivery)	Bill due upon delivery of product.
C.B.D. (Cash Before Delivery)	Product is prepared and packaged by seller, but shipment is not made until buyer pays in full.

How Credit Customers May Benefit from Cash Discounts

If entrepreneur offers credit terms of . . .

. . . then credit customers, by taking advantage of cash discounts, can earn an annual interest rate* of

1-10-30	18%
2-10-30	36%
3-10-30	54%
1-10-60	7%
2-10-60	14%
3-10-60	22%

*FORMULA: $I = \frac{D}{(G - D)(T \div 360)} \times 100$

where I	= annual rate of interest earned by credit customer
D	= amount of cash discount offered to credit customer
G	= amount of bill owed the entrepreneur
T	= the days' difference between the discount and net payment dates
360	= the number of days in a year (rounded)

Aging Schedule

<u>Age</u>	<u>Amounts Owed by Customers</u> <u>(Receivables)</u>
Not past-due	\$13,600
01 to 30 days past-due	5,400
31 to 60 days past-due	1,200
61 to 90 days past-due	800
More than 90 days past-due	<u>400</u>
Total owed	<u>\$21,400</u>

Siropolis, N. C. Small Business Management, 4th ed., Chapter 15, p. 464. Houghton Mifflin Company.
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Charlane's Fashions, Inc.

An entrepreneur owned a pair of small but highly profitable stores specializing in women's wear. For years she had placed orders only for her normal needs, usually in the \$500 to \$1,000 range. She bought most goods from the top ready-to-wear manufacturers in New York, always without difficulty. Her credit reputation was excellent--she paid her bills on time, never made unauthorized returns, and always behaved, from the suppliers' point of view, in a most exemplary way.

Siropolis, N. C. Small Business Management, 4th ed., Chapter 15, p. 476. Houghton Mifflin Company.
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Charlane's Fashions, Inc.: Balance Sheet (July 31, 1980)

<u>Assets</u>		<u>Equities</u>	
Current assets	\$41,000	Current liabilities	\$ 5,100
Fixed assets	<u>4,300</u>	Owners' equity	<u>40,200</u>
Total assets	<u>\$45,300</u>	Total equities	<u>\$45,300</u>

***Charlane's Fashions, Inc.: Income Statement
(for six months ending July 31, 1980)***

Sales revenues	\$100,500
Operating expenses	<u>89,300</u>
Operating profit	\$ 11,200
Federal income tax	<u>2,400</u>
Net profit	<u>\$ 8,800</u>

She had started from scratch, so it was with some pride that she went over her latest financial statements (see Exhibit above). She had indeed come a long way in the five years she had been in business for herself.

Headly with success, she decided to open nine new stores the next year, without investing additional money. She planned instead to rely solely upon the good will of her current suppliers to finance her expansion and to act as references for her new suppliers.

She kept her suppliers, new and old, in the dark about her ambitious plan to expand. She was sure suppliers would never suspect that she planned to add as many as nine stores in one year.

Her credit rating was excellent so she aroused little suspicion when, the following spring season, she flew to New York and began placing orders larger than previously. By June 20, she had placed more than 200 orders with suppliers, totaling more than \$230,000. Most of these orders were placed with new suppliers.

The day of reckoning soon arrived. On August 8, she called a meeting of her creditors, to report that her company was in troubled financial straits (see Exhibit below).

Charlane's Fashions, Inc.: Balance Sheet (July 31, 1980)

<u>Assets</u>		<u>Equities</u>	
Current assets		Current liabilities	
Cash	\$ 900	Accounts payable	\$503,100
Inventory	<u>314,400</u> <u>\$315,300</u>	Payroll tax	23,300
Fixed Assets	5,500	Bank loan	<u>3,800</u> \$530,200
Total assets	<u>\$320,800</u>	Owners' equity	<u>(209,400)</u>
		Total equities	<u>\$320,800</u>

Less than a month later, the referee's office in the Central District of California judged her to be bankrupt. The new stores she had managed to open went down the drain along with her original two.

Questions

1. What really caused the entrepreneur's bankruptcy? If you had been the entrepreneur, what would you have done differently? Why?
2. Could the entrepreneur's creditors have prevented their losses? If so, how?
3. What was the company's operating loss in its last year?
4. What should the entrepreneur do now? Why?

Source: Case adapted from Sol Barzman, *Everyday Credit Checking*. © 1973 by Sol Barzman courtesy of John Shaffner Associates.

Bingham Electrical Parts, Inc.

Norton Bingham owned an electrical parts and supplies store in Los Angeles. modestly successful over the years, Mr. Bingham sold his electrical products on credit terms of 2-10-30.

In 1980, Mr. Bingham's sales revenues were \$480,000. On December 31, 1980, his accounts receivable were \$60,000.

According to Dun & Bradstreet, collection periods for the electrical parts and supplies industry vary as follows:

<u>Range</u>	<u>Collection Period</u>
Top Fourth	38 days
Median	47
Bottom Fourth	60

Questions

1. On the average, how long does it take Mr. Bingham to collect from his customers?
2. How good is Mr. Bingham at managing his credit-and-collection activities?

Inventory Management

Example: A retailer of men's clothing forecasts revenues of \$900,000 next year. In this industry, inventory turns over three times a year, on the average. How many months' supply should be on hand? How much investment should be in inventory? To answer these questions, the retailer would make the following computations:

$$\begin{aligned}\text{Inventory Investment} &= \frac{12 \text{ months/year}}{3 \text{ turns/year}} \\ &= 4 \text{ months' supply}\end{aligned}$$

Siropolis, N. C. *Small Business Management*, 4th ed., Chapter 17, p. 516. Houghton Mifflin Company.
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Inventory Management--Continued

$$\begin{aligned}\text{Inventory investment} &= \frac{\$900,000 \text{ revenues/years} \times 75\%}{3 \text{ turns/year}} \\ &= \$225,000\end{aligned}$$

These computations are only part of this entrepreneur's inventory control system. Control also involves evaluating the turnover of each item of inventory, such as shirts, ties, and topcoats.

As a way to judge inventories, turnover is by no means flawless. One flaw is that the very idea of turnover suggests that inventory should vary directly with revenues. That is, if revenues double, then inventory should also double, or if revenues should drop 50 percent, then inventory should be cut 50 percent. Not so. In fact, it is more likely that turnover will increase as revenues rise and drop off as revenues fall off.

Siropolis, N. C. *Small Business Management*, 4th ed., Chapter 17, p. 517. Houghton Mifflin Company.
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Phillips' Pharmacy

Peter Phillips, a thirty-nine-year-old pharmacist, has been operating a small pharmacy in Sturgeon Bay for three years. He had become increasingly disenchanted with his former job as a head pharmacist with a national chain in Chicago. He felt that he had the management capability to run his own business and had always wanted to be his own boss. The death of his mother afforded him, through a small inheritance, the opportunity to start his own business. Since his family had often vacationed in Door County, he felt that a Sturgeon Bay location would eliminate some of the tension and stress he had experienced in his previous job.

The \$38,000 from his mother's estate, together with \$20,000 that he withdrew from his pension fund, was enough equity to secure a loan of \$30,000. Because of several connections he had with drug suppliers in Chicago, he secured favorable trade credit on all of his opening inventory of \$100,000. He moved his family to Sturgeon Bay and opened the business in early 19X1.

The first year of being in business for himself did not meet Pet's expectations. The loss from operations for that year was \$13,299. This forced him to secure a second mortgage on his home for \$21,369 in order to obtain working capital.

Changes in operations allowed him to cut his second year losses to only \$2,500. His wife Marsha, an R.N., went back to work for the Sturgeon Bay school system, working full time at the high school. Peter and his family were able to manage without taking a salary from the business except for \$5,639 in 19X2.

Marsha, however, was extremely impatient with her husband's inability to make the business turn a profit. Peter agreed it was time the business pay him a salary commensurate with his training, as well as a profit based on their investment. Although the third year showed a profit of \$10,635, Peter and Marsha felt that the business could show a better return.

Figures 1 and 2 show the most recent balance sheet and income statement for the firm.

***Phillips' Pharmacy
19X4 Monthly Cash Expenditure Budget***

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Wages	\$ 3,575	\$2,600	\$2,600	\$2,600	\$3,575	\$4,225	\$4,875	\$6,175	\$6,175	\$5,200	\$5,200	\$5,200	\$ 52,000
Rent	900	900	900	900	900	900	900	900	900	900	900	900	10,800
Utilities	675	670	670	280	225	170	170	170	225	335	450	560	4,600
Prof. Services	440	----	----	880	----	----	440	----	----	440	----	----	2,200
Taxes/License	550	165	220	385	110	500	550	830	660	500	500	550	5,520
Insurance	7,500	----	----	----	----	----	----	----	----	----	----	----	7,500
Interest/Principal Payment	609	609	609	609	608	608	608	608	608	608	608	608	7,300
Repair	1,540	200	200	200	230	275	275	280	200	200	200	200	4,000
Advertising	450	150	50	50	275	675	675	675	300	300	300	600	4,500
Telephone	75	65	60	60	60	75	90	100	100	65	85	65	900
Misc./Del.	1,230	300	520	150	660	740	1,110	890	660	660	740	740	8,400
Withdrawals	<u>2,334</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,335</u>	<u>2,315</u>	<u>28,000</u>
TOTAL BUDGET	<u>\$19,879</u>	<u>\$7,994</u>	<u>\$8,164</u>	<u>\$8,449</u>	<u>\$8,978</u>	<u>\$10,503</u>	<u>\$12,028</u>	<u>\$12,963</u>	<u>\$12,163</u>	<u>\$11,543</u>	<u>\$11,318</u>	<u>\$11,738</u>	<u>\$135,720</u>

Depreciation and Bad Debts are not cash expenses.

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Phillips' Pharmacy
19X4 Monthly Operating Expense Budget

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Wages	\$ 3,575	\$2,600	\$2,600	\$2,600	\$3,575	\$4,225	\$4,875	\$6,175	\$6,175	\$5,200	\$5,200	\$5,200	\$ 52,000
Rent	900	900	900	900	900	900	900	900	900	900	900	900	10,800
Utilities	675	670	670	280	225	170	170	170	225	335	450	560	4,600
Prof. Services	440	----	----	880	----	----	440	----	----	440	----	----	2,200
Taxes/License	550	165	220	385	110	500	550	830	660	500	500	550	5,520
Insurance	625	625	625	625	625	625	625	625	625	625	625	625	7,500
Interest	359	359	359	359	358	358	358	358	358	358	358	358	4,300
Repair	1,540	200	200	200	230	275	275	280	200	200	200	200	4,000
Depreciation	177	177	177	177	177	177	177	177	176	176	176	176	2,120
Advertising	450	150	50	50	275	675	675	675	300	300	300	600	4,500
Bad Debts	90	120	210	60	270	300	450	360	270	270	300	300	3,000
Telephone	75	65	60	60	60	75	90	100	100	65	85	65	900
Misc./Del.	<u>1,230</u>	<u>300</u>	<u>520</u>	<u>150</u>	<u>660</u>	<u>740</u>	<u>1,110</u>	<u>890</u>	<u>660</u>	<u>660</u>	<u>740</u>	<u>740</u>	<u>8,400</u>
Total Operating Expenses	10,686	6,331	6,591	6,726	7,465	9,020	10,695	11,540	10,649	10,029	9,834	10,274	109,840
Plus: Owner Withdrawal (Salary) and Profit	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,540	30,700
Principal Payment	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>3,000</u>
TOTAL BUDGET	<u>\$13,496</u>	<u>\$9,141</u>	<u>\$9,401</u>	<u>\$9,536</u>	<u>\$10,275</u>	<u>\$11,830</u>	<u>\$13,505</u>	<u>\$14,350</u>	<u>\$13,459</u>	<u>\$12,839</u>	<u>\$12,644</u>	<u>\$13,064</u>	<u>\$143,540</u>

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Phillips' Pharmacy
19X4 Annual Inventory

STEP ONE: Compute average inventory

$$\begin{aligned} \text{Desired Inventory} &= \frac{\text{Cost of Goods Sold}}{\text{Turnover}} \\ 3.4 &= \frac{\$334,930}{X} \\ X &= \$98,509 \end{aligned}$$

STEP TWO: Compute desired ending inventory

$$\begin{aligned} \text{Average Inventory} &= \frac{\text{Beginning Inventory} + \text{Ending Inventory}}{2} \\ \$98,509 &= \frac{\$110,154 + \text{E.I.}}{2} \\ 2 \times 98,509 &= 110,154 + \text{E.I.} \\ 197,018 &= 110,154 + \text{E.I.} \\ 197,018 - 110,154 &= \text{E.I.} \\ 86,864 &= \text{E.I.} \end{aligned}$$

STEP THREE: Compute planned purchases

NOTE: A standard gross profit section of an Income Statement looks like this:

Sales		\$478,470
Less: Cost of Goods Sold		
Beginning Inventory	\$110,154	
^b Plus: Purchases	<u>+ 311,640</u>	
^a Goods Available for Sale	421,794	
Less: Ending Inventory	<u>- 86,864</u>	
Cost of Goods Sold		\$334,930
Gross Profit		\$143,540

$$\begin{aligned} \text{(a) } \$334,930 &+ \$86,864 &= \$421,794 \\ \text{(b) } \$421,794 &- \$110,154 &= \$311,640 \end{aligned}$$

***Phillips' Pharmacy
Monthly Inventory Plan***

	(1)	(2)	(3)	(4)	(5)
	Projected Monthly Sales	Projected Monthly Cost of Sales	Planned Inventory Reduction	(Col 2-Col 3) Estimated Monthly Orders	Est. Mo. Inventory Payments
Dec	---	\$ 10,049	\$ 1,941	\$ 8,108	---
Jan	\$ 14,355	13,398	1,941	11,457	\$ 45,150
Feb	19,139	23,445	1,941	21,504	8,108
Mar	33,493	6,699	1,941	4,758	11,457
Apr	9,570	30,143	1,941	28,202	21,504
May	43,062	33,493	1,941	31,552	4,758
Jun	47,847	50,239	1,941	48,298	28,202
Jul	71,770	40,191	1,941	38,250	31,552
Aug	57,416	30,143	1,941	28,202	48,298
Sep	43,062	30,143	1,941	28,202	38,250
Oct	43,062	33,493	1,941	31,552	28,202
Nov	47,847	33,493	1,940	31,553	28,202
Dec	<u>47,847</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>31,552</u>
TOTAL	<u>\$478,470</u>	<u>\$334,929</u>	<u>\$23,291</u>	<u>\$311,638</u>	<u>\$325,235</u>

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Phillips' Pharmacy
19X4 Monthly Operating Expense Budget

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Wages	\$ 3,575	\$2,600	\$2,600	\$2,600	\$3,575	\$4,225	\$4,875	\$6,175	\$6,175	\$5,200	\$5,200	\$5,200	\$ 52,000
Rent	900	900	900	900	900	900	900	900	900	900	900	900	10,800
Utilities	675	670	670	280	225	170	170	170	225	335	450	560	4,600
Prof. Services	440	----	----	880	----	----	440	----	----	440	----	----	2,200
Taxes/License	550	165	220	385	110	500	550	830	660	500	500	550	5,520
Insurance	625	625	625	625	625	625	625	625	625	625	625	625	7,500
Interest	359	359	359	359	358	358	358	358	358	358	358	358	4,300
Repair	1,540	200	200	200	230	275	275	280	200	200	200	200	4,000
Depreciation	177	177	177	177	177	177	177	177	176	176	176	176	2,120
Advertising	450	150	50	50	275	675	675	675	300	300	300	600	4,500
Bad Debts	90	120	210	60	270	300	450	360	270	270	300	300	3,000
Telephone	75	65	60	60	60	75	90	100	100	65	85	65	900
Misc./Del.	<u>1,230</u>	<u>300</u>	<u>520</u>	<u>150</u>	<u>660</u>	<u>740</u>	<u>1,110</u>	<u>890</u>	<u>660</u>	<u>660</u>	<u>740</u>	<u>740</u>	<u>8,400</u>
Total Operating Expenses	10,686	6,331	6,591	6,726	7,465	9,020	10,695	11,540	10,649	10,029	9,834	10,274	109,840
Plus:													
Owner Withdrawal (Salary) and Profit	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,540	30,700
Principal Payment	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>3,000</u>
TOTAL BUDGET	<u>\$13,496</u>	<u>\$9,141</u>	<u>\$9,401</u>	<u>\$9,536</u>	<u>\$10,275</u>	<u>\$11,830</u>	<u>\$13,505</u>	<u>\$14,350</u>	<u>\$13,459</u>	<u>\$12,839</u>	<u>\$12,644</u>	<u>\$13,064</u>	<u>\$143,540</u>

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Pete's credit policy requires payment within 30 days of billing, but the sample of pair billings from last year revealed that only 30 percent of his accounts receivable were paid between 0 and 30 days. Forty percent of his accounts receivable were paid between 31 and 60 days, and 26 percent of his accounts receivable were paid between 61 and 90 days. Pete has in the past experienced bad debt percentages of approximately 4 percent of credit sales. These findings are shown in the Figure below.

*Phillips' Pharmacy
Collections History*

<u>% Collections</u>	<u>Time in Days</u>
30%	0 to 30
40%	31 to 60
26%	61 to 90

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***January--Estimated Cash to be Received This Month
from Credit Sales in Past Months***

<u>Month Involved</u>	<u>Sales</u>	<u>Credit Sales</u>	x	<u>Estimated % Collections in Jan.</u>	=	<u>Estimated \$ Collections in Jan.</u>
Dec	\$42,450	\$20,410		30%		\$ 6,123
Nov	42,459	17,057		40%		6,823
Oct	38,200	12,298		26%		<u>3,197</u>
						<u>\$16,143</u>

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***February--Estimated Cash to Be Received from Credit Sales
in Past Months***

<u>Months Involved</u>	<u>Sales Targets</u>	<u>Estimated Credit Sales</u>	x	<u>Estimated % Collections in Feb.</u>	=	<u>Estimated \$ Collections in Feb.</u>
Jan	\$14,355	\$ 4,450		30%		\$ 1,335
Dec	42,450	20,410		40%		8,164
Nov	42,450	17,057		26%		<u>4,435</u>
						<u>\$13,934</u>

***March--Estimated Cash to Be Received from Credit Sales
in Past Months***

<u>Months Involved</u>	<u>Sales Targets</u>	<u>Estimated Credit Sales</u>	x	<u>Estimated % Collections in Mar.</u>	=	<u>Estimated \$ Collections in Mar.</u>
Feb	\$19,139	\$ 5,550		30%		\$1,665
Jan	14,355	4,450		40%		1,780
Dec	42,450	20,410		26%		<u>5,307</u>
						<u>\$8,752</u>

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Phillips' Pharmacy
19X4 Estimated Monthly Cash Sales

<u>Month</u>	<u>Sales Targets</u>	-	<u>Estimated Credit Sales</u>	=	<u>Estimated Cash Sales</u>
Jan	\$14,355		\$ 4,450		\$ 9,905
Feb	19,139		5,550		13,589
Mar	33,493		8,373		25,120
Apr	9,570		3,732		5,838
May	43,062		7,321		35,741
June	47,847		7,177		40,670
July	71,770		8,612		63,158
Aug	57,416		6,890		50,526
Sep	43,062		9,474		33,588
Oct	43,062		13,780		29,282
Nov	47,847		19,139		28,708
Dec	47,847		22,967		24,880

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***Phillips' Pharmacy
Cash Budget
For Calendar Year 19X4***

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Cash Sales	\$ 9,905	\$13,589	\$25,120	\$ 5,838	\$35,741	\$40,670	\$63,158	\$50,520	\$33,588	\$29,282	\$28,708	\$24,880	\$361,005
+ Collections on Accts. Rec.	<u>16,143</u>	<u>13,934</u>	<u>8,752</u>	<u>5,889</u>	<u>5,912</u>	<u>5,866</u>	<u>6,051</u>	<u>7,358</u>	<u>7,837</u>	<u>7,837</u>	<u>9,715</u>	<u>13,717</u>	<u>108,552</u>
Cash Inflows	<u>26,048</u>	<u>27,523</u>	<u>33,872</u>	<u>11,727</u>	<u>41,653</u>	<u>46,536</u>	<u>69,209</u>	<u>57,884</u>	<u>40,966</u>	<u>37,119</u>	<u>38,423</u>	<u>38,597</u>	<u>469,557</u>
- Cash Expenditures	19,879	7,994	8,164	8,449	8,978	10,503	12,028	12,963	12,163	11,543	11,318	11,738	135,720
- Payments for Inventory	<u>45,150</u>	<u>8,108</u>	<u>11,457</u>	<u>21,504</u>	<u>4,758</u>	<u>28,202</u>	<u>31,552</u>	<u>48,298</u>	<u>38,250</u>	<u>28,202</u>	<u>28,202</u>	<u>31,552</u>	<u>325,235</u>
Cash Outflows	<u>65,029</u>	<u>16,102</u>	<u>19,621</u>	<u>29,953</u>	<u>13,736</u>	<u>38,705</u>	<u>43,580</u>	<u>61,261</u>	<u>50,413</u>	<u>39,745</u>	<u>39,520</u>	<u>43,290</u>	<u>460,955</u>
Excess (deficiency of cash over outflows	[38,981]	11,421	14,251	[18,226]	27,917	7,831	25,629	[3,377]	[9,447]	[2,626]	[1,097]	[4,693]	3,602
+ Beginning Balance	<u>2,343</u>	<u>[36,638]</u>	<u>[25,217]</u>	<u>[10,966]</u>	<u>[29,192]</u>	<u>[1,275]</u>	<u>6,556</u>	<u>32,185</u>	<u>28,808</u>	<u>19,361</u>	<u>16,735</u>	<u>15,638</u>	<u>2,343</u>
Cash Available (Deficit)	<u>[\$36,638]</u>	<u>[\$25,217]</u>	<u>[\$10,966]</u>	<u>[\$29,192]</u>	<u>[\$1,275]</u>	<u>\$ 6,556</u>	<u>\$32,185</u>	<u>\$28,808</u>	<u>\$19,361</u>	<u>\$16,735</u>	<u>\$15,638</u>	<u>\$10,945</u>	<u>\$ 10,945</u>

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***Phillips' Pharmacy
Extended Cash Budget
To Show Borrowings For Calendar Year 19X4***

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Cash Inflows	\$26,048	\$27,523	\$33,872	\$11,727	\$41,653	\$46,536	\$69,209	\$57,884	\$40,966	\$37,119	\$38,423	\$38,597	\$469,557
Cash Outflows	<u>65,029</u>	<u>16,102</u>	<u>19,621</u>	<u>29,953</u>	<u>13,736</u>	<u>38,705</u>	<u>43,580</u>	<u>61,261</u>	<u>50,413</u>	<u>39,745</u>	<u>39,520</u>	<u>43,290</u>	<u>460,955</u>
Excess (deficiency of cash over outflows	[38,981]	11,421	14,251	[18,226]	27,917	7,831	25,629	[3,377]	[9,447]	[2,626]	[1,097]	[4,693]	8,602
Beginning Balance	<u>2,343</u>	<u>3,362</u>	<u>3,783</u>	<u>4,034</u>	<u>3,808</u>	<u>4,125</u>	<u>6,556</u>	<u>32,185</u>	<u>28,808</u>	<u>19,361</u>	<u>16,735</u>	<u>15,638</u>	<u>2,343</u>
Cash Available (Deficit)	[36,638]	14,783	18,034	[14,192]	31,725	11,956	32,185	28,808	19,361	16,735	15,638	10,945	10,945
+ Needed Borrowings	40,000	----	----	18,000	----	----	----	----	----	----	----	----	----
- Loan Repayments	----	<u>11,000</u>	<u>14,000</u>	----	<u>27,600</u>	<u>5,400</u>	----	----	----	----	----	----	----
Ending Balance	<u>\$ 3,362</u>	<u>\$ 3,783</u>	<u>\$ 4,034</u>	<u>\$ 3,808</u>	<u>\$ 4,125</u>	<u>\$ 6,556</u>	<u>\$32,185</u>	<u>\$28,808</u>	<u>\$19,361</u>	<u>\$16,735</u>	<u>\$15,638</u>	<u>\$10,945</u>	<u>\$ 10,945</u>

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Phillips' Pharmacy
Balance Sheets

December 31, 19X3 January 31, 19X4 February 28, 19X4

Assets**Current Assets**

Cash	\$ 2,343	\$ 1,896	\$ 414
Accounts Receivable (net)	34,040	21,517	12,597
Inventory	110,154	109,862	109,419
Prepaid Expenses	<u>1,029</u>	<u>7,904</u>	<u>7,279</u>
Total Current Assets	147,566	141,179	129,709

Fixed Assets

Fixtures and Equipment (net after depreciation)	<u>30,634</u>	<u>30,457</u>	<u>30,280</u>
--	---------------	---------------	---------------

TOTAL ASSETS	<u>\$178,200</u>	<u>\$171,636</u>	<u>\$159,989</u>
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Liabilities**Current and Accrued
Liabilities**

Accounts Payable	\$ 45,150	\$ 8,108	\$ 11,457
Notes Payable (within one year)	34,390	74,140	62,890
Other Liabilities	<u>12,614</u>	<u>12,614</u>	<u>12,614</u>
Total Current & Accrued Liabilities	92,154	94,862	86,961

Long-Term Liabilities

Notes Payable (later than one year)	<u>28,832</u>	<u>28,832</u>	<u>28,832</u>
--	---------------	---------------	---------------

Total Liabilities	120,986	123,694	115,793
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Owners' Equity	<u>57,214</u>	<u>47,942</u>	<u>44,196</u>
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TOTAL LIABILITIES AND OWNERS' EQUITY	<u>\$178,200</u>	<u>\$171,636</u>	<u>\$159,989</u>
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Phillips' Pharmacy
Income Statements
For Months of January and February 19X4

	<u>January</u>	<u>February</u>
Sales	\$ 12,000	\$ 17,000
Less Cost of Goods Sold:		
Beginning Inventory	110,154	109,862
Plus Purchases	<u>8,108</u>	<u>11,457</u>
Total Inventory Available	118,262	121,319
Less Ending Inventory	<u>109,862</u>	<u>109,419</u>
Cost of Goods Sold	8,400	11,900
Gross Profit	3,500	5,100
Less Operating Expenses:		
Wages	3,417	2,514
Rent	900	900
Utilities	718	719
Professional Services	410	0
Taxes/Licenses	565	140
Insurance	625	625
Interest	359	359
Repairs	1,420	350
Depreciation	177	177
Advertising	430	150
Bad Debts	100	135
Telephone	78	72
Misc./Delivery	<u>1,340</u>	<u>372</u>
Total Operating Expenses	<u>10,539</u>	<u>6,513</u>
Net Profit (Loss) Before Tax	<u>\$ (6,939)</u>	<u>\$ (1,413)</u>

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Phillips' Pharmacy
Statement of Cash Flows
For Months Ending January and February 19X4

	<u>January</u>	<u>February</u>
Operating Activities		
Net Income	\$ (6,939)	\$ (1,413)
Adjustments needed to convert net income to a cash basis:		
Depreciation expenses for the month	177	177
Add (deduct) changes in current assets:		
Decrease in Accounts Receivable	12,523	8,920
Decrease in Inventory	292	443
Increase in Prepaid Exp.	(6,875)	
Decrease in Prepaid Exp.		625
Add (deduct) changes in current liabilities:		
Decrease in Accounts Payable	(37,042)	
Increase in Accounts Payable		<u>3,349</u>
Cash provided by operations	<u>(37,864)</u>	12,101
Investing activities		
Cash provided by:		
Sale of long-term investments	\$XXXX	\$XXXX
Cash was used to:		
Purchase plant and equipment	<u>(XXXX)</u>	<u>(XXXX)</u>
Net cash used for investing activities	XXXX	XXXX
Financing Activities		
Cash was provided by:		
Issue of short-term note	\$40,000	
Cash was used to.		
Retirement of short-term note	(250)	11,250
Pay withdrawals to owner	<u>(2,333)</u>	<u>(2,333)</u>
Net cash provided (used) by financing activities	<u>37,417</u>	<u>(13,583)</u>
Net increase (decrease) in cash	<u>\$ (447)</u>	<u>\$ (1,482)</u>

Wingenter, Thomas H. Part 4 - "Cash Flow Management." Financial Management for Small Business. Small Business Development Center, University of Wisconsin, p. 92. © The University of Wisconsin System. Translated and used with permission.

FINANCIAL PERFORMANCE ANALYSIS (TRANSFORMATIONS)

UNIT 3

Title: FINANCIAL PERFORMANCE ANALYSIS (TRANSFORMATIONS)

Purpose: This unit is designed to help participants analyze their business's financial performance with several methods, such as, trend analysis or ratio analysis.

Objective: To explain the mechanics and importance of financial analysis for the entrepreneur and to potential investors {Includes trend analysis, and ratio analysis (liquidity, activity, leverage, and profitability) to participants}

Transparencies:

Transparency 1	Phillips' Pharmacy Income Statement, October 19XX
Transparency 2	Cost of Good Sold
Transparency 3	Cost of Goods Manufactured
Transparency 4	Phillip's Pharmacy Balance Sheet, December 31, 19XX
Transparency 5A	Hal's Haberdashery
Transparency 5B	Mary's Mailing Services
Transparency 5C	Dynachron Plastics Mfg. Co.
Transparency 5D1-5D2	Cash Flow Projection by Month (Spreadsheet)
Transparency 5E	Dynachron Plastics Mfg. Co.—calculations
Transparency 6	Financial Ratio Analysis (no equations)
Transparency 7	Financial Ratio Analysis (with equations)

Handouts:

Handout 1A	Hal's Haberdashery
Handout 1B	Mary's Mailing Services
Handout 1C	Dynachron Plastics Mfg. Co.
Handout 1D1-1D2	Cash Flow Projection by Month (Spreadsheet)
Handout 1E	Dynachron Plastics Mfg. Co.—calculations
Handout 2	Financial Ratio Analysis (with equations)

Class Exercises:

Handout 1A	Hal's Haberdashery
Handout 1B	Mary's Mailing Services
Handout 1C	Dynachron Plastics Mfg. Co.
Handout 1D1-1D2	Cash Flow Projection by Month (Spreadsheet)
Handout 1E	Dynachron Plastics Mfg. Co.—calculations

Product:

Trend analysis with comparative statements
Trend analysis with common size statements
Ratio analysis
Results interpretation
Industrial standards

Assignment:

Construct common size financial statements for a business
Perform trend analysis on comparative business financial statements
Perform trend analysis on common size business financial statements
Calculate ratios from business financial statements
Interpret results of analysis
Consider possible Polish industrial standards (potential business for an entrepreneur)

Notes to Instructor:

If possible, participants should be advised to bring a hand calculator to class with them. A pencil or pen and paper is sufficient, but a calculator will save time.

The instructor should have the class perform analyses on a set of comparative financial statements from a Polish business. After this they may want to analyze their own company during class time. This could generate a great amount of enthusiasm among the participants. Assure students that these techniques apply to manufacturing, retail, wholesaling, service, and all other types of businesses.

Invite representatives from a bank, finance company, and government loan or grant agency to discuss the importance of these analyses to a business that is preparing to seek outside funding.

Instructors should adjust times to meet the needs of their participants.

Instructors should provide the summary remarks and preview the next unit.

Estimated time:

Comparative statements trend analysis	30 minutes
Common size financial statement transformation	30 minutes
Common size financial statement analysis	30 minutes
Class break	30 minutes
Ratio analysis of financial statements	60 minutes
Interpretation of financial statements	45 minutes
Discussion of future publication of Polish industrial standards	15 minutes

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Content	Process
<p>of goods manufactured, or the cost of services provided.</p>	<p>First show TP 2 and begin to explain it. TP 3, the Cost of Goods Manufactured, accompanies it and should be discussed immediately after the Cost of Goods Sold, TP 2.</p>
<p>Why do we draw your attention to this particular aspect of a business? It is because some entrepreneurs fail to understand total costs involved with running their business. If a person does not know the total costs involved, it is only by luck that they can successfully run their business.</p>	<p>Ask participants if they know about any business that has had this problem.</p>
<p>The cost of goods sold is the amount that has been paid for the merchandise that has been sold. For a retailer, the cost of goods sold section of the income statement typically has a format similar to that used by Pete Phillips' for the Phillips' Pharmacy.</p>	<p>As you display TP 2 encourage class discussion.</p>
<p>For a manufacturer the cost of goods manufactured would be substituted for the purchases. The cost of goods manufactured statement is somewhat more complicated because the statement must incorporate that costs of labor, raw materials, and overhead into the cost of the product.</p>	<p>Display TP 3 and point out the differences between it and TP 2.</p>
<p>For a service business there is no cost of goods sold section in the income statement because a service, and not a product, is being sold. However it remains <u>important</u> for the business person to understand all the expenses required to provided the service.</p>	
<p>Because the cost of goods sold section is easier to understand for a retailer than a manufacturer or service provider, a retail example, Phillips' Pharmacy, will be the model for this unit.</p>	

Content	Process
<p>liquidity, or how quickly they can be converted into cash. Liabilities are listed in the order of when they must be paid. The balance sheet must balance. For every asset listed on the left side of the balance sheet there must be a liability or equity item on the right side of the balance sheet. In this way, the right-hand side of the balance sheet shows how the left-hand side of the balance sheet has been financed.</p>	
<p>The income statement measures the revenues and expenses of the company "during" a time period such as a month, quarter, or year. The balance sheet measures account balances at an instant in time; the income statement measures account "flows" over a period of time.</p>	
<p>Now let us find what these statements can tell us through analysis.</p>	
<p>A. Performing Trend Analysis on A Business' Comparative Financial Statements</p>	
<p>A popular method of analysis is a trend analysis of the changes in each account in financial statements. Look at this Income (Profit and Loss) Statement for Mary's Mailing Service¹. You can see that the column on the far right-hand side shows how much an account balance has changed from year to year. For example, Net sales have increased by +20.8 percent from 1988 to 1989.</p>	<p>Display TP 5B, Mary's Mailing Service. Perform a few calculations to validate the numbers with the participants, or you may have them perform the calculations.</p>
<p>You will notice that not all of the account balances have changed by the same percentage. This may be "good news" or "bad news." This is where interpretation begins. Net income has increased by +9.7 percent which is a much slower rate of increase than the growth in net sales.</p>	<p>Distribute HO 1B.</p>

Content	Process
<p>Clearly this is not a healthy phenomenon. What has caused this? For the answer, look to the other account balance changes on the statement.</p> <p>The culprit appears to be Cost of Goods Sold. As you can see from the statement, this account has increased by +30.6 percent in the same year that net sales have increased by only +20.8 percent. This is not a good trend. This business person, Mary, should try to determine why the cost of goods sold has risen so rapidly by comparison to net sales.</p> <p>This is one example of how an entrepreneur can use financial analysis to find and to begin to solve any problems they may have. Let us look at another method of financial analysis.</p> <p>B. Transforming Business Financial Statements into Common-Size Financial Statements</p> <p>Another approach to the analysis of financial statements is to convert them into common-size statements. Convert every category from dollar terms to percentages. For the income statement, net sales represent a value of 100 percent; calculate all other categories so that the categories sum to the net sales percentage (100%). For a balance sheet, give the total assets or liabilities a value of 100 percent, and calculate all other categories as percentages of the total assets or liabilities. When you convert statements to this form, it is relatively easy to note the percentage that each category represents of the total.</p> <p>As an example you can see that Cost of Goods Sold for Hal's Haberdashery¹ represented 63.9 percent of Sales. This information is useful, but a better use of this method exists.</p>	<p>Show TP 5A and distribute HO 1A, Hal's Haberdashery, Profit and Loss Statement (Income Statement).</p> <p>Use TP 5A for emphasis.</p>

Content	Process
<p>C. Conducting Trend Analysis on A Business' Common Size Financial Statements</p> <p>For best use of this technique, convert more than one years' financial statements to the common-size format. Comparisons of these percentages over the years can point out areas that require attention.</p> <p>Look at these financial statements from (a Polish business). Let us begin work with them now.</p> <p>There is another use for common-size financial statement analysis. These statements are especially helpful in developing scenarios and proforma statements, since they provide a series of historical relationships (for example, cost of goods sold to sales, interest expense to sales, and inventories as a percent of assets). Here is an example of a projection of monthly cash flows. As you see it has been, and should be performed in dollars. However, when employing projected income statements and balance sheets to improve performance, projected statements developed in a common-size format may be more useful.</p>	<p>Display TP 5C and distribute HO 1C (Dynachron) to illustrate common-size statements prepared for multiple years.</p> <p>Find financial statements from a Polish company from two or three years. With them you can do one of two things. The first alternative is to analyze them before this unit is presented to show your students the results you found. They can then interpret your results. The second alternative is to have the participants analyze the statements during this session. They can then interpret their own results.</p> <p>Display TP 5D and distribute HO 1D.</p>
<p>D. Calculating Ratios from A Business' Financial Statements</p> <p>There is another method of financial analysis, ratio analysis. These are examples of some basic ratio analyses that have been performed of Dynachron¹. We can refer back to them later, however, now let us discuss the purpose of ratio analysis, outline the calculations, and establish some basic standards for comparison.</p> <p>Ratio analysis is another common method of financial analysis employed to allow businesses to find problems in their businesses. Four basic areas of company per-</p>	<p>Show TP 5E and distribute HO 1E.</p>

Content	Process
<p>formance are the typical focus of ratio analysis: liquidity ratios, activity ratios, leverage ratios, and profitability ratios.</p> <p>Liquidity ratios indicate the business' capacity for meeting its short-run or near-term debts. In other words, these ratios help to determine whether the business has enough working capital (current assets - current liabilities) to get by, pay its bills, invest in the future, take advantage of immediate opportunities, and fight off unforeseen short-run crises. Activity ratios offer insight into how effectively the firm is using its resources. Leverage ratios indicate the extent to which the firm's capital is secured through internal (owners or stockholders) or external (lenders) money. These figures become quite critical when undergoing growth or expansion. Here, the ability to raise further capital may be affected by the present leverage position. Profitability ratios are concerned with measuring the firm's financial performance and financial returns. These ratios are important, both for a comparison to other similar businesses, and an internal trend perspective. Particularly significant deviations from what is expected or strong negative movements in the internal trend may signal that the economic viability of the business is in serious question. In short, these ratios give a quick, "bottom line" picture of the firm's current financial results.</p> <p>Here you can examine the actual formulae.</p> <p>Look now at the financial statements that you have for (a Polish business). Let us perform or interpret the ratio analyses technique with these. You can see what the formulae are. Let us now work with them for (a Polish business).</p>	<p>Display TP 6. Use these for illustration through this and the next section of this unit.</p> <p>Display TP 7 and distribute HO 2.</p> <p>Use the same financial statements from a Polish company from two or three years that you provided earlier. With them you can do one of two things. The first alternative is to analyze them before this unit is presented to show your students the results you found. They can then interpret</p>

Content	Process
<p>(When the computations have been completed). The interpretation of the figures is much more important than the computations.</p> <p>E. Interpreting the Results of Ratio Analysis</p> <p>Let us begin by interpreting the liquidity ratios. The current ratio is derived by dividing current assets by current liabilities. Many experts feel that a current ratio of 2 should be present. Yet, this is only a general guideline and it could vary from one type of business to another. It is important, though, for some benchmark to be established. For example, if a business is one where the bulk of sales are on credit, a larger current ratio may be appropriate. It is important to look at changes that have occurred in the current ratio over the years. When the current ratio is very high, the business should consider some more productive use of cash and/or some distribution of cash to the owners or stockholders. The acid test ratio is computed by dividing the sum of cash, receivables, and marketable securities by current liabilities. Since inventories may not be easily converted to cash, this ratio gives a more accurate picture of the business' ability to act quickly to opportunities or emergencies. Although there can be much variation from type of business to type of business, an acid test of 1 is desirable.</p> <p>The next category of ratios is activity ratios. Inventory turnover is computed by dividing cost of goods sold by average inventory. Again, there can be differences in an appropriate number because of the differences between types of businesses. In general many experts believe that inventory turnover is linked closely to the "shelf life" of the product, i.e., how long</p>	<p>your results. The second alternative is to have the participants analyze the statements during this session. They can then interpret their own results.</p> <p>With each ratio, first explain the general concept behind the ratio formula and then discuss the specific calculations from the business you have chosen.</p> <p>Through this segment of the unit, examine and discuss the actual ratios that have been calculated. Be sure to emphasize the importance of observing if the business is improving or deteriorating by observing the changes in the ratios from year to year. For example, if inventory turnovers change from 6 to 12 over a years time, this is a dramatic improvement.</p>

Content	Process
<p>until the product has spoiled. For example, a baker selling fresh bread should have 365 inventory turnovers per year. On the other hand, a person selling coal could have only 12 turns per year and have an excellent business. The coal will not spoil; the bread will spoil. Regardless of the type of product, the inventory turnover figure helps you to monitor how effectively you are using money. Money tied up in inventory typically depreciates in value rather than gains. A larger number is always better than a smaller number for this ratio.</p> <p>Total asset turnover is computed by dividing sales by total assets. This contrasts the change in sales to the change in assets. A larger number is always better than a smaller number for this ratio. Accounts receivable turnover is computed by dividing annual credit sales by average accounts receivable. Accounts receivable turnover indicates the time it takes to collect money from credit sales. This figure should be monitored carefully because it indicates if the entrepreneur is collecting the money rapidly enough. A larger number is more desirable in this case. Most experts say that inventory turnover is also linked to the "shelf life" of the product, i.e., how long until the product has spoiled. For example, a baker selling fresh bread should have 365 accounts receivable turnovers per year (all customer pay cash!). On the other hand, a person selling furniture could have only 12 accounts receivable turns per year and have an excellent business. The furniture will not spoil; the bread will spoil. Regardless of the type of product, quick collections of accounts receivable are best. Average collection period provides the same information as accounts receivable turnover in a different format. Look at the formula. It shows how many days</p>	<p>Continue discussing the results that have been calculated for the Polish business that you have chosen for an example.</p>

Content	Process
<p>were required, on average, to collect money for credit sales. Smaller numbers are always better. Usually a good target is to have an average collection period no more than ten days greater than the terms you offer on credit sales.</p> <p>Leverage ratios make up the next category of ratios, the first of which is the debt to assets ratio. It is a measure of the percentage of assets that are funded through debt. A ratio that is too high may be risky while one that is too low may indicate inefficient use of capital. Typically if there is a balance between the monetary value of assets and the monetary amount of debt, the business is in reasonable condition. The debt to equity ratio is computed by dividing total debt by total owners equity. This ratio indicates the extent to which funds have been generated by the owners. If this ratio is greater than one, the creditors are at greater risk than the business owners. If the ratio is less than one, the business owners are at greater risk than the creditors. What is good for this ratio depend on whether the judge is a creditor or an owner!</p> <p>The final broad category of ratios is the profitability ratios. These ratios give a quick, bottom line picture of the business' current financial results. Gross profit margin is computed by subtracting cost of goods sold from sales and dividing the result by sales. This ratio indicates how the selling activity provides the margin to cover operating costs and leave a balance of profit. Most businesses want this number to be as large as possible. The other profitability ratio, return on total assets ratio, is calculated by dividing net income from operations by average total assets. This ratio measures the firm's operating performance. In other words, this figure notes the rate of return received for the</p>	<p>Continue to reference the ratios generated with the financial statements of the Polish business that you have chosen.</p>

Content	Process
<p>total investment made by creditors and owners. Creditors and investors wish for this number to be large.</p> <p>The owner's knowledge and awareness of the business may be necessary to either temper or augment what the measures project. Good sense and perspective must be used in conjunction with the objective figures and computations. There is another perspective for evaluation.</p> <p>F. The Future for Poland: Published Industrial Standards for Comparison within an Industry</p> <p>Examining the trend within a company's ratios can provide much useful information. However if there were published standards of ratios that had been specialized by industry, even better judgement could be made with ratios. By studying ratios from across an entire industry and comparing your business to other similar businesses, you would have much better knowledge of the condition of your business. This would also be interesting to potential partners or investors.</p> <p>In some countries, there are a limited number of businesses that specialize in collection and publication of financial ratio standards segregated by industry type. This means that very good, average and poor ratios are computed and published for each industry such as, retail grocery, clothing manufacturing, hotel and lodging, steel manufacturing, etc.</p> <p>Although standards such as these are not published for Poland at this time, they may be available in the future. This is a wonderful opportunity for an ambitious Polish business person.</p>	

*Phillips' Pharmacy
Income Statement
For the Month of October 19XX*

Sales	\$ XXXX
Less: Cost of Goods Sold	
Gross Profit	
Sales and Admin. Expenses	
Net Income	\$ XXXX

Waedt, Fred. Part 2 - "Analyzing and Interpreting Financial Information." *Financial Management for Small Business*. Small Business Development Center, University of Wisconsin, p. 26. © The University of Wisconsin System. Translated and used with permission.

Cost of Goods Sold

Beginning inventory of merchandise	\$ XXXX
Add: Purchases	
Cost of goods available for sale	
Less: Ending inventory of merchandise	
Cost of Goods Sold	\$ XXXX

Waedt, Fred. Part 2 - "Analyzing and Interpreting Financial Information." *Financial Management for Small Business*. Small Business Development Center, University of Wisconsin, p. 27. © The University of Wisconsin System. Translated and used with permission.

Cost of Goods Manufactured

Beginning goods in process inventory	\$ XXXX
Raw materials used:	
Beginning raw materials inventory	\$ XXXX
Add: Purchases of raw materials	
Raw materials available for use	
Less: Ending raw materials inventory	
Cost of raw materials used	\$ XXXX
Direct labor	
Factory overhead	
Total manufacturing costs	
Total cost of goods in process during the year	\$ XXXX
Less: Goods in process inventory, end of year	
Cost of Goods Manufactured	\$ XXXX

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***Phillips' Pharmacy
Balance Sheet
December 31, 19XX***

CURRENT ASSETS

Cash
Accounts Receivable
Merchandise Inventory
Total Current Assets

FIXED ASSETS

Office Equipment
Delivery Vehicle
Less Accumulated Dept.
Land
Total Fixed Assets

Total Assets

CURRENT LIABILITIES

Accounts Payable
Accrued Interest
Accrued Salaries
Notes Payable
Total Current Liabilities

LONG-TERM LIABILITIES

Mortgage Payable
Total Long-term Liab.
Total Liabilities

EQUITIES

Pete Phillips, Capital

Total Liab. & Equity

Waedt, Fred. Part 2 - "Analyzing and Interpreting Financial Information." Financial Management for Small Business. Small Business Development Center, University of Wisconsin. © The University of Wisconsin System. Translated and used with permission.

Hal's Haberdashery
Profit and Loss Statement
For the Year Ended December 31, 19--

		<u>%</u>
Operating Revenue		
Sales	\$361,815	100.00
Less Sales Returns and Allowances	<u>6,513</u>	1.80
Net Sales	\$355,302	98.20
Cost of Goods Sold		
Merchandise Inventory @ January 1	\$54,272	15.00
Purchases	\$249,652	69.00
Less:		
Purchases Returns/Allowances	\$4,523	
Purchases Discount	<u>9,045</u> <u>13,568</u>	3.75
Net Purchases	<u>236,084</u>	65.25
Merchandise Available for Sale	290,356	
Less:		
Merchandise Inventory Dec. 31	<u>59,156</u>	16.35
Cost of Goods Sold	<u>231,200</u>	63.90
Gross Margin on Sales	\$124,102	34.30
Operating Expenses		
Salaries and Commissions Expense	\$38,352	10.60
Rent Expense	12,000	3.32
Advertising Expense	9,407	2.60
Bank Credit Card Expense	8,249	2.28
Uncollectible Accounts Expense	5,889	1.63
Payroll Taxes Expense	5,602	1.55
Heating and Electric Expense	1,924	.53
Depreciation Expense	1,869	.52
Telephone Expense	1,788	.49
Supplies Expense	1,617	.45
Insurance Expense	576	.16
Miscellaneous Expense	<u>1,322</u>	.37
Total Operating Expenses	<u>88,595</u>	24.49
Operating Income	\$35,507	9.81
Other Expenses		
Interest Expense	<u>5,750</u>	1.59
Net Income or (Loss)	<u>\$29,757</u>	8.22

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Mary's Mailing Services
Comparative Profit and Loss Statement
For the Years Ended December 31, 1989 and 1988

	<u>Year Ended Dec. 31, 1989</u>	<u>Year Ended Dec. 31, 1988</u>	<u>% Changed</u>
Net Sales	\$84,623	\$70,033	+20.8
Less Cost of Goods Sold	<u>49,283</u>	<u>37,742</u>	+30.6
Gross Margin on Sales	\$35,340	\$32,291	+9.4
General and Administrative Expenses	6,741	5,970	+12.9
Operating Expenses	<u>12,222</u>	<u>10,824</u>	+12.9
Operating Income	\$16,377	\$15,497	+5.7
Other Revenue			
Interest Income	836	795	+5.2
Rental Income	<u>3,600</u>	<u>3,300</u>	+9.1
	\$20,813	\$19,592	+6.2
Other Expenses			
Interest Expense	<u>2,750</u>	<u>3,125</u>	-12.0
Earnings Before Income Tax	\$18,063	\$16,467	+9.7
Less Provision for Income Tax	<u>5,780</u>	<u>5,269</u>	+9.7
Net Income	<u>\$12,283</u>	<u>\$11,198</u>	+9.7

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Dynachron Plastics Mfg. Co.
Comparative Balance Sheet
December 31, 1989 and 1988

	December 31, <u>1989</u>	December 31, <u>1988</u>	%	
			<u>1989</u>	<u>1988</u>
<u>ASSETS</u>				
Current Assets:				
Cash	\$ 18,377	\$ 22,861	1.3	1.7
Accounts Receivable, Net ¹	256,021	194,355	18.1	14.6
Inventories				
Finished Goods	\$ 12,442	\$ 11,669		
Work in Process	191,609	149,008		
Materials	<u>15,488</u>	<u>8,615</u>	15.5	12.7
Total Current Assets	\$493,937	\$386,508	34.9	29.0
Long Term Assets:				
Land	\$212,560	\$212,560	15.0	15.9
Building, Net ²	189,340	194,816	13.4	14.6
Factory Equipment, Net ²	509,763	527,808	36.0	39.6
Delivery Equipment, Net ²	8,640	9,450	0.6	0.7
Office Equipment, Net	<u>2,214</u>	<u>1,818</u>	0.2	0.1
Total Long-Term Assets	<u>\$922,517</u>	<u>\$946,452</u>	65.1	71.0
Total Assets	<u>\$1,416,454</u>	<u>\$1,332,906</u>	100.0	100.0
<u>LIABILITIES</u>				
Current Liabilities:				
Notes Payable	\$100,000	\$100,000	7.1	7.5
Payroll Taxes Payable	14,809	13,263	1.0	1.0
Corporate Income Tax Payable	114,963	77,676	8.1	5.8
Accrued Interest Payable	7,475	8,280	0.5	0.6
Dividends Payable	<u>16,800</u>	<u>14,550</u>	1.2	1.1
Total Current Liabilities	\$254,047	\$213,769	17.9	16.0
Long-Term Liabilities				
Bonds Payable	<u>350,000</u>	<u>400,000</u>	24.7	30.0
Total Liabilities	\$604,047	\$613,759	42.6	46.0
<u>STOCKHOLDERS' EQUITY</u>				
Capital Stock				
(20,000 Shares Authorized, 15,000 Shares Issued)	\$525,000	\$525,000	37.1	39.4
Retained Earnings	<u>287,407</u>	<u>194,191</u>	20.3	14.6
Total Stockholders' Equity	\$812,407	\$719,191	57.4	54.0
Total Liabilities and Stockholder's Equity	<u>\$1,416,454</u>	<u>\$1,332,960</u>		

¹Net of the Allowance for Doubtful Accounts. ²Net of Accumulated Depreciation for Each Asset.

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CASH FLOW PROJECTION by Month, Year One

TP 5D1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
		October	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
22	Net Cash Flow	\$7,755	\$7,335	(\$15,304)	\$77	(\$304)	(\$30,176)	\$26,194	\$238	\$14,985	\$764	(\$14,034)	\$1,152	(\$1,318)
23														
24	Cummulative Cash Flow	\$7,755	\$15,090	(\$214)	(\$137)	(\$441)	(\$30,617)	(\$4,423)	(\$4,185)	\$10,800	\$11,564	(\$2,470)	(\$1,318)	
25														
26	Fixed Cash Disbursements													
27	Utilities	\$2,160												
28	Salaries	\$22,800												
29	Payroll Taxes and Benefits	\$2,850												
30	Office Supplies	\$300												
31	Maintenance and Cleaning	\$300												
32	Licenses	\$115												
33	Boxes, paper, etc.	\$400												
34	Telephone	\$1,020												
35	Miscellaneous	\$480												
36	Total:FCD/yr	\$30,425												
37	FCD/mo	\$2,535												
38														
39	Cash on Hand													
40	Opening Balance	\$2,150	\$9,905	\$17,240	\$1,936	\$2,013	\$1,709	(\$28,467)	(\$2,273)	(\$2,035)	\$12,950	\$13,714	(\$320)	
41	Cash Receipts	\$21,800	\$21,000	\$14,300	\$119,500	\$14,250	\$15,450	\$47,300	\$19,440	\$37,065	\$23,215	\$23,775	\$22,625	\$379,720
42	Cash Disbursements	\$14,045	\$13,665	\$29,604	\$119,423	\$14,554	\$45,626	\$21,106	\$19,202	\$22,080	\$22,451	\$37,809	\$21,473	\$381,038
43	Total New Balance	\$9,905	\$17,240	\$1,936	\$2,013	\$1,709	(\$28,467)	(\$2,273)	(\$2,035)	\$12,950	\$13,714	(\$320)	\$832	

CASH FLOW PROJECTION by Month, Year One

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		October	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Total
2	Cash Receipts													
3	Sales Receivables	\$2,000	\$1,350	\$1,350	\$1,750	\$1,850	\$2,000	\$2,300	\$2,300	\$2,800	\$3,500	\$3,750	\$3,750	\$28,700
4	Wholesale	\$2,600	\$2,650	\$3,450	\$3,750	\$4,000	\$4,700	\$4,700	\$5,600	\$7,100	\$7,550	\$7,550	\$6,400	\$60,050
5	Retail	\$9,700	\$9,500	\$9,500	\$9,000	\$8,400	\$8,750	\$10,300	\$11,540	\$12,165	\$12,165	\$12,475	\$12,475	\$125,970
6	Other Sources	\$7,500	\$7,500		\$105,000			\$30,000		\$15,000				\$165,000
7	Total Cash Recpts.	\$21,800	\$21,000	\$14,300	\$119,500	\$14,250	\$15,450	\$47,300	\$19,440	\$37,065	\$23,215	\$23,775	\$22,625	\$379,720
8	Cash Disburts.													
9	Cost of Goods	\$9,885	\$9,720	\$10,584	\$10,512	\$10,368	\$11,340	\$12,456	\$14,357	\$16,391	\$16,895	\$17,118	\$15,894	\$155,520
10	Variable Labor									\$604	\$796	\$796	\$604	\$2,800
11	Advertising	\$1,000	\$400	\$400	\$400	\$400	\$400	\$4,555	\$400	\$400	\$400	\$400	\$400	\$9,555
12	Insurance		\$300			\$300			\$300			\$300		\$1,200
13	Legal and Accounting			\$375			\$375			\$375			\$375	\$1,500
14	Delivery Expenses	\$75	\$75	\$75	\$100	\$75	\$100	\$150	\$200	\$200	\$250	\$250	\$250	\$1,800
15	Fixed Cash Disbursements	\$2,535	\$2,535	\$2,535	\$2,535	\$2,535	\$2,535	\$2,535	\$2,535	\$2,535	\$2,535	\$2,535	\$2,540	\$30,425
16	Mortgage (rent)	\$550	\$550	\$550	\$876	\$876	\$876	\$876	\$876	\$876	\$876	\$867	\$876	\$9,534
17	Term Loan							\$534	\$534	\$534	\$534	\$534	\$534	\$3,204
18	Line of Credit		\$85	\$15,085						\$165	\$165	\$15,000		\$30,500
19	Other (see notes)				\$105,000		\$30,000							\$135,000
20	Total Cash Disb.	\$14,045	\$13,665	\$29,604	\$119,423	\$14,554	\$45,626	\$21,106	\$19,202	\$22,080	\$22,451	\$37,809	\$21,473	\$381,038
21														

Dynachron Plastics Mfg. Co.
DSO Calculation
Year Ended December 31, 1989

3 Calculations Required:

1. **Average Accounts Receivable (A/R) Balance** = $\frac{\text{A/R @ Beginning of 1989} + \text{A/R @ End of 1989}}{2}$

2. **Accounts Receivable (A/R) Turnover** = $\frac{\text{Credit Sales in 1989}}{\text{Average A/R Balance}}$

3. **Days of Sales (DSO)** = $\frac{360}{\text{A/R Turnover}}$

1. Average Accounts Receivable (A/R) Balance:

A/R @ Beginning of 1989 = \$194,355

A/R @ End of 1989 = 256,021

$\$450,376 \div 2 = \$255,188 = \text{Average A/R Balance}$

2. **Accounts Receivable (A/R) Turnover** = $\frac{\$2,093,689}{\$ 225,188} = 9.2975$

3. **Days of Sales (DSO)** = $\frac{360}{9.2975} = 38.72$ or Approximately 39 Days.

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Financial Ratio Analysis

LIQUIDITY RATIOS

Current Ratio

Acid Test Ratio

ACTIVITY RATIO

Inventory Turnover

Total Asset Turnover

Account Receivable Turnover

Average Collection Period

LEVERAGE RATIO

Debt to Asset Ratio

Debt to Equity Ratio

PROFITABILITY RATIOS

Gross Profit Margin

Return on Total Assets

Conclusions ?

Financial Ratio Analysis

LIQUIDITY RATIOS

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Acid Test ("Quick") Ratio} = \frac{\text{Cash} + \text{Receivables} + \text{Marketable Securities}}{\text{Total Current Liabilities}}$$

ACTIVITY RATIO

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$\text{Total Asset Turnover} = \frac{\text{Sales}}{\text{Average Total Assets}}$$

$$\text{Account Receivable Turnover} = \frac{\text{Annual Credit Sales}}{\text{Average Accounts Receivable}}$$

$$\text{Average Collection Period} = \frac{365}{\text{Accounts Receivable Turnover}}$$

LEVERAGE RATIO

$$\text{Debt to Asset Ratio} = \frac{\text{Total Debt ("Liabilities")}}{\text{Total Assets}}$$

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt ("Liabilities")}}{\text{Owner's Equity}}$$

(Debt to "worth")

PROFITABILITY RATIOS

$$\text{Gross Profit Margin} = \frac{\text{Sales} - \text{Cost of Goods Sold}}{\text{Sales}}$$

$$\text{Return on Total Assets} = \frac{\text{Net Income ("Profit")}}{\text{Average Total Assets}}$$

Hal's Haberdashery
Profit and Loss Statement
For the Year Ended December 31, 19--

		<u>%</u>
Operating Revenue		
Sales	\$361,815	100.00
Less Sales Returns and Allowances	<u>6,513</u>	1.80
Net Sales	\$355,302	98.20
Cost of Goods Sold		
Merchandise Inventory @ January 1	\$54,272	15.00
Purchases	\$249,652	69.00
Less:		
Purchases Returns/Allowances	\$4,523	
Purchases Discount	<u>9,045</u> <u>13,568</u>	3.75
Net Purchases	<u>236,084</u>	65.25
Merchandise Available for Sale	290,356	
Less:		
Merchandise Inventory Dec. 31	<u>59,156</u>	16.35
Cost of Goods Sold	<u>231,200</u>	63.90
Gross Margin on Sales	\$124,102	34.30
Operating Expenses		
Salaries and Commissions Expense	\$38,352	10.60
Rent Expense	12,000	3.32
Advertising Expense	9,407	2.60
Bank Credit Card Expense	8,249	2.28
Uncollectible Accounts Expense	5,889	1.63
Payroll Taxes Expense	5,602	1.55
Heating and Electric Expense	1,924	.53
Depreciation Expense	1,869	.52
Telephone Expense	1,788	.49
Supplies Expense	1,617	.45
Insurance Expense	576	.16
Miscellaneous Expense	<u>1,322</u>	.37
Total Operating Expenses	<u>88,595</u>	24.49
Operating Income	\$35,507	9.81
Other Expenses		
Interest Expense	<u>5,750</u>	1.59
Net Income or (Loss)	<u>\$29,757</u>	8.22

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Mary's Mailing Services
Comparative Profit and Loss Statement
For the Years Ended December 31, 1989 and 1988

	<u>Year Ended</u> <u>Dec. 31, 1989</u>	<u>Year Ended</u> <u>Dec. 31, 1988</u>	<u>% Changed</u>
Net Sales	\$84,623	\$70,033	+20.8
Less Cost of Goods Sold	<u>49,283</u>	<u>37,742</u>	+30.6
Gross Margin on Sales	\$35,340	\$32,291	+9.4
General and Administrative Expenses	6,741	5,970	+12.9
Operating Expenses	<u>12,222</u>	<u>10,824</u>	+12.9
Operating Income	\$16,377	\$15,497	+5.7
Other Revenue			
Interest Income	836	795	+5.2
Rental Income	<u>3,600</u>	<u>3,300</u>	+9.1
	\$20,813	\$19,592	+6.2
Other Expenses			
Interest Expense	<u>2,750</u>	<u>3,125</u>	-12.0
Earnings Before Income Tax	\$18,063	\$16,467	+9.7
Less Provision for Income Tax	<u>5,780</u>	<u>5,269</u>	+9.7
Net Income	<u>\$12,283</u>	<u>\$11,198</u>	+9.7

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Dynachron Plastics Mfg. Co.
Comparative Balance Sheet
December 31, 1989 and 1988

	December 31, <u>1989</u>	December 31, <u>1988</u>	<u>%</u> 1989 1988	
<u>ASSETS</u>				
Current Assets:				
Cash	\$ 18,377	\$ 22,861	1.3	1.7
Accounts Receivable, Net ¹	256,021	194,355	18.1	14.6
Inventories				
Finished Goods	\$ 12,442	\$ 11,669		
Work in Process	191,609	149,008		
Materials	<u>15,488</u>	<u>8,615</u>	15.5	12.7
Total Current Assets	\$493,937	\$386,508	34.9	29.0
Long Term Assets:				
Land	\$212,560	\$212,560	15.0	15.9
Building, Net ²	189,340	194,816	13.4	14.6
Factory Equipment, Net ²	509,763	527,808	36.0	39.6
Delivery Equipment, Net ²	8,640	9,450	0.6	0.7
Office Equipment, Net	<u>2,214</u>	<u>1,818</u>	0.2	0.1
Total Long-Term Assets	<u>\$922,517</u>	<u>\$946,452</u>	65.1	71.0
Total Assets	<u>\$1,416,454</u>	<u>\$1,332,906</u>	100.0	100.0
<u>LIABILITIES</u>				
Current Liabilities:				
Notes Payable	\$100,000	\$100,000	7.1	7.5
Payroll Taxes Payable	14,809	13,263	1.0	1.0
Corporate Income Tax Payable	114,963	77,676	8.1	5.8
Accrued Interest Payable	7,475	8,280	0.5	0.6
Dividends Payable	<u>16,800</u>	<u>14,550</u>	1.2	1.1
Total Current Liabilities	\$254,047	\$213,769	17.9	16.0
Long-Term Liabilities				
Bonds Payable	<u>350,000</u>	<u>400,000</u>	24.7	30.0
Total Liabilities	\$604,047	\$613,759	42.6	46.0
<u>STOCKHOLDERS' EQUITY</u>				
Capital Stock				
(20,000 Shares Authorized, 15,000 Shares Issued)	\$525,000	\$525,000	37.1	39.4
Retained Earnings	<u>287,407</u>	<u>194,191</u>	20.3	14.6
Total Stockholders' Equity	\$812,407	\$719,191	57.4	54.0
Total Liabilities and Stockholder's Equity	<u>\$1,416,454</u>	<u>\$1,332,960</u>		

¹Net of the Allowance for Doubtful Accounts. ²Net of Accumulated Depreciation for Each Asset.

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CASH FLOW PROJECTION by Month, Year One

HO 3-1D (continued)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
		October	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
22	Net Cash Flow	\$7,755	\$7,335	(\$15,304)	\$77	(\$304)	(\$30,176)	\$26,194	\$238	\$14,985	\$764	(\$14,034)	\$1,152	(\$1,318)
23														
24	Cummulative Cash Flow	\$7,755	\$15,090	(\$214)	(\$137)	(\$441)	(\$20,617)	(\$4,423)	(\$4,185)	\$10,800	\$11,564	(\$2,470)	(\$1,318)	
25														
26	Fixed Cash Disbats													
27	Utilities	\$2,160												
28	Salaries	\$22,800												
29	Payroll Taxes and Benefits	\$2,850												
30	Office Supplies	\$300												
31	Maintenance and Cleaning	\$300												
32	Licenses	\$115												
33	Boxes, paper, etc.	\$400												
34	Telephone	\$1,020												
35	Miscellaneous	\$480												
36	Total:FCD/yr	\$30,425												
37	FCD/mo	\$2,535												
38														
39	Cash on Hand													
40	Opening Balance	\$2,150	\$9,905	\$17,240	\$1,936	\$2,013	\$1,709	(\$28,467)	(\$2,273)	(\$2,035)	\$12,950	\$13,714	(\$320)	
41	Cash Receipts	\$21,800	\$21,000	\$14,300	\$119,500	\$14,250	\$15,450	\$47,300	\$19,440	\$37,065	\$23,215	\$23,775	\$22,625	\$379,720
42	Cash Disbursements	\$14,045	\$13,665	\$29,604	\$119,423	\$14,554	\$45,626	\$21,106	\$19,202	\$22,060	\$22,451	\$37,809	\$21,473	\$381,038
43	Total New Balance	\$9,905	\$17,240	\$1,936	\$2,013	\$1,709	(\$28,467)	(\$2,273)	(\$2,035)	\$12,950	\$13,714	(\$320)	\$832	

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Dynachron Plastics Mfg. Co.
DSO Calculation
Year Ended December 31, 1989

3 Calculations Required:

1. **Average Accounts Receivable (A\R) Balance** =
$$\frac{\text{A/R @ Beginning of 1989} + \text{A/R @ End of 1989}}{2}$$

2. **Accounts Receivable (A\R) Turnover** =
$$\frac{\text{Credit Sales in 1989}}{\text{Average A\R Balance}}$$

3. **Days of Sales (DSO)** =
$$\frac{360}{\text{A\R Turnover}}$$

1. Average Accounts Receivable (A/R) Balance:

$$\begin{aligned} \text{A/R @ Beginning of 1989} &= \$194,355 \\ \text{A/R @ End of 1989} &= \underline{256,021} \\ &\$450,376 \div 2 = \$225,188 = \text{Average A/R Balance} \end{aligned}$$

2. **Accounts Receivable (A/R) Turnover** =
$$\frac{\$2,093,689}{\$ 225,188} = 9.2975$$

3. **Days of Sales (DSO)** =
$$\frac{360}{9.2975} = 38.72 \text{ or Approximately 39 Days.}$$

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Financial Ratio Analysis

LIQUIDITY RATIOS

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Acid Test ("Quick") Ratio} = \frac{\text{Cash} + \text{Receivables} + \text{Marketable Securities}}{\text{Total Current Liabilities}}$$

ACTIVITY RATIO

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$\text{Total Asset Turnover} = \frac{\text{Sales}}{\text{Average Total Assets}}$$

$$\text{Account Receivable Turnover} = \frac{\text{Annual Credit Sales}}{\text{Average Accounts Receivable}}$$

$$\text{Average Collection Period} = \frac{365}{\text{Accounts Receivable Turnover}}$$

LEVERAGE RATIO

$$\text{Debt to Asset Ratio} = \frac{\text{Total Debt ("Liabilities")}}{\text{Total Assets}}$$

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt ("Liabilities")}}{\text{Owner's Equity}}$$

(Debt to "worth")

PROFITABILITY RATIOS

$$\text{Gross Profit Margin} = \frac{\text{Sales} - \text{Cost of Goods Sold}}{\text{Sales}}$$

$$\text{Return on Total Assets} = \frac{\text{Net Income ("Profit")}}{\text{Average Total Assets}}$$

TAX INFORMATION, STRATEGY, AND ANALYSIS

UNIT 4

Title: TAX INFORMATION, STRATEGY, AND ANALYSIS

Purpose: This unit profiles the characteristics of the business tax system, develops and discusses possible ethical tax minimization strategies, and informs participants about sources of information on tax laws.

Objective: To outline the characteristics of the business tax system, to present ethical tax minimization strategies, and to share sources of tax law information.

Materials:

Transparencies:

Transparency 1	Selected Tax Obligations
Transparency 2	Dimensions That Determine Tax Status
Transparency 3	Tax Minimization Versus Tax Avoidance
Transparency 4	What Tax Savings May Mean to the Entrepreneur
Transparency 5	Legitimate Tax Minimization Strategy
Transparency 6	True Costs of Excessive Tax Monitoring and Calculating
Transparency 7	Self or Professional Tax Preparation
Transparency 8	Free or Low-Cost Sources of Basic Tax Information

Meaningful transparencies should be derived from information gained from Polish tax accountants, specialists, or experts. You must augment to transparencies provided in this packet.

Handouts:

Handout 1	Selected Tax Obligations
Handout 2	Dimensions That Determine Tax Status (Requirements and Responsibilities)
Handout 3	Tax Minimization Versus Tax Avoidance
Handout 4	What Tax Savings May Mean to the Entrepreneur
Handout 5	Legitimate Tax Minimization Strategy
Handout 6	True Costs of Excessive Tax Monitoring and Calculating
Handout 7	Free or Low-Cost Sources of Basic Tax Information

Meaningful handouts should be composed from information gained from Polish tax accountants, specialists, or experts. To make this unit genuinely meaningful customized Polish handouts should be added.

Reading: "Taxes"

Characteristics features of the Polish tax system
Tax organs and tax procedure
Taxes being in force in Poland in 1992

Class Exercises:

Meaningful class exercise should be acquired through Polish tax accountants, specialists, or experts. Some outlines and suggestions have been devised to use as guidelines for these exercises.

Product:

Taxes that are possible in Poland for businesses
Business tax status determination
Tax forms, procedures and timing
Basic tax computations
Pros and cons of exhaustive tax minimization
Simple tax minimization techniques (and effects)
Costs associated with exhaustive tax minimization
Self computation compared to professional computations
Sources of tax law information

Assignments:

Discuss the business taxes
Develop and discuss tax status
Procure, distribute and discuss tax forms, procedures and deadlines
Demonstrate basic tax computations
Discuss the pros and cons of extensive tax minimization
Present some simple tax minimization techniques (computer spreadsheet packages would be incorporated to illustrate effects of different tax alternatives)
Show the potentially high costs of exhaustive tax minimization
Present the advantages and disadvantages of self or professional tax preparation
Discuss some sources of tax information

Notes to Instructor:

It will be vital for instructors to devise materials that apply specifically to the Polish tax system.

Instructors should acquire a variety of tax forms in order to distribute them to the participants.

This Unit provides you a couple of good opportunities to use computer spreadsheets to give "what if" types of demonstrations. Alternative tax implications or effects make meaningful presentation materials for many people.

It is strongly advised that instructors invite a tax accountant, specialist, or expert to discuss much of this material with class participants. One way to encourage the tax person to attend and be active in the class is to point out that the participants would all be potential customers for their own business.

This could become an extremely popular unit with participants and potential participants. Each instructor will need to spend more time developing this unit, but the outcomes could be very rewarding.

Instructors should adjust times to meet the needs of their participants.

Instructors should provide the summary remarks and preview the next unit.

Estimated time:

Types of taxes	30 minutes
Tax-related business status	60 minutes
Tax forms & deadlines	60 minutes
Pros & cons of tax minimization	40 minutes
Class break	30 minutes
Practical tax minimization	60 minutes
Costly excessive tax minimization	60 minutes
Self or professional tax preparation	30 minutes
Tax information resources	30 minutes

Content	Process
<p>Introduction</p> <p>This unit will not make you a tax expert, however, it should make you a wiser consumer of a tax expert's services. We will achieve several outcomes with this unit.</p> <p>First, we will discuss some of the typical tax obligations that you will face as a business person. There are a variety of tax obligations some of which apply to all businesses and some are unique to only certain types of businesses. In any case, some general business characteristics determine which types of taxes you are obliged to pay.</p> <p>Some basic taxes do apply to everyone and so we will examine the forms (paperwork) and deadlines associated with there. Further we go through some of the basic computations for an imaginary Polish business.</p> <p>Whenever you or your accountant compute your tax obligation, it is only reasonable to expect that you would think of how you could legally lower your tax obligation. This is called "tax minimization." The benefits of tax minimization are immediately obvious to you. Unfortunately tax minimization can involve significant costs of time and money.</p> <p>Yes, we will examine simple steps to minimize taxes, but there is a point of time and effort expended past which it is unprofitable to go. There is a law of diminishing returns for work toward tax minimization.</p> <p>One of the last topics in this Unit is a presentation on the benefits and cost of (a) preparing and computing your own</p>	<p>In this unit, you as the instructor may serve more as a facilitator or source of general information than anything else. If you have a high level of expertise in the current Polish tax system, you will probably not require much consultation or assistance from other people. You probably would want to arrange for a tax expert to visit your class if you do not have a high level of knowledge about the current Polish tax system.</p> <p>The materials that have been provided here are a general overview of taxation. Supplementary materials must be developed.</p> <p>Emphasis to participants that almost all businesses pay some taxes such as</p> <ul style="list-style-type: none"> employee taxes inventory taxes (end of year) turnover taxes <p>in addition to income taxes. Do not focus exclusively on income taxes in your discussions and examples. One possible example for wise tax, minimization strategy is the times of payments on the employee taxes (in U.S., a certainty of benefit) and on timing of reduced-prices sales to reduce inventory taxes.</p>

Content	Process
<p>taxes versus, (b) hiring a professional to compute and prepare your taxes. The final points in the unit are suggestions about where to find tax information.</p> <p>It should not discourage anyone that it is impossible to know everything about taxes. It is beneficial to understand the characteristics of how the system works. This is the first step to operating your business within the tax system successfully.</p> <p>A. The Business Tax System in Poland</p> <p>Let us discuss some of the taxes that would apply to our businesses. Some of them are income taxes, employment taxes, unemployment taxes, turnover taxes, property taxes, inventory taxes, value added taxes, or excise taxes.</p> <p>All of us realize that we wish to pay the minimum of taxes that our businesses are obliged to pay. What specifically are some of the taxes that would apply to your business? To answer this question there are several questions that you must ask yourself. For example the taxes that you are obliged to pay will depend on the legal form of your business (proprietorship, partnership, or limited liability) and if you do business domestically or across borders.</p> <p>B. Business Tax Status</p> <p>As we mentioned the legal form of your business and while you have an exclusively domestic business will probably affect the tax you must pay, forms that you must file,</p>	<p>Display TP 1 or one similar to it that has been adapted more specifically to the Polish tax system. Distribute HO 1 so that students may discuss and annotate the handout.</p> <p>Encourage discussion among the participants about different taxes and general characteristics of the tax system.</p> <p>You should find and add supplementary material that is suited for the Polish tax system.</p> <p>Give participants HO 2.</p> <p>Display TP 2. Use a transparency marker to add other business characteristics that</p>

Content	Process
<p>and the tax deadlines that you must meet. Other business dimensions such as size, number of employees, state operated or private could affect your tax responsibilities.</p> <p>Regardless of which categories fit your business, there are some taxes for which every business is liable. Here are some of the forms required by these common taxes. Let us examine these forms, discuss the fundamental procedures, and timing requirements.</p> <p>C. Some Tax Forms, Procedures, and Filing Deadlines</p> <p>Here are some of the forms used to file the taxes that most of our businesses will owe. These forms must be filed for _____ taxes.</p> <p>Please take some time to look at them in some detail.</p> <p>Although the requirements of these forms may initially seem baffling, if the instructions are read and followed carefully, the filing requests and procedures are logical. Let us select one of the most common forms of tax that we all as business persons must pay. It is the _____ tax. Now look at the form(s) necessary to file this tax with the government. Or next task will be to show how the calculations</p>	<p>commonly affect tax status in Poland. Encourage discussions.</p> <p>Almost all businesses are liable for employee taxes or inventory taxes and for a certainty turnover taxes. Individuals or business entities will also be liable for income taxes. Select some of these most commonly-owed tax as example. Acquire forms (required paper work) for these types of taxes.</p> <p>Forms for the taxes that almost all businesses must pay should be acquired in advance and distributed at this time. Use the utmost effort to be sure that each participant can at least see several different commonly used tax forms.</p> <p>Allow participants time to examine a few different forms briefly.</p> <p>Select the most commonly required tax of businesses. For this tax be certain that you have one set of forms for each two people. In this way it will not be difficult for the students to see the forms as you discuss and/or complete them.</p> <p>Prepare transparencies for each sheet of the forms while they are blank. Use an erasable transparency marker to fill in</p>

Content	Process
<p>are made and the tax forms are completed with a simple example.</p> <p>As you know I am not now providing information to you as an individual to use officially in your business.</p> <p>In other words I am not acting now as a tax or law consultant to you in a legally binding way. I am simply trying to show you helpful basic information about the tax system.</p>	<p>each section of the form while you discuss the form with the class.</p> <p>This may not be necessary in Poland, but it is required in the U.S. to avoid possible serious legal liabilities.</p> <p>In the U.S. a "disclaimer" must accompany talks such as this one because of the very strong accountants' and attorneys' unions. They may (in the U.S.) attempt to sue a teacher for "practicing" their profession without a license.</p>
<p>D. Basic Computations</p> <p>Now let us complete this form for our imaginary business, _____. The purpose in this exercise is to show you how to follow the instructions in an acceptable manner. Let us begin.</p> <p>As we complete this form, I will point out to you when and how often this tax must be filed. We will also discuss the documents that you should maintain in case there are any questions from the tax police.</p>	<p>Select one or more of the most commonly paid taxes to use in this (these) exercise(s).</p> <p>Go through each sheet of the form that you selected. Have the participants go through it with you step by step. Point out all the most important aspects. For this you may wish to consult with a tax expert or invite one to class. (Point out to the experts that in this way they may be able to recruit new clients.) Be certain to cover not only the forms that must be filed, but the filing deadlines and any supporting documentation that the tax payer must retain.</p> <p>This may take a significant amount of time.</p>
<p>E. Tax Minimization Versus Tax Avoidance</p> <p>Tax minimization is the technique of taking advantage of all the tax laws so that you pay not one penny (zloty) more than you owe. For example, you may be able to depreciate your capital assets (trucks, equipment, etc.) in more than one way. If so one technique may lower your tax bur-</p>	<p>In the U.S. this section of Unit 4 would be important. The same would be true in many other countries. Yes, taxes must be paid, however, if you overpay it is your own hard luck. It is the tax payers responsibility to demonstrate evidence to the tax police that they have paid all that they owe, but not one penny (zloty) more. This idea, tax minimization is legal. x</p>

Content	Process
<p>den substantially over the alternative depreciation technique. This is good, smart business and it is legal.</p> <p>Tax avoidance is the technique of not paying all the tax liability that you have to the government(s). For example, if a person receives a cash payment and the customer asks for no receipt the person might "forget" to record this revenue for the business. This is illegal. If the tax police are dedicated to their jobs, the consequences may be very serious for the tax avoider.</p> <p>Many of you have heard of Al Capone, the famous American gangster from Chicago. Yes? He was known to be involved with racketeering, gambling, extortion, prostitution, smuggling, and murder. The U.S. Federal Government finally convicted him for the rest of his life. What? Tax evasion. (The U.S. tax police are thorough and dedicated.)</p> <p>This is not meant to frighten you. But, remember. Pay the taxes that you rightfully owe but no more. As you can see from these simple examples a tax savings can have great effect on profits.</p> <p>To minimize your taxes, you must, for example, realize all the types of expenses that can legitimately be deducted from your revenues. You should also be aware of all the items that you may use as a business expense even though you or your family may receive some indirect benefit from the business expense. You must be aware of any advantages of the way a legal title to property is recorded or of any advantages in timing for a transaction. From time to time the government (any level, foreign or domestic) may institute programs, permanent or temporary, to re-</p>	<p>avoidance, not paying all the taxes you owe, is illegal.</p> <p>Show TP 3 and distribute HO 3.</p> <p>Note: In the United States, restaurant owners are notorious for this because most of their sales are in cash, often no receipt change hands, and the amount of money per sale is usually small.</p> <p>Show TP 4 and distribute HC 4 so that they can see in numbers the impacts that proper tax liability recognition may have.</p> <p>TP 5 is a screen intended for listing legitimate tax liability reducing items or techniques.</p> <p>Show TP 5 and for emphasis write in the points as you discuss them. Many instructors may find it necessary to consult with a Polish tax expert. You might want to invite the tax expert into your class. Caveat Emptor: You must keep control of the class and not allow an over enthusiastic tax expert (or anyone else) take control of the class from you. This event is a possibility.</p>

Content	Process
<p>duce your tax burden on _____.</p> <p>Let us now discuss some of the most commonly overlooked items that would legally reduce your tax liabilities. We will begin with simple points and move toward a few more complex ideas. Remember that this will not be an exhaustive presentation. It is impractical or impossible to review each type of tax advantage for each specialized area of business.</p> <p>F. Minimizing Tax Liabilities</p> <p>Clearly we have now composed some legal and appropriate ways that we may reduce tax liabilities. The best strategy to reduce tax burden is to use all these that are appropriate for your business.</p> <p>Let's return to the _____ imaginary business. As you can see need to minimize their taxes just like you. Let us now look at some different tax options they have through legal use of all advantages.</p>	<p>Distribute HO 5 so that the participants may annotate it during discussions.</p> <p>Encourage your students to give you points or information to add to TP 5. You may be surprised at how knowledgeable some of them will be in this area. In fact you may need to limit the discussion that ensues.</p> <p>In the U.S. two very common and relatively simple tax-impacting decisions are depreciation techniques and inventory valuation choices. As an example show a situation in which a business persons choice of one legitimation or another on any aspect of their business can affect their tax liability.</p> <p>This is the perfect place to use a spreadsheet from computer software that will adjust related cells, subtotals and totals when you change anyone cell. In this way participants may come to appreciate how wonderful and helpful some software can be not only in business "work" but in planning and recordkeeping. The computer can be an excellent labor-saving device when used in this way--, it saves tedious computation time!</p> <p>Actually pick a variety, simple to complex, of tax situations in which a business person would have choices to make that would affect their tax liability. According to the time allowed and class sophistication, choose from two to six examples.</p> <p>The optimum presentation is in real time where participants can watch the computer screen as and while you make the changes. You can always tell them about this and arrange it so that you can use the</p>

Content	Process
<p>G. Negative Aspects of Exhaustive Tax Manipulation</p> <p>As we discussed earlier, some tax legislation is temporary. To take full advantage of those situations it would be necessary for you to monitor legislation with great regularity (frequently). That will require a considerable amount of time and effort first to acquire the information.</p> <p>As you have seen it can also require a great amount of time and number of computation to discern options or alternatives that your business may have to minimize taxes. What would you have been working on if you would not have been making tax computations and speculating about different alternatives? How much per hour is your labor worth?</p> <p>Ah hah! This is a point that you must consider. Great "opportunity cost" is associated with any large amount of time, computations, or effort that you spend in attempting excessive tax manipulation! Your time and efforts might be directed better to your business (or your family).</p>	<p>computer themselves at another time and "play" with the numbers. Some of them may have PCs, lap tops or palm tops at home that they could use. Part of the people may prefer to do this exercise on their own equipment at home so they can experiment with tax effects of some decisions on their own business.</p> <p>If you do not have access to a PC you may use transparencies showing tax computations pre and post alternative tax decisions. Distribute copies to the class so that they may annotate them.</p> <p>Display TP 6 and give HO 6 to the participants. It is important that you inspire them to understand this point! (There are many other costs. For example, all time spent on taxes could cause a business person not to update themselves in their business specialization. Choices must be made with time.)</p> <p>Encourage the participants to add other possible disadvantages to them and their business of a too-deep involvement in monitoring and calculating taxes.</p>

Content	Process
<p>4. Your local tax officers have not been as helpful as you had hoped.</p> <p>5. You have no tax experts currently employed within your company.</p> <p>6. You cannot take the time away from your business and devote it to tax preparation and calculation.</p> <p>You are the only person who can decide which alternative is best for you. If you prefer self-preparation, there are cost; we showed that on HO 6. If you prefer professional-preparation, there are obvious costs, the fees you must pay for their services.</p> <p>Regardless of which alternative is better for you, it is good for a business person to have at least basic knowledge about your tax obligation. The situation in which this is not true is if you can trust your tax expert 100 percent. Everyone can make mistakes. You should be able to recognize gross errors or omissions because, ultimately, the taxes are your responsibility.</p> <p>To find some basic information to give you an overview of your tax responsibilities, there are free or low-cost sources of information.</p> <p>I. Recognizing and Utilizing Sources of Information on the Business Tax System in Poland</p> <p>To give you an overview of basic tax information, some sources are available "for the asking." Use these sources to your advantage. Here are some of the places where you can easily access tax information and which types of tax guidance are available in those locations.</p>	<p>This section of Unit 4 must be developed in Poland. In the U.S. several sources such as the government taxing bodies (city, state, nation, unemployment administration, old age pension administration, etc.) will give businesses tax information. Public seminars and public libraries may also be a source for some business people.</p>

Content	Process
	<p>Yes, accounting firms (Arthur Anderson, etc.) and independent tax experts (accountant or attorney) have this knowledge also, but there is a charge. Source mentioned in the first paragraph furnish information to the public at no charge.</p> <p>You should complete TP 8 and a handout that show similar "free" or low-cost sources of information in Poland if it is possible. Once again you may need to bring a local tax officer into the class. Other tax experts might not be completely forthcoming with this sort of information if they felt that clients might use them less frequently because of this presentation.</p>

Selected Tax Obligations

Income Taxes

Turnover Taxes

Value Added Taxes

Inventory Taxes

Excise Taxes

Luxury Taxes

Employee Taxes

 Retirement

 Health

 Unemployment

Licenses

Duties

Dimensions That Determine Tax Status
(Requirements and Responsibilities)

Legal Form: Proprietorship
 Partnership
 Limited Liability
 Joint Venture

Domestic or International Trade

Number of Employees

Revenue Size

Tax Minimization

Wise

Legal

Good Business

Tax Avoidance

Risky Business

Illegal

What Tax Savings May Mean to the Entrepreneur

**If the ratio of before-tax
profits to sales is...**

**...then a \$1,000 tax saving would
boost profits* as much
as a sales increase of**

20%	\$ 9,260
15%	12,350
10%	18,520
5%	37,040
1%	185,200

*Assumes a flat 46 percent corporate tax rate, which is the maximum.

Source: Adapted from *Key Moves to Cut Company Taxes* (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1980), p. 5.

Siropolis, N. C. *Small Business Management*, 4th ed., 1986, p. 538. © Houghton Mifflin Company. Translated and used with permission.

Legitimate Tax Minimization Strategy

Reduce Inventories before Year End

Retain Employee Taxes in Interest-Bearing Accounts until Paid

Deduct All Legitimate Expenses from Revenues

Exercise Any Advantageous Tax Credits

True Costs of Excessive Tax Monitoring and Calculating

Time to

1. Find all taxes required
2. Learn processing procedures of all taxes
3. Calculate all tax
4. Complete all forms
5. File all registrations and licenses
6. Make many trips to the tax office
7. Monitor all tax legislation for changes
8. Learn all tax changes and new procedures

How many hours per month are required for you to complete these tasks?

Self or Professional Tax Preparation

Self

1. Tax Liabilities Simple?
2. Currently Self Reliant, Expect No Changes?
3. Helpful Local Tax Officers?
4. Employee Tax Expert in Firm?

Professional

1. Complex Tax Liabilities?
2. Not Currently Self Reliant?
3. Anticipate Meaningful Changes?
4. Less than Helpful Local Tax Officers?
5. No Tax Expert within Firm?
6. Cannot Afford the Time Taken from the Business?

Free or Low-Cost Sources of Basic Tax Information

Selected Tax Obligations

Income Taxes

Turnover Taxes

Value Added Taxes

Inventory Taxes

Excise Taxes

Employee Taxes

Retirement

Health

Unemployment

Licenses

Duties

Dimensions That Determine Tax Status
(Requirements and Responsibilities)

Legal Form: Proprietorship
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Exercise Any Advantageous Tax Credits

True Costs of Excessive Tax Monitoring and Calculating

Hours each month for

- | | | | |
|----|---------------------------|-------|-------|
| 1. | Find all tax requirements | _____ | hours |
| 2. | Learn all tax processing | _____ | hours |
| 3. | Calculate all taxes | _____ | hours |
| 4. | Complete all forms | _____ | hours |
| 5. | File all registrations | _____ | hours |
| 6. | Trips to tax office | _____ | hours |
| 7. | Monitor tax legislation | _____ | hours |
| 8. | Learn all tax changes | _____ | hour |
| | Total | _____ | hours |

A. Total Hours _____

B. Total hours _____

Your hourly
X earning power _____

Cost to hire
X your replacement
at the business* _____

subtotal _____

subtotal _____

A. subtotal _____ +

B. subtotal _____ = _____
Total

*You must hire a replacement for yourself at the business while you complete tax work, or you can close the business while you do tax work.

Free or Low-Cost Sources of Basic Tax Information

TAXES

- I. Characteristic features of the Polish tax system.
- II. Tax organs and tax procedure.
- III. Taxes being in force in Poland in 1992.

I.

CHARACTERISTICS FEATURES OF THE POLISH TAX SYSTEM

The Polish tax system is at present being thoroughly reconstructed. The major trends of the tax reform are the following:

1. Introduction as from 1st January 1992 of a new income tax on natural persons, replacing five other taxes, valid till then, viz. income tax on natural persons dating from 1972, the equalization income tax, the tax on remunerations, the tax on wages and the agrarian tax as far as incomes on special sectors of agricultural production are concerned. The new tax does not reach only natural persons' income derived on agricultural production, inheritance (succession) and gift, and those resulting from activities that cannot be subject of legal agreement (theft, smuggling, prostitution, etc.). The introduction of the new income tax made the system of the population's tax charges simpler and more uniform.
2. Substitution of the value added tax (VAT) for the turnover tax, in force at present. The value added tax, classed among the multi-phase, deducted taxes, is expected to secure among others a uniform taxation of economic subjects regardless of their ownerships sector they belong to. At present there are still two kinds of turnover tax, i.e. a turnover tax on the so-called nationalized economy units and a turnover tax dating from 1972 relating to the private sector. The introduction of the value added tax, however, encounters great difficulties. In spite of the fact that since, 1990 there has been prepared a bill of the Parliament act determining the construction of that tax, the very law cannot be—for various reasons—adopted by the Sejm.
3. Departing from a very common, till 1991, simplified income tax system. Basically all the lump sum forms of income and turnover tax payment, except for the so-called tax card, have been eliminated. The tax card is applied only in case of a service and trade activity carried on a small scale and with minimum employment. A considerable rise of the tax card rates which took place at the beginning of 1992, is likely to reduce the range of this form of taxation.
4. Introduction on the 1st January 1992 of a new charge—a forest tax, concerning forest and forest—areas owners and users. The forest—tax, beside the tax on property and the agrarian tax, is an extra charge on land immovables. The tax relates also to the state-owned forests which, so far, have been exempted from the forest fee taxation. The latter was paid only by natural persons: forest owners.

5. Start from 1991 the provisions of the new law on local taxes and fees came into force. It is not, however, a final solution because of lack of stable legal acts regulating local self-government tax revenues. Passing a new community finance law will provoke changes in the regulations relating to local taxes and fees.

The Polish tax law is not codified.

The lack of a code both as regards the procedural part, and the material one, makes it difficult to be au *courant* of the regulations relating to the particular taxes. A great number of legal regulations of different rank referring to the tax system makes the situation still more complicated.

Finance Minister's notices containing consolidated texts of tax regulations have become more scarce in the recent years. The availability of tax law regulations is hindered also because they are published with big delays, and sometimes in such legal acts, that apparently have nothing to do with the tax system, for example, the forest tax has been regulated in the law on forests, and the principal rates of the tax on remunerations of 1991—in the Budgetary Act.

A characteristic feature of the Polish tax system is its instability.

Frequent changes in tax regulations (e.g. the turnover tax rates changed in 1991 anywhere from ten to twenty times) prevent the creation of trustworthy tax rules which can be the basis of a tax strategy for persons engaged in economic activity. The instability of the tax system is one of the reasons for the appearance of legal gaps, which expose the state treasury to multi-million losses.

The phenomena touched upon above, result in formation of a general opinion about imperfection and illegibility of the Polish tax system. The tax system in its present shape is in our country one of important barriers of development of economic activity. The serious budgetary deficit which has contributed to the liquidation of almost all reliefs (abatements) and investment exemptions, are the major reasons for imposition of excessive tax changes on economic subjects.

II.

TAX ORGANS AND TAX PROCEDURE

The tax organs, i.e. the organs assessing and collecting taxes, in Poland are: Revenue Boards, Treasury Departments, Community organs, District Diets Appellate Colleges and—according to acts of Parliament—also other organs (e.g. customs offices).

The Finance Minister's territory organs, i.e. Revenue Boards and Treasury Departments are of principal importance. Their material competence is among others the assessment and collection of almost all taxes, burdening both economic subjects and the population. The only exception are the local taxes and fees, agrarian and forest taxes and charges composing the so-called joint monetary obligation—handled by the community tax organs.

The fiscal proceedings are of a two—instance character. The decision takes by Revenue Boards are subject to appeals to the Treasury Departments. A District Diet Appellate College is the second—instance organ's decisions, taken in the form of awards, is a complaint. When the instance procedure is exhausted there is still a possibility to, appeal against the decision to the Chief Administrative Court. The appeal to the second instance is lodged through the organ which has given the decision, and the complaint to the Chief Administrative Court—through the organ which has given the second—instance decision. The fact of appeal does not suspend the obligation of compliance, i.e. paying the tax.

A tax not paid in time is a tax backlog. An advanced tax instalment not paid in time or prepayment not collected is also considered to be tax arrears on which a default interest of 0.20 percent per each day of delay is collected.

III.**TAXES BEING IN FORCE IN POLAND IN 1992**

1. Corporate income tax
2. Income tax concerning natural persons
3. Turnover tax
4. Tax card as a lump sum form of the income and turnover taxes
5. Tax on remuneration increases
6. Agrarian tax
7. Forest tax
8. Local taxes and fees
9. Inheritance and gift tax
10. Revenue duty

1. CORPORATE INCOME TAX**Legal basis**

- Act of 31 January 1989 on the corporate income tax (Official Journal of 1991 N°49, item 216—consolidated text).
- Finance Minister' Order of 27th February 1990 on the corporate income tax (Official Journal N°12, item 80).
- Government order of 30th December 1989 on the reduction of the corporate income tax (Official Journal of 1990, N°4, item 20; of 1991 N°37, item 162; N°77, item 338).

Remark

There is a ready version of the new corporate income tax Act waiting in the Sejm. The Act should enter into force in the first semester of 1992.

2. INCOME TAX CONCERNING NATURAL PERSONS

Legal basis

- Act of 26th July 1991 on the income tax concerning natural persons (Official Journal N°80, item 350 and N°100, item 442).
- Finance Minister's Order of 20th December 1991 on the execution of some regulations of the Act on the income tax concerning natural persons (Official Journal N°124, item 550).

TURNOVER TAX

Legal basis

- Act of 16th December 1972 on the turnover tax (Official Journal of 1983 N°43, item 191, of 1985 N°12, item 50, of 1989 N°3, item 12, N°74, item 443 and of 1991 N°9, item 30 and N°35, item 155).
- Finance Minister's Order of 17th April 1991 on the rates of the turnover tax concerning natural persons and corporates not being the nationalized economy units and other non-corporate economic administration units, on tax abatements, exemptions and payment mode (Official Journal N°38, item 165).
- Finance Minister's Order of 26th July 1991 on the turnover tax on the goods imported or sent from abroad and on exemptions from the tax (Official Journal N°68, item 290 and N° . . . , item . . .)—the so-called border tax.

Remark

We have intentionally left out the turnover tax concerning the so-called nationalized economy units. The tax is regulated by the Act of 26th February 1982 on the taxation of nationalized economy units.

The changes of the turnover tax Act are contained in a bill on the corporate income tax and on changes in some Acts, . . . , the draft of which ought to be passed in the Sejm very soon.

4. THE TAX-CARE AS A SIMPLIFIED FORM OF THE INCOME AND TURNOVER TAX PAYMENT

Legal basis

- Finance Minister's Order of 20th December 1991 on the tax card (Official Journal N° . . . , item . . .)

Remark

The tax card rates contained in the above mentioned Order will be changed after mid-year 1992.

The Order will be published in one of the 1991 last Official Journals (*Dziennik Ustaw*). Unfortunately, the number of the journal is not yet known.

5. TAX ON REMUNERATION INCREASES**Legal basis**

- Act of 22nd December 1990 on the taxation of remuneration increases (Official Journal N°1, item 1).
- Government's Order of 23rd July 1991 on proceeds not numbered among remunerations (Official Journal N°73, item 322).
- Finance Minister's Order of 12th February 1991 on patterns of declarations for the calculation of the remuneration increase tax and on the method of counting the average employment (Official Journal of the Finance Minister N°3, item 11).

Remark

In the budgetary law Act amending bill there are proposals to amend the remuneration increase taxation Act. The proposals should become law by the end of February 1991.

6. AGRARIAN TAX**Legal basis**

- Act of 15th November 1984 on the agrarian tax (Official Journal N°52, item 268; of 1986 N°46, item 225; of 1988 N°1, item 1; of 1989 N°7, item 45; N°35, item 192; N°74, item 443; of 1990 N°34, item 198; of 1991 N°7, item 24; N°80, item 350; N°114, item 494).
- Finance Minister's Order of 11th January 1990 on the agrarian tax (Official Journal N°3, item 18).

Remark

On account of enacting the new law on the natural persons income tax, the agrarian tax regulations concerning special agricultural production sectors incomes have lost their validity.

7. FOREST TAX

Legal basis

- Act of 28th September 1991 on forests (Official Journal N°101, item 444).

8. LOCAL TAXES AND FEES

Legal basis

- Act of 12th January 1991 on local taxes and fees (Official Journal N°9, item 31 and N°101, item 444).
- Finance Minister's Order on the execution of some regulations of the local taxes and fees Act (Official Journal N°116, item 502).

Remark

The time for the payment of the tax on transport means has been fixed till 15th March this year. The Finance Minister's Order with the tax up-dated rates ought to be published till the end of February at the latest.

9. INHERITANCE AND GIFT TAX

Legal basis

- Act of 28th July 1983 on the inheritance and gift tax (Official Journal N°45, item 207 and of 1989 N°74, item 443).
- Finance Minister's Order of 26th August 1991 on execution of some inheritance and gift tax Act regulations (Official Journal N°82, item 368).
- Finance Minister's Order of 11th September 1981 on the inheritance and gift tax (Official Journal N°23, item 121).
- Finance Minister's Order of 31st March 1987 on the principles of estimating the value of several objects and proprietary interests constituting the basis for the inheritance and gift tax assessment (Official Journal N°12, item 75).

10. REVENUE DUTY

Legal basis

- Act of 31st January 1989 on the revenue duty (Official Journal N°4, item 23 and N°74, item 443).
- Finance Minister's Order of 2nd October 1991 concerning the revenue duty (Official Journal N°90, item 405).

Remark

The changes in the revenue duty Act and in the Order containing the duty rates are inserted in the bill of the Act on the income corporate tax and on the modification of some Acts regulating taxation principles.

FINANCIAL PLANNING

UNIT 5

Title: FINANCIAL PLANNING

Purpose: This unit illustrates the benefits of financial planning for entrepreneurs.

Objective: To show participants methods of assessing future financial needs for a "healthy" business

Materials:

Transparencies:

Transparency 1A	Estimating Money Needs
Transparency 1B	Financial Planning Procedures Outline
Transparency 2	Phillips' Pharmacy Balance Sheet 12/31/X3
Transparency 3	Phillips' Pharmacy Income Statement, Year Ending 12/31/X3
Transparency 4	Potential Problems in Phillips' Pharmacy
Transparency 5	Phillips' Pharmacy 19X4 Annual Expense Budget
Transparency 6	Phillips' Pharmacy 19X4 Monthly Operating Expense Budget
Transparency 7	Sales Budgeting Equation
Transparency 8	Phillips' Pharmacy 19X4 Monthly Sales Targets
Transparency 9	Phillips' Pharmacy Projected Income Statement for Year Ending 12/31/19X4
Transparency 10	Phillips' Pharmacy Performance Report, Month Ended 1/31/19X4
Transparency 11	Phillips' Pharmacy Performance Report, Month Ended 2/28/19X4
Transparency 12	Home Furnishings Store, Inc.: Forecast of Sales Revenues
Transparency 13	Home Furnishings Store, Inc.: Cash Budget to Estimate Money Needs
Transparency 14	Home Furnishings Store, Inc.: Beginning and Ending Balance Sheets
Transparency 15	Home Furnishings Store, Inc.: Income Statement (for first year of operations)

Handouts:

Handout 1	Financial Planning Procedures Outline
Handout 2	Phillips' Pharmacy Balance Sheet 12/31/X3
Handout 3	Phillips' Pharmacy Income Statement, Year Ending 12/31/X3
Handout 4	Potential Problems in Phillips' Pharmacy
Handout 5	Phillips' Pharmacy 19X4 Annual Expense Budget
Handout 6	Phillips' Pharmacy 19X4 Monthly Operating Expense Budget
Handout 7	Sales Budgeting Equation

Handout 8	Phillips' Pharmacy 19X4 Monthly Sales Targets
Handout 9	Phillips' Pharmacy Projected Income Statement for Year Ending 12/31/19X4
Handout 10	Phillips' Pharmacy Performance Report, Month Ended 1/31/19X4
Handout 11	Phillips' Pharmacy Performance Report, Month Ended 2/28/19X4
Handout 12	Home Furnishings Store, Inc: Forecast of Sales Revenues
Handout 13	Home Furnishings Store, Inc: Forecast of Sales Revenues (continued)

Class Exercises:

Handout 1	Financial Planning Procedures Outline
Handout 2	Phillips' Pharmacy Balance Sheet 12/31/X3
Handout 3	Phillips' Pharmacy Income Statement, Year Ending 12/31/X3
Handout 4	Potential Problems in Phillips' Pharmacy
Handout 5	Phillips' Pharmacy 19X4 Annual Expense Budget
Handout 6	Phillips' Pharmacy 19X4 Monthly Operating Expense Budget
Handout 7	Sales Budgeting Equation
Handout 8	Phillips' Pharmacy 19X4 Monthly Sales Targets
Handout 9	Phillips' Pharmacy Projected Income Statement for Year Ending 12/31/19X4
Handout 10	Phillips' Pharmacy Performance Report, Month Ended 1/31/19X4
Handout 11	Phillips' Pharmacy Performance Report, Month Ended 2/28/19X4
Handout 12	Home Furnishings Store, Inc: Forecast of Sales Revenues
Handout 13	Home Furnishings Store, Inc: Forecast of Sales Revenues (continued)

Product:

Full business financial plan

Assignment:

- Construct annual expense budget
- Develop monthly operating expense budget
- Utilize sales budgeting equation
- Establish monthly sales targets
- Project income statement
- Compare performance reports with projections
- Compare projected and actual income statement
- Discuss results
- Apply financial planning to personal business

Notes to Instructor:

If possible, participants should be advised to bring a hand calculator to class with them. A pencil or pen and paper is sufficient, but a calculator will save time.

Although the examples in this unit are about retail businesses, these same techniques apply to manufacturing, wholesale, and service businesses.

Phillips' Pharmacy provides comprehensive examples that continue throughout several of the finance units. The Phillips' Pharmacy examples show actual account balances and financial statements. Another shorter but comprehensive example, Home Furnishings Store, Inc. has been provided as well. Either can be used; it is not necessary to incorporate both into this unit.

Invite representatives from a bank, finance company, and government loan or grant agency to discuss the importance of these analyses to a business that is preparing to seek outside funding.

Instructors should adjust times to meet the needs of their participants.

Instructors should provide the summary remarks and preview the next unit.

Estimated time:

Construct annual expense budget	45 minutes
Develop monthly operating expense budget	50 minutes
Utilize sales budgeting equation	30 minutes
Class Break	30 minutes
Establish monthly sales targets	45 minutes
Project income statement	60 minutes
Compare performance reports with projections	20 minutes
Compare projected and actual income statement	15 minutes
Discuss results	30 minutes
Apply financial planning to personal business	65 minutes

¹ Wingenter, Thomas H. Part 3 - "Financial Budgeting." Small Business Development Center, University of Wisconsin. *Financial Management for Small Business*, p. 44. © The University of Wisconsin System. Translated and used with permission.

² Siropolis, N. H. Chapter 9 - *Small Business Management*, 4rd ed. Houghton Mifflin Company, p. 248, 1986. © Houghton Mifflin Company. Translated and used with permission.

Content	Process
<p>4. Develop yearly and monthly sales projections.</p> <p>5. Develop other financial management tools such as: cash flow statements, inventory planning, accounts receivable systems, and pricing structures.</p> <p>To illustrate the process beginning a financial plan we will use the pharmacy established by Pete Phillips¹ (or Home Furnishings Store, Inc.² and the woman entrepreneur who founded it).</p> <p>You are already familiar with the Phillips' Pharmacy founded by Pete Phillips. Let us begin the financial planning process with the pharmacy.</p> <p>A. Constructing An Annual Expense Budget</p> <p>As we mentioned earlier, the first step in financial planning is to use any information that you have from the past. Pete Phillips has a balance sheet and income statement from the past year.</p> <p>In this income statement, Pete has taken certain numbers and converted them to percentages, using sales as the base, i.e. common-sized statements. He did this in order to compare Phillips' Pharmacy financial information with standards or averages for similar businesses. By comparing Phillips' Pharmacy data item by item with these industry averages, he can detect areas where his firm may be developing financial ills.</p>	<p>This teaching outline will focus on the Phillips' Pharmacy example, however, the Home Furnishings Store, Inc. may be used instead. The Phillips' Pharmacy is a more typical retail store example and is an already-established business. The Home Furnishings Store, Inc. has not been opened at the time of the example. One distinctive aspect of the Home Furnishings Store example is the extreme over-optimism of the entrepreneur. Because of the differences in two examples, you may wish to use both examples instead of one. Regardless of the case(s) that you have chosen, introduce the case by telling participants some of the history of the company. Phillips' Pharmacy is the example in Unit 5 for illustration only.</p> <p>Distribute TP 2 and 3 and point out necessary items as you continue the discussion. Also distribute HO 2 and 3 so that the participants may annotate them if they wish.</p>

Content	Process
<p>There are several sources of this information for U.S. businesses. Poland will probably have these resources published soon. These published standards may be helpful, but it is important that you be aware of the shortcomings of this data. Averages may be misleading, especially if other data surrounding them is missing, such as a range of scores, sample size, etc. Nevertheless, these averages can be an important diagnostic tool.</p>	
<p>Pete examines expenditures comparing them with the standards. He found that the average pharmacy has a 65.2 percent cost of goods sold while his company has a cost of goods sold of 70 percent. This means that his gross profit margin is below the average. The below average score indicates that there are potential problem areas in the pharmacy. As you see there could be several sources (or a combination of sources) of this problem.</p>	<p>Show TP 4 and distribute HO 4.</p>
<p>Pete studies the income statement categories again. It appears that he may have too many employees or may be paying the employees too much. There are other items that are unacceptable, especially the insurance expense. By making simple comparisons of the operating expenses for Phillips' Pharmacy with standardized data from other pharmacies, Pete identified areas where his business may be financially weak.</p>	<p>Show TP 3 again.</p>
<p>Through analysis of the income statement by expense category, Pete gets a fairly clear picture of the strengths and weaknesses of his business. He has the opportunity to correct some of the weaknesses through the preparation and management of a financial plan. The next step in the process of developing this plan is to take the diagnostic information obtained from the review of the pharmacy's income</p>	<p>Display TP 5 and give participants HO 5.</p>

Content	Process
<p>statement and use it to build an annual expense budget for the next year.</p>	
<p>Here is the Annual expense budget for the fourth year of Phillips' Pharmacy. Notice that the cost of goods sold and inventory purchases have been omitted. At this point, Pete is concerned with preparing the first budget for operating expenses only. He has taken last year's operating expenses from the income statement and used them as the basis for projecting next year's expenses—including some creative treatment of his return on investment.</p>	<p>Emphasis points by indicating them of TP 5 and asking participants to find the same items on HO 5.</p>
<p>Owner's withdrawals, principal payments on loans, and return on investment must be budgeted in addition to operating expenses if the entrepreneur expects to set realistic financial goals. Notice that for the fourth year of operating his pharmacy Pete has listed a desired owner's withdrawal, principal payment, and return on investment. He has determined that in the third year he earned a salary of \$7,635 and an additional \$3,000 based upon his knowledge of the distribution of the \$10,635 profit of the business. Three thousand of that sum went to the bank in the form of principal payments. The remainder of net income, \$7,635, has been listed as his withdrawal for analysis purposes.</p>	<p>Continue to emphasize points by indicating them of TP 5 and asking participants to find the same items on HO 5. Be certain that each person understands your point before proceeding.</p>
<p>Let's look at the budgeted operating expense of Phillips' Pharmacy for the fourth year. Remember that Pete analyzed his employee situation and decided that he could have fewer employees and expand sales in the fourth year anyway. This could be accomplished through more efficient use of fewer personnel (they would be paid at a higher rate) and by slightly expanding his own hours of work. In this way operating expenses were reduced from \$59,858 to \$52,000.</p>	<p>Continue to emphasize points by indicating them of TP 5 and asking participants to find the same items on HO 5. Be certain that each person understands your point before proceeding.</p>

Content	Process
<p>The building lease was renegotiated, setting the rent cost for the next year at \$10,800. Projections were made from the costs for utilities, professional services, taxes and licenses, insurance, etc.</p>	
<p>Repair expenses are difficult to project because Pete never knows what will break down next. For budgeting, these expenses (and other unpredictable expenses like this) he looked at history. He averaged each expense over the last three years and increased each one to account for anticipated inflation.</p>	
<p>Finally, in order for Pete to feel that he is successful in operating his business, he has projected a needed withdrawal of \$28,000 and a projected profit, or return on investment, of \$3,000 for principal payment and \$2,700 over and above principal payment.</p>	<p>Continue to emphasize points by indicating them of TP 5 and asking participants to find the same items on HO 5. Be certain that each person understands your point before proceeding.</p>
<p>Since Pete is the owner and manager of the business, he should plan on two types of compensation. The first type is salary. If he were doing what he is doing for someone else, he would be paid a wage; so much per hour, so much per week or so much per month. If he is working for himself in his own business, he should be paid a similar amount.</p>	
<p>The second area of compensation a business owner is entitled to is profit, that is, return on investment. In our example, Pete has invested about \$79,400 in his business. If Pete invested \$79,400 in a different form of investment, it could generate a specific rate of return. Pete has placed his money available for investment in his business, which he should generate a higher rate of return than his other investment alternatives. Yet Pete anticipates a desired return on his \$79,400 investment of only \$5,700, approximately 7.2 percent rate of return. But, when he</p>	<p>Continue to emphasize points by indicating them of TP 5 and asking participants to find the same items on HO 5. Be certain that each person understands your point before proceeding.</p>

Content	Process
<p>set this rate, Pete acknowledged his poor track record in generating profit and salary and viewed the \$5,700 as a good target for his first year of financial planning. This is how owners and managers quantify financial success for themselves by setting desired salary and profit levels.</p>	
<p>B. Developing Monthly Operating Expense Budgets</p>	
<p>After completing the annual budget, the next step in Pete's financial planning process is to convert his annual expense budget into as monthly expense budget. Planned annual expenses cannot be monitored successfully unless they are broken down into monthly increments. Consequently, Pete needs to look at the history of the payment of expenses by category of expense. A good example is wage expense. His wage expenditures have been approximately 6.9 percent and 5 percent of the year's total in January and February respectively. Using this procedure, he could distribute the \$52,000 in budgeted wage expense over the 12 months of his coming fiscal year. This gives Pete a monthly standard for an operating expense, and he can manage the numbers more effectively as a result.</p>	<p>Show TP 6 to participants. Refer to items that appear on TP 6 throughout this section of Unit 5.</p>
<p>Some expense, such as rent, are contractual. Pete has signed a lease agreement requiring that he pay \$900 per month for the next 12 months. He can budget that amount in each of the following 12 months. Using either contractual arrangements or monthly percentages of totals, he can project all operating expenses for the coming year on a monthly basis.</p>	<p>Emphasize major points by referencing to TP 6.</p>

Content	Process
<p>Determining Money Needed as Gross Profit Margin</p> <p>Now Pete can total the anticipated operating expense so that he can determine what amount of money he needs in gross profit margin for the next year. Based on his current projections and desires, his gross profit margin needs for next year are \$143,540. This number is critical in financial planning. If Pete Phillips does not generate \$143,540 next year as his gross profit margin, which operating expenses will not be paid? The answer is apparent: Pete's desired withdrawals and return on investment will be reduced. Most entrepreneurs start businesses to earn these two types of compensation. It is ironic that those are the last two "expenses" to be paid. Last year's gross profit margin of \$127,358 needs to be increased by \$16,000 if Pete is to be financially successful as he defined success in the budget he just prepared.</p> <p>Pete now thoroughly understands that if his firm is to be financially successful, it must generate at least \$143,540 of gross profit margin. From Pete's analysis of last year's income statement, he recalls he had a margin of 30 percent of sales available to him to contribute to gross profit margin generation. The sales forecasting equation is: (refer to transparency).</p> <p>Solve this equation for Phillips' Pharmacy required sales with a margin of 30 percent and you will find that Pete must sell \$478,470 to reach his goal. If the gross profit margin is raised to 35 percent, Pete must sell only \$410,115 to reach his goals. Please notice these calculations.</p> <p>To achieve a 35 percent margin Pete should increase his prices. But, is this possible? The appropriate margin level is</p>	<p>Display TP 7 and distribute HO 7.</p> <p>Refer to TP 7 and HO 7.</p>

Content	Process
<p>really a marketing decision. The criteria for Phillips' Pharmacy is to generate \$143,540 of margin, regardless of what percentage of sales this money represents. Therefore Pete's goal is not to maximize sales, but to generate at least this amount of money. Pete must decide which is the most appropriate sales <i>versus</i> percentage margin combination to generate the \$143,540 needed. Pete could also look at margins of 28 percent, 31 percent, etc. to determine the best sales <i>versus</i> margin level for his business.</p> <p>Let us assume that Pete has decided to either stay with the 30 percent margin or increase to a 35 percent margin. Given that decision, he can proceed with the next phase of financial planning, which is developing monthly sales targets.</p> <p>C. Establishing Monthly Sales Targets</p> <p>In an established business, sales tend to have recurring seasonal highs and lows. To establish monthly sales targets for Phillips' Pharmacy, Pete should review how sales have been distributed over the previous years. Phillips' Pharmacy has historically done approximately 3 percent of its sales in January, 4 percent of its sales in February, etc. Pete can use these historic percentages to calculate the anticipated monthly sales from his newly determined sales target. If he accepts a 30 percent margin and prices accordingly, he needs \$478,470 in sales next year. Three percent of that should occur in January, 4 percent should occur in February, etc. if Pete is on target for his profit plan. The necessary monthly sales calculations for a 30 percent gross margin and a 35 percent gross margin are shown here. Both sales targets will generate a financially successful business if Pete has done a good job of financial planning.</p>	<p>Show TP 8 and provide HO 8 for the participants.</p> <p>Refer to TP 8 and HO 8.</p>

Content	Process
<p>D. Building a Projected Income Statement</p> <p>Here is the Income Statement that would result for the pharmacy. As you see it was a simple matter to build with all the projections and calculations that you have already made.</p> <p>If Pete accepts a 30 percent margin and prices accordingly, he needs \$478,470 in sales next year. The Income Statement that you see here reflects this scenario. If Pete incorporates a 35 percent margin through price increases, the business needs only \$410,115 in sales, 3 percent in January, 4 percent in February, etc. This would fulfill the pharmacy's success goals. Pete should make adjustments in the monthly percentage targets if he expects a change in his annual sales pattern.</p>	<p>Distribute HO 9 and display TP 9.</p> <p>The instructor may wish to have the participants construct an income statement for Phillips' Pharmacy using the higher margin and lower sales figure. First, this would be good practice. Second, they would see for themselves that the entrepreneur's compensation will be identical under the two sets of circumstances. Therefore, the level of financial success of the pharmacy is the same under both scenarios.</p>
<p>E. Comparing Actual Performance with Projected Performance</p> <p>The next step in the financial planning process is to prepare monthly performance reports. Pete will prepare a performance report for each month to monitor his sales and expenses. The January report is show here. This report compares the actual figures for the month with the budgeted amounts for each category of expense or revenue. Actual figures are available at the end of each month and the budgeted figures were determined at the beginning of the year.</p> <p>Monthly variances from the budget are recorded in the third column and a cumulative variance is calculated and recorded in the fourth column. Here is the performance report for February that illustrates the variance to date. In this way, Pete can monitor his performance in meeting his budget.</p>	<p>Display TP 10 and distribute HO 10.</p> <p>Display TP 11 and distribute HO 11.</p>

Content	Process
<p>As an example, actual sales for the month of January may be \$12,000 compared to Pete's needed sales of \$14,355. In the month of February, actual sales may be \$17,000 as compared to the \$19,139 that is required. And in March, actual sales may be \$28,000 as compared to the \$33,493 required. At this point, Pete should realize that the 30 percent margin he has set for his firm may not be adequate to generate his desired profit and salary. Rather than continuing to watch actual sales figures come in below target, he could make changes in his operating policies. He could change his promotional mix to see if that would alleviate the sales problems and/or he could adjust his margins. Pete could then calculate the financial information required to set up a modified plan and try to compensate for poor sales performance with a different percent margin.</p> <p>With a financial plan in place, Pete has the ability to manage his business. Pete now knows he needs a minimum dollar sales level for each month to be successful. Without these standards, Pete might have felt very comfortable with his \$12,000 of January sales. He would not have known that he needed \$14,355 and reacted to correct the problem.</p> <p>This transparency indicates that wages expense has a favorable variance of \$158. This may have been caused because Pete budgeted for a higher paid employee to work during the month and a lower paid employee actually worked those hours. Other possible causes may have been severe weather closing the store earlier than usual or a sick employee being unable to work.</p> <p>Utilities expense shows an unfavorable variance of \$43. This is due to colder weather than anticipated or an increase in</p>	<p>TP 10 should be shown again. Continue to use it for illustration throughout this section of Unit 5.</p> <p>Indicate this on TP 10.</p>

Content	Process
<p>rates by the utility. An employee may have set the thermostat higher than Pete usually does.</p>	<p>Indicate this on TP 10.</p>
<p>The performance report identifies variances from the budget. Pete should investigate all meaningful variances, both favorable and unfavorable to determine the cause of each. He then can take appropriate steps to correct the unfavorable and to continue to improve the favorable. Pete may find that the cause is not within his control (weather). This is management by exception. By focusing on the areas with meaningful variances, Pete can make decisions to control his business operations soon after the events that have caused the variances have occurred. He does not wait until the year end, when nothing can be changed. The expenses that do not have meaningful variances (telephone) are assumed to be all right.</p>	
<p>A budget is only as good as the people who manage it. By keeping track of operating expenses on a monthly basis and comparing them to budgeted figures, Pete can extend tighter control over his expenditures and get a step closer to more profitable operations. If he is overspending in some categories of operating expense without underspending in other categories to compensate, payment of these overexpenditures must come from additional sales or the depletion of Pete's compensation. Pete must control the profitability of his business by preparing monthly performance reports in order to determine if actual sales and expenditures are aligned with his profit plan.</p>	<p>Indicate this on TP 10.</p>
	<p>Again, it is not required to use Phillips' Pharmacy as an example. Another example, Home Furnishings Store, Inc. has been furnished with transparencies (TP 12-15) and handouts (HO 12 and 13) provided in the teaching materials. The</p>

Content	Process
<p>F. Applying Financial Planning to Your Personal Business</p> <p>We advise strongly that you apply these financial planning techniques to your own business. The primary benefit to you would be more and prompter insight into any difficulties that your business might experience. This improved information could enable you to take appropriate corrective actions before it is too late for your business to meet your goals and expectations.</p> <p>Another important point about financial planning is that it is a required part of a well-prepared business plan. Most potential lenders, investors or partners will ask to see your business plan before they will proceed to do business with you.</p> <p>Let us begin work on a financial plan for your individual businesses.</p>	<p>distinctive points about Home Furnishings are: (a) it is a proposed not a currently operating business; and (b) the entrepreneurs' projections are quite optimistic.</p> <p>If at all possible, participants should be told well in advance that they may want to bring information about their own business to this section of Unit. If they bring these materials and a calculator, they may wish to begin constructing their own business financial plan.</p> <p>Initially this may seem onerous, but participants would receive maximum benefits if this were possible. Time has been allocated to be devoted to this exercise.</p>

Estimating Money Needs

- How much money do you need?
- How will you spend the money?
- How soon will you pay us back?

Ronstadt, R. Chapter 10 - "Where and how to get the money your venture needs." *Entrepreneurial Finance*. Lord Publishing, Inc. 1988. © Lord Publishing, Inc. Translated and used with permission.

Financial Planning Procedure

1. Use historic income statement information as the basic for the plan.
2. Prepare a yearly and monthly expense budget.
3. Plan gross profit margins.
4. Develop yearly and monthly sales projections.
5. Develop other financial management tools to supplement the major financial plan, such as cash flow statements, inventory planning, accounts receivable systems, and pricing structures.

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Phillips' Pharmacy
Balance Sheets--December 31, 19X3

Assets

Current Assets		
Cash	\$ 2,343.00	
Accounts Receivable (net)	34,040.00	
Inventory	110,154.00	
Prepaid Expenses	<u>1,029.00</u>	
Total Current Assets		\$147,566.00
Fixed Assets		
Fixtures and Equipment (net after depreciation)		<u>30,634.00</u>
TOTAL ASSETS		<u>\$178,200.00</u>

Liabilities

Current and Accrued Liabilities		
Accounts Payable	\$ 45,150.00	
Notes Payable (within one year)	34,390.00	
Accrued Expenses and Other Liabilities	<u>12,614.00</u>	
Total Current and Accrued Liabilities		\$ 92,154.00
Long-Term Liabilities		
Notes Payable (later than one year)		<u>28,832.00</u>
Total Liabilities		120,986.00
Owners' Equity		<u>57,214.00</u>
TOTAL LIABILITIES AND OWNERS' EQUITY		<u>\$178,200.00</u>

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Phillips' Pharmacy
Income Statement
For the Year Ended December 31, 19X3

		<u>Our %'s</u>	<u>Standard %'s</u>
Sales			
Cash	\$320,520	75.5%	N/A
Credit	<u>104,008</u>	<u>24.5%</u>	<u>N/A</u>
Total Sales	\$424,528	100.0%	100.0%
Less Cost of Goods Sold:			
Beginning Inventory	\$ 87,950		
Plus Purchases	<u>319,374</u>		
Total Inventory Available	407,324		
Less Ending Inventory	<u>110,154</u>		
Cost of Goods Sold	<u>\$297,170</u>	<u>70.0%</u>	<u>65.2%</u>
Gross Profit Margin	\$127,358	30.0%	34.8%
Less Operating Expenses:			
Wages (excluding owner/ manager's)	\$ 59,858	14.1%	11.4%
Rent	9,340	2.2%	2.2%
Utilities	4,670	1.1%	0.9%
Professional Services	2,123	0.5%	0.5%
Taxes/Licenses*	5,519	1.3%	1.5%
Insurance**	8,491	2.0%	1.1%
Interest**	4,245	1.0%	0.8%
Repairs	4,665	1.1%	0.3%
Depreciation**	2,120	0.5%	0.9%
Advertising	2,547	0.6%	1.3%
Bad Debts	4,229	1.0%	0.2%
Telephone	850	0.2%	0.4%
Misc./Delivery	<u>8,066</u>	<u>1.9%</u>	<u>3.0%</u>
Total Operating Expenses	<u>\$116,723</u>	<u>27.5%</u>	<u>24.5%</u>
Net Profit (Loss) Before Tax***	<u>\$ 10,635</u>	<u>2.5%</u>	<u>10.3%</u>

* Excludes taxes on buildings, profit and owner/manager's salary

** Excludes building

*** Includes both owner/manager's salary plus return on investment (profit)

Wingenter, Thomas H. Part 3 - "Financial Budgeting." Small Business Development Center, University of Wisconsin. Financial Management for Small Business, p. 47. © The University of Wisconsin System. Translated and used with permission.

1. His firm could be underpriced.
2. His firm could be buying improperly.
3. His firm could be experiencing a substantial amount of inventory shrinkage through shoplifting, employee theft, etc.

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***Phillips' Pharmacy
19X4 Annual Expense Budget***

	<u>Last Year's</u>	<u>Budgeted</u>
Wages (excluding owner/manager's)	\$ 59,858	\$ 52,000
Rent	9,340	10,800
Utilities	4,670	4,600
Professional Services	2,123	2,200
Taxes/Licenses	5,519	5,520
Insurance	8,491	7,500
Interest	4,245	4,300
Repairs	4,665	4,000
Depreciation	2,120	2,120
Advertising	2,547	4,500
Bad Debts	4,229	3,000
Telephone	850	900
Misc./Delivery	<u>8,066</u>	<u>8,400</u>
 Total Operating Expenses	 \$116,723	 \$109,840
Plus:		
Desired Owner's Withdrawals (Salary)	7,635	28,000
Principal Payments	3,000	3,000
Desired Return (over and above Principal Payment)	<u>0</u>	<u>2,700</u>
 Totals	 <u>\$127,358</u>	 <u>\$143,540</u>

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Phillips' Pharmacy
19X4 Monthly Cash Expenditure Budget

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Wages	\$ 3,575	\$2,600	\$2,600	\$2,600	\$3,575	\$4,225	\$4,875	\$6,175	\$6,175	\$5,200	\$5,200	\$5,200	\$ 52,000
Rent	900	900	900	900	900	900	900	900	900	900	900	900	10,800
Utilities	675	670	670	280	225	170	170	170	225	335	450	560	4,600
Prof. Services	440	----	----	880	----	----	440	----	----	440	----	----	2,200
Taxes/License	550	165	220	385	110	500	550	830	660	500	500	550	5,520
Insurance	625	625	625	625	625	625	625	625	625	625	625	625	7,500
Interest	359	359	359	359	358	358	358	358	358	358	358	358	4,300
Repairs	1,540	200	200	200	230	275	275	280	200	200	200	200	4,000
Depreciation	177	177	177	177	177	177	177	177	176	176	176	176	2,120
Advertising	450	150	50	50	275	675	675	675	300	300	300	600	4,500
Bad Debts	90	120	210	60	270	300	450	360	270	270	300	300	3,000
Telephone	75	65	60	60	60	75	90	100	100	65	85	65	900
Misc./Del.	<u>1,230</u>	<u>300</u>	<u>520</u>	<u>150</u>	<u>660</u>	<u>740</u>	<u>1,110</u>	<u>890</u>	<u>660</u>	<u>660</u>	<u>740</u>	<u>740</u>	<u>8,400</u>
Total Operating Expenses	10,686	6,331	6,591	6,726	7,465	9,020	10,695	11,540	10,649	10,029	9,834	10,274	109,840
Plus:													
Owner Withdrawal (Salary) and Profit	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,540	30,700
Principal Payment	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>3,000</u>
TOTAL BUDGET	<u>\$13,496</u>	<u>\$9,141</u>	<u>\$9,401</u>	<u>\$9,536</u>	<u>\$10,275</u>	<u>\$11,830</u>	<u>\$13,505</u>	<u>\$14,350</u>	<u>\$13,459</u>	<u>\$12,839</u>	<u>\$12,644</u>	<u>\$13,064</u>	<u>\$143,540</u>

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Sales Budgeting Equation:
% Gross Profit x Sales Budget(s) = Expense Budget

$$.30 \times S = \$143,540$$

$$\frac{.30 \times S}{.30} = \frac{143,540}{.30}$$

$$S = \$478,470$$

$$.35 \times S = \$143,540$$

$$\frac{.35 \times S}{.35} = \frac{143,540}{.35}$$

$$S = \underline{\underline{\$410,115}}$$

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***Phillips' Pharmacy
19X4 Monthly Sales Targets***

	<u>Last Year</u>	<u>Last Year %</u>	<u>30% Gross Margin Budgeted</u>	<u>35% Gross Margin Budgeted</u>
Jan	\$ 12,736	3	\$ 14,355	\$ 12,303
Feb	16,980	4	19,139	16,405
Mar	29,717	7	33,493	28,708
Apr	8,491	2	9,570	8,202
May	38,207	9	43,062	36,910
Jun	42,453	10	47,847	41,012
Jul	63,680	15	71,770	61,517
Aug	50,945	12	57,416	49,214
Sep	38,210	9	43,062	36,910
Oct	38,200	9	43,062	36,910
Nov	42,459	10	47,847	41,012
Dec	<u>42,450</u>	<u>10</u>	<u>47,847</u>	<u>41,012</u>
TOTAL	<u>\$424,528</u>	<u>100%</u>	<u>\$478,470</u>	<u>\$410,115</u>

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Phillips' Pharmacy
Projected Income Statement
For the Year Ended December 31, 19X4

Sales		\$478,470
Less Cost of Goods Sold		<u>334,930</u>
Gross Profit Margin		\$143,540
Less Expenses:		
Wages	\$ 52,000	
Rent	10,800	
Utilities	4,600	
Professional Services	2,200	
Taxes/Licenses	5,520	
Insurance	7,500	
Interest	4,300	
Repairs	4,000	
Depreciation	2,120	
Advertising	4,500	
Bad Debts	3,000	
Telephone	900	
Misc./Delivery	8,400	
Total Operating Expenses		<u>\$109,840</u>
Net Profit*		<u>\$ 33,700</u>

*\$28,000 Salary and \$5,700 Profit

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Phillips' Pharmacy
Projected Income Statement
For the Year Ended December 31, 19X4

	<u>Actual</u>	<u>Budgeted</u>	<u>*Variance</u>	<u>Variance To-Date</u>
Sales	\$12,000	\$14,355	\$(2,355)	\$(2,355)
Less:				
Cost of Goods Sold	<u>8,400</u>	<u>10,049</u>	<u>1,649</u>	<u>1,649</u>
Gross Profit Margin	<u>3,600</u>	<u>4,306</u>	<u>(706)</u>	<u>(706)</u>
Operating Expenses:				
Wages	3,417	3,575	158	158
Rent	900	900	0	0
Utilities	718	675	(43)	(43)
Professional Services	410	440	30	30
Taxes/Licenses	565	550	(15)	(15)
Insurance	625	625	0	0
Interest	359	359	0	0
Repairs	1,420	1,540	120	120
Depreciation	177	177	0	0
Advertising	430	450	20	20
Bad Debts	100	90	(10)	(10)
Telephone	78	75	(3)	(3)
Misc./Delivery	<u>1,340</u>	<u>1,230</u>	<u>(110)</u>	<u>(110)</u>
Total Operating Expenses	<u>10,539</u>	<u>10,686</u>	<u>147</u>	<u>147</u>
NET PROFIT (Loss)				
Before Tax	<u>\$ (6,939)</u>	<u>\$ (6,380)</u>	<u>\$ (559)</u>	<u>\$ (559)</u>

*Parentheses indicate unfavorable variance

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***Phillips' Pharmacy
Performance Report
For the Month Ended February 28, 19X4***

	<u>Actual</u>	<u>Budgeted</u>	<u>*Variance</u>	<u>Variance To-Date</u>
Sales	\$17,000	\$19,139	\$(2,139)	\$(4,494)
Less:				
Cost of Goods Sold	<u>11,900</u>	<u>13,397</u>	<u>1,497</u>	<u>3,146</u>
Gross Profit Margin	<u>5,100</u>	<u>5,742</u>	<u>(642)</u>	<u>(1,348)</u>
Operating Expenses:				
Wages	2,514	2,600	86	244
Rent	900	900	0	0
Utilities	719	670	(49)	(92)
Professional Services	--	--	--	30
Taxes/Licenses	140	165	25	10
Insurance	625	625	0	0
Interest	359	359	0	0
Repairs	350	200	(150)	(30)
Depreciation	177	177	0	0
Advertising	150	150	0	20
Bad Debts	135	120	(15)	(25)
Telephone	72	65	(7)	(10)
Misc./Delivery	<u>372</u>	<u>300</u>	<u>(72)</u>	<u>(182)</u>
Total Operating Expenses	<u>6,513</u>	<u>6,331</u>	<u>(182)</u>	<u>(35)</u>
NET PROFIT (Loss)				
Before Tax	<u>\$ (1,413)</u>	<u>\$ (589)</u>	<u>\$ (824)</u>	<u>\$ (1,383)</u>

*Parentheses indicate unfavorable variance

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Home Furnishings Store, Inc.: Forecast of Sales Revenues
(Exhibit 9.1)

		1st month	\$ 20,000*
		2nd month	10,000
		3rd month	12,000
		4th month	14,000
Year	Sales Revenues	5th month	16,000
1	\$240,000	6th month	18,000
2	320,000	7th month	20,000
3	400,000	8th month	22,000
		9th month	24,000
		10th month	26,000
		11th month	28,000
		12th month	<u>30,000</u>
			<u>\$240,000</u>

* Assumes revenues will be relatively high the first month because of store's "grand opening."

Home Furnishings Store, Inc:
Cash Budget to Estimate Money Needs
 (Exhibit 9.2)

	Before Start-Up	Month After Start-Up			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Expected sales revenues		\$ 20,000	\$ 10,000	\$ 12,000	\$ 14,000
Cash inflow					
Collections from credit customers		0	20,000	10,000	12,000
Cash outflow					
Purchasing inventory	\$ 36,000	\$ 6,000*	\$ 7,200	\$ 8,400	\$ 9,600
Paying operating expenses		<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>
Subtotal	\$ 36,000	\$ 12,400	\$ 13,600	\$ 14,800	\$ 16,000
Buying fixed assets	\$192,000				
Buying other assets	<u>12,000</u>				
Subtotal	\$240,000				
Total cash outflow	240,000	12,400	13,600	14,800	16,000
Cash-flow summary					
Total cash inflow		\$ 0	\$ 20,000	\$ 10,000	\$ 12,000
Total cash outflow	<u>\$240,000</u>	<u>12,400</u>	<u>13,600</u>	<u>14,800</u>	<u>16,000</u>
Surplus or shortage	(240,000)	(\$ 12,400)	\$ 6,400	(\$ 4,800)	(\$ 4,000)
Cumulative shortage	(240,000)	(252,400)	(246,000)	(250,800)	(254,800)
Money needs					
Maximum shortage	\$262,800				
10% allowance for contingencies	<u>26,280</u>				
Total money needs	\$290,000				
Cash balance at start of month	\$290,000	\$ 50,000	\$ 37,500	\$ 44,000	\$ 39,200
Surplus or shortage	<u>(240,000)</u>	<u>(12,400)</u>	<u>(6,400)</u>	<u>(4,800)</u>	<u>(4,000)</u>
Cash balance at end of month	\$ 50,000	\$ 37,600	\$ 44,000	\$ 39,200	\$ 35,200

*Obtained by multiplying the next month's revenues by 60 percent (60% x \$10,000 revenues in second month = \$6,000 purchase cost in first month).

Assumes expected revenues of \$30,000 in thirteenth month after start-up.

Rounded upward to nearest thousand.

Home Furnishings Store, Inc:
Cash Budget to Estimate Money Needs (Cont.)
 (Exhibit 9.2)

Month After Start-Up

<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>
\$ 16,000	\$ 18,000	\$ 20,000	\$ 22,000	\$ 24,000	\$ 26,000	\$ 28,000	# 30,000
14,000	16,000	18,000	20,000	22,000	24,000	26,000	28,000
\$ 10,800	\$ 12,000	\$ 13,200	\$ 14,400	\$ 15,600	\$ 16,800	\$ 18,000	\$ 18,000
<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>
\$ 17,200	\$ 18,400	\$ 19,600	\$ 20,800	\$ 22,000	\$ 23,200	\$ 24,400	\$ 24,400
17,200	18,400	19,600	20,800	22,000	23,200	24,400	24,400
\$ 14,000	\$ 16,000	\$ 18,000	\$ 20,000	\$ 22,000	\$ 24,000	\$ 26,000	\$ 28,000
<u>\$ 17,200</u>	<u>18,400</u>	<u>19,600</u>	<u>20,800</u>	<u>22,000</u>	<u>23,200</u>	<u>24,400</u>	<u>24,400</u>
(\$ 3,200)	(\$ 2,400)	\$ 1,600	(\$ 800)	\$ 0	\$ 800	\$ 1,600	\$ 3,600
(258,000)	(260,400)	(262,000)	(262,800)	(262,800)	(262,000)	(260,400)	(256,800)
\$ 35,200	\$ 32,000	\$ 29,600	\$ 28,000	\$ 27,200	\$ 27,200	\$ 28,000	\$ 29,600
<u>(3,200)</u>	<u>(2,400)</u>	<u>(1,600)</u>	<u>(800)</u>	<u>(0)</u>	<u>800</u>	<u>1,600</u>	<u>3,600</u>
\$ 32,000	\$ 29,600	\$ 28,000	\$ 27,200	\$ 27,200	\$ 28,000	\$ 29,600	\$ 33,200

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**Home Furnishings Store, Inc.: Beginning and Ending Balance Sheets
(Exhibit 9.3)**

<u>Assets</u>	<u>Beginning</u>	<u>Ending</u>	<u>Equities</u>	<u>Beginning</u>	<u>Ending</u>
Current assets			Liabilities	\$ 0	\$ 0
Cash	\$ 50,000	\$ 33,200 ^a	Owners' equity		
Accounts receivable	0	30,000 ^b	Common stock	\$290,000	\$290,000
Inventory	<u>36,000</u>	<u>42,000^c</u>	Retained earnings	<u>1,000^d</u>	<u>1,000^e</u>
Subtotal	\$ 86,000	\$105,200		<u>\$290,000</u>	<u>\$291,000</u>
Fixed assets					
Building	\$150,000	\$144,000 ^d			
Equipment	26,000	23,400 ^d			
Parking lot	<u>16,000</u>	<u>14,000^d</u>			
Subtotal	192,000	181,800			
Other assets	<u>12,000</u>	<u>4,000^e</u>			
Total assets	<u>\$290,000</u>	<u>\$291,000</u>	Total assets	<u>\$290,000</u>	<u>\$291,000</u>

^aObtained directly from Exhibit 9.2 (cash balance at end of twelfth month).

^bObtained directly from Exhibit 9.2 (all revenues in twelfth month will be owed by customers at month's end).

^cAssumes a base inventory (\$24,000) plus enough inventory (\$18,000) to support the thirteenth month's budgeted revenues of 30,000.

^dReflects depreciation of fixed assets during year (see Exhibit 9.4).

^eReflects write-off of prepaid expenses during year (see Exhibit 9.4).

^fObtained directly from Exhibit 9.4 (assumes profits will be plowed back into the venture).

Home Furnishings Store, Inc.: Income Statement
(for first year of operations)
(Exhibit 9.4)

Sales revenues		\$240,000 ^a
Cost of goods sold		<u>144,000^b</u>
Gross profit		96,000
Operating expenses		
Administrative and selling	\$76,800 ^c	
Depreciation	10,200 ^d	
Write-off of prepaid expenses	<u>8,000^e</u>	<u>95,000</u>
Operating profit		<u>\$ 1,000</u>

^aObtained from Exhibit 9.2 by adding monthly budgeted revenues.

^bObtained by multiplying total budgeted revenues of \$240,000 by 60 percent (because the gross margin is 40 percent).

^cObtained from Exhibit 9.2 by adding monthly operating expenses.

^dObtained as follows:

 Building depreciation = $\$150,000 \div 25\text{-year life} = \$ 6,000$

 Equipment depreciation = $26,000 \div 10\text{-year life} = 2,600$

 Parking lot depreciation = $16,000 \div 10\text{-year life} = \underline{1,600}$

\$10,200

^eObtained as follows:

 Professional fees = \$3,000

 Insurance = 2,000 (one third of \$6,000 prepaid insurance policy expires during year)

 Promotional costs = 2,000

 Licenses = 1,000

\$8,000

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Financial Planning Procedure

1. Use historic income statement information as the basic for the plan.
2. Prepare a yearly and monthly expense budget.
3. Plan gross profit margins.
4. Develop yearly and monthly sales projections.
5. Develop other financial management tools to supplement the major financial plan, such as cash flow statements, inventory planning, accounts receivable systems, and pricing structures.

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Phillips' Pharmacy
Balance Sheets--December 31, 19X3

Assets

Current Assets

Cash	\$ 2,343.00	
Accounts Receivable (net)	34,040.00	
Inventory	110,154.00	
Prepaid Expenses	<u>1,029.00</u>	
Total Current Assets		\$147,566.00

Fixed Assets

Fixtures and Equipment (net after depreciation)		<u>30,634.00</u>
--	--	------------------

TOTAL ASSETS	<u>\$178,200.00</u>
--------------	---------------------

Liabilities

Current and Accrued Liabilities

Accounts Payable	\$ 45,150.00	
Notes Payable (within one year)	34,390.00	
Accrued Expenses and Other Liabilities	<u>12,614.00</u>	
Total Current and Accrued Liabilities		\$ 92,154.00

Long-Term Liabilities

Notes Payable (later than one year)		<u>28,832.00</u>
--	--	------------------

Total Liabilities	120,986.00
-------------------	------------

Owners' Equity	<u>57,214.00</u>
----------------	------------------

TOTAL LIABILITIES AND OWNERS' EQUITY	<u>\$178,200.00</u>
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Phillips' Pharmacy
Income Statement
For the Year Ended December 31, 19X3

		<u>Our %'s</u>	<u>Standard %'s</u>
Sales			
Cash	\$320,520	75.5%	N/A
Credit	<u>104,008</u>	<u>24.5%</u>	<u>N/A</u>
Total Sales	\$424,528	100.0%	100.0%
Less Cost of Goods Sold:			
Beginning Inventory	\$ 87,950		
Plus Purchases	<u>319,374</u>		
Total Inventory Available	407,324		
Less Ending Inventory	<u>110,154</u>		
Cost of Goods Sold	<u>\$297,170</u>	<u>70.0%</u>	<u>65.2%</u>
Gross Profit Margin	\$127,358	30.0%	34.8%
Less Operating Expenses:			
Wages (excluding owner/ manager's)	\$ 59,858	14.1%	11.4%
Rent	9,340	2.2%	2.2%
Utilities	4,670	1.1%	0.9%
Professional Services	2,123	0.5%	0.5%
Taxes/Licenses [*]	5,519	1.3%	1.5%
Insurance ^{**}	8,491	2.0%	1.1%
Interest ^{**}	4,245	1.0%	0.8%
Repairs	4,665	1.1%	0.3%
Depreciation ^{**}	2,120	0.5%	0.9%
Advertising	2,547	0.6%	1.3%
Bad Debts	4,229	1.0%	0.2%
Telephone	850	0.2%	0.4%
Misc./Delivery	<u>8,066</u>	<u>1.9%</u>	<u>3.0%</u>
Total Operating Expenses	<u>\$116,723</u>	<u>27.5%</u>	<u>24.5%</u>
Net Profit (Loss) Before Tax^{***}	<u>\$ 10,635</u>	<u>2.5%</u>	<u>10.3%</u>

^{*} Excludes taxes on buildings, profit and owner/manager's salary

^{**} Excludes building

^{***} Includes both owner/manager's salary plus return on investment (profit)

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1. His firm could be underpriced.
2. His firm could be buying improperly.
3. His firm could be experiencing a substantial amount of inventory shrinkage through shoplifting, employee theft, etc.

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Phillips' Pharmacy
19X4 Annual Expense Budget

	<u>Last Year's</u>	<u>Budgeted</u>
Wages (excluding owner/manager's)	\$ 59,858	\$ 52,000
Rent	9,340	10,800
Utilities	4,670	4,600
Professional Services	2,123	2,200
Taxes/Licenses	5,519	5,520
Insurance	8,491	7,500
Interest	4,245	4,300
Repairs	4,665	4,000
Depreciation	2,120	2,120
Advertising	2,547	4,500
Bad Debts	4,229	3,000
Telephone	850	900
Misc./Delivery	<u>8,066</u>	<u>8,400</u>
Total Operating Expenses	\$116,723	\$109,840
Plus:		
Desired Owner's Withdrawals (Salary)	7,635	28,000
Principal Payments	3,000	3,000
Desired Return (over and above Principal Payment)	<u>0</u>	<u>2,700</u>
Totals	<u>\$127,358</u>	<u>\$143,540</u>

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Phillips' Pharmacy
19X4 Monthly Cash Expenditure Budget

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Wages	\$ 3,575	\$2,600	\$2,600	\$2,600	\$3,575	\$4,225	\$4,875	\$6,175	\$6,175	\$5,200	\$5,200	\$5,200	\$ 52,000
Rent	900	900	900	900	900	900	900	900	900	900	900	900	10,800
Utilities	675	670	670	280	225	170	170	170	225	335	450	560	4,600
Prof. Services	440	----	----	880	----	----	440	----	----	440	----	----	2,200
Taxes/License	550	165	220	385	110	500	550	830	660	500	500	550	5,520
Insurance	625	625	625	625	625	625	625	625	625	625	625	625	7,500
Interest	359	359	359	359	358	358	358	358	358	358	358	358	4,300
Repairs	1,540	200	200	200	230	275	275	280	200	200	200	200	4,000
Depreciation	177	177	177	177	177	177	177	177	176	176	176	176	2,120
Advertising	450	150	50	50	275	675	675	675	300	300	300	600	4,500
Bad Debts	90	120	210	60	270	300	450	360	270	270	300	300	3,000
Telephone	75	65	60	60	60	75	90	100	100	65	85	65	900
Misc./Del.	<u>1,230</u>	<u>300</u>	<u>520</u>	<u>150</u>	<u>660</u>	<u>740</u>	<u>1,110</u>	<u>890</u>	<u>660</u>	<u>660</u>	<u>740</u>	<u>740</u>	<u>8,400</u>
Total Operating Expenses	10,686	6,331	6,591	6,726	7,465	9,020	10,695	11,540	10,649	10,029	9,834	10,274	109,840
Plus:													
Owner Withdrawal (Salary) and Profit	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,560	2,540	30,700
Principal Payment	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>	<u>3,000</u>
TOTAL BUDGET	<u>\$13,496</u>	<u>\$9,141</u>	<u>\$9,401</u>	<u>\$9,536</u>	<u>\$10,275</u>	<u>\$11,830</u>	<u>\$13,505</u>	<u>\$14,350</u>	<u>\$13,459</u>	<u>\$12,839</u>	<u>\$12,644</u>	<u>\$13,064</u>	<u>\$143,540</u>

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Sales Budgeting Equation:
% Gross Profit x Sales Budget(s) = Expense Budget

$$.30 \times S = \$143,540$$

$$\frac{.30 \times S}{.30} = \frac{143,540}{.30}$$

$$S = \underline{\underline{\$478,470}}$$

$$.35 \times S = \$143,540$$

$$\frac{.35 \times S}{.35} = \frac{143,540}{.35}$$

$$S = \underline{\underline{\$410,115}}$$

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***Phillips' Pharmacy
19X4 Monthly Sales Targets***

	<u>Last Year</u>	<u>Last Year %</u>	<u>30% Gross Margin Budgeted</u>	<u>35% Gross Margin Budgeted</u>
Jan	\$ 12,736	3	\$ 14,355	\$ 12,303
Feb	16,980	4	19,139	16,405
Mar	29,717	7	33,493	28,708
Apr	8,491	2	9,570	8,202
May	38,207	9	43,062	36,910
Jun	42,453	10	47,847	41,012
Jul	63,680	15	71,770	61,517
Aug	50,945	12	57,416	49,214
Sep	38,210	9	43,062	36,910
Oct	38,200	9	43,062	36,910
Nov	42,459	10	47,847	41,012
Dec	<u>42,450</u>	<u>10</u>	<u>47,847</u>	<u>41,012</u>
TOTAL	<u>\$424,528</u>	<u>100%</u>	<u>\$478,470</u>	<u>\$410,115</u>

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Phillips' Pharmacy
Projected Income Statement
For the Year Ended December 31, 19X4

Sales		\$478,470
Less Cost of Goods Sold		<u>334,930</u>
Gross Profit Margin		\$143,540
Less Expenses:		
Wages	\$ 52,000	
Rent	10,800	
Utilities	4,600	
Professional Services	2,200	
Taxes/Licenses	5,520	
Insurance	7,500	
Interest	4,300	
Repairs	4,000	
Depreciation	2,120	
Advertising	4,500	
Bad Debts	3,000	
Telephone	900	
Misc./Delivery	8,400	
Total Operating Expenses		<u>\$109,840</u>
Net Profit*		<u>\$ 33,700</u>

*\$28,000 Salary and \$5,700 Profit

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Phillips' Pharmacy
Projected Income Statement
For the Year Ended December 31, 19X4

	<u>Actual</u>	<u>Budgeted</u>	<u>*Variance</u>	<u>Variance To-Date</u>
Sales	\$12,000	\$14,355	\$(2,355)	\$(2,355)
Less:				
Cost of Goods Sold	<u>8,400</u>	<u>10,049</u>	<u>1,649</u>	<u>1,649</u>
Gross Profit Margin	<u>3,600</u>	<u>4,306</u>	<u>(706)</u>	<u>(706)</u>
Operating Expenses:				
Wages	3,417	3,575	158	158
Rent	900	900	0	0
Utilities	718	675	(43)	(43)
Professional Services	410	440	30	30
Taxes/Licenses	565	550	(15)	(15)
Insurance	625	625	0	0
Interest	359	359	0	0
Repairs	1,420	1,540	120	120
Depreciation	177	177	0	0
Advertising	430	450	20	20
Bad Debts	100	90	(10)	(10)
Telephone	78	75	(3)	(3)
Misc./Delivery	<u>1,340</u>	<u>1,230</u>	<u>(110)</u>	<u>(110)</u>
Total Operating Expenses	<u>10,539</u>	<u>10,686</u>	<u>147</u>	<u>147</u>
NET PROFIT (Loss)				
Before Tax	<u>\$ (6,939)</u>	<u>\$ (6,380)</u>	<u>\$ (559)</u>	<u>\$ (559)</u>

*Parentheses indicate unfavorable variance

Wingenter, Thomas H. Part 3 - "Financial Budgeting." Small Business Development Center, University of Wisconsin. Financial Management for Small Business, p. 58. © The University of Wisconsin System. Translated and used with permission.

***Phillips' Pharmacy
Performance Report
For the Month Ended February 28, 19X4***

	<u>Actual</u>	<u>Budgeted</u>	<u>*Variance</u>	<u>Variance To-Date</u>
Sales	\$17,000	\$19,139	\$(2,139)	\$(4,494)
Less:				
Cost of Goods Sold	<u>11,900</u>	<u>13,397</u>	<u>1,497</u>	<u>3,146</u>
Gross Profit Margin	<u>5,100</u>	<u>5,742</u>	<u>(642)</u>	<u>(1,348)</u>
Operating Expenses:				
Wages	2,514	2,600	86	244
Rent	900	900	0	0
Utilities	719	670	(49)	(92)
Professional Services	--	--	--	30
Taxes/Licenses	140	165	25	10
Insurance	625	625	0	0
Interest	359	359	0	0
Repairs	350	200	(150)	(30)
Depreciation	177	177	0	0
Advertising	150	150	0	20
Bad Debts	135	120	(15)	(25)
Telephone	72	65	(7)	(10)
Misc./Delivery	<u>372</u>	<u>300</u>	<u>(72)</u>	<u>(182)</u>
Total Operating Expenses	<u>6,513</u>	<u>6,331</u>	<u>(182)</u>	<u>(35)</u>
NET PROFIT (Loss)				
Before Tax	<u>\$ (1,413)</u>	<u>\$ (589)</u>	<u>\$ (824)</u>	<u>\$ (1,383)</u>

*Parentheses indicate unfavorable variance

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Home Furnishings Store, Inc.: Forecast of Sales Revenues
(Exhibit 9.1)

Year	Sales Revenues		
		1st month	\$ 20,000*
		2nd month	10,000
		3rd month	12,000
		4th month	14,000
		5th month	16,000
1	\$240,000	6th month	18,000
2	320,000	7th month	20,000
3	400,000	8th month	22,000
		9th month	24,000
		10th month	26,000
		11th month	28,000
		12th month	<u>30,000</u>
			<u>\$240,000</u>

* Assumes revenues will be relatively high the first month because of store's "grand opening."

Example: An entrepreneur plans to open a home furnishings store and she has estimated her sales revenues for the first three years. (See Exhibit 9.1)

This revenue forecast is a result of the marketing plan that she worked out as part of her business plan. Although it is rough, the revenue forecast is the single most important estimate an entrepreneur can make. Most of the other estimates the entrepreneur must make are based on it. For example, a store with yearly revenues of \$2,000,000 rather than \$400,000 may call for:

- Five times as many salespersons
- Four times as much floor space
- Three times as much inventory of home furnishings

Having forecast her revenues, the entrepreneur next estimates the cost of the fixed and current assets she will need to support those revenues. Before we proceed with our example, we will describe and differentiate fixed and current assets.

Let us now assume that the entrepreneur's store will sell Scandinavian furniture. She has made the following estimates of start-up costs. She will:

- Construct a one-store, free standing building with 5,000 square feet of floor space to display and store furniture. Cost: \$150,000 at year zero.
- Keep a base inventory of furniture high enough to support twice the average monthly budgeted (or forecast) revenues; in addition, buy enough inventory monthly to cover the following month's budgeted revenues. She plans to pay for all inventory within a month of purchasing it. Cost: \$36,000 at year zero.
- Put an asphalt surface on a parking lot next to the building. Cost: \$16,000 at year zero.
- Finance those customers who buy on credit. She is assuming that all sales will be credit sales, with customers taking a month to pay, on the average.
- Buy fixtures, office equipment, and a half-ton delivery truck. Cost: \$26,000 at year zero.
- Incorporate the venture with a lawyer's help. Cost: \$2,000.
- Design a record-keeping system with the help of an accountant. Cost: \$1,000.
- Buy a three-year prepaid insurance policy. Cost: \$6,000.
- Buy city, county, and state licenses. Cost: \$1,000.
- Promote the store's grand opening. Cost: \$2,000.

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Home Furnishings Store, Inc:
Cash Budget to Estimate Money Needs
 (Exhibit 9.2)

	Before Start-Up	Month After Start-Up			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Expected sales revenues		\$ 20,000	\$ 10,000	\$ 12,000	\$ 14,000
Cash inflow					
Collections from credit customers		0	20,000	10,000	12,000
Cash outflow					
Purchasing inventory	\$ 36,000	\$ 6,000*	\$ 7,200	\$ 8,400	\$ 9,600
Paying operating expenses		<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>
Subtotal	\$ 36,000	\$ 12,400	\$ 13,600	\$ 14,800	\$ 16,000
Buying fixed assets	\$192,000				
Buying other assets	<u>12,000</u>				
Subtotal	\$240,000				
Total cash outflow	240,000	12,400	13,600	14,800	16,000
Cash-flow summary					
Total cash inflow		\$ 0	\$ 20,000	\$ 10,000	\$ 12,000
Total cash outflow	<u>\$240,000</u>	<u>12,400</u>	<u>13,600</u>	<u>14,800</u>	<u>16,000</u>
Surplus or shortage	(240,000)	(\$ 12,400)	\$ 6,400	(\$ 4,800)	(\$ 4,000)
Cumulative shortage	(240,000)	(252,400)	(246,000)	(250,800)	(254,800)
Money needs					
Maximum shortage	\$262,800				
10% allowance for contingencies	<u>26,280</u>				
Total money needs	\$290,000				
Cash balance at start of month	\$290,000	\$ 50,000	\$ 37,500	\$ 44,000	\$ 39,200
Surplus or shortage	<u>(240,000)</u>	<u>(12,400)</u>	<u>(6,400)</u>	<u>(4,800)</u>	<u>(4,000)</u>
Cash balance at end of month	\$ 50,000	\$ 37,600	\$ 44,000	\$ 39,200	\$ 35,200

*Obtained by multiplying the next month's revenues by 60 percent (60% x \$10,000 revenues in second month = \$6,000 purchase cost in first month).

Assumes expected revenues of \$30,000 in thirteenth month after start-up.

Rounded upward to nearest thousand.

Home Furnishings Store, Inc:
Cash Budget to Estimate Money Needs (Cont.)
 (Exhibit 9.2)

Month After Start-Up

<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>
\$ 16,000	\$ 18,000	\$ 20,000	\$ 22,000	\$ 24,000	\$ 26,000	\$ 28,000	# 30,000
14,000	16,000	18,000	20,000	22,000	24,000	26,000	28,000
\$ 10,800	\$ 12,000	\$ 13,200	\$ 14,400	\$ 15,600	\$ 16,800	\$ 18,000	\$ 18,000
<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>	<u>6,400</u>
\$ 17,200	\$ 18,400	\$ 19,600	\$ 20,800	\$ 22,000	\$ 23,200	\$ 24,400	\$ 24,400
17,200	18,400	19,600	20,800	22,000	23,200	24,400	24,400
\$ 14,000	\$ 16,000	\$ 18,000	\$ 20,000	\$ 22,000	\$ 24,000	\$ 26,000	\$ 28,000
<u>\$ 17,200</u>	<u>18,400</u>	<u>19,600</u>	<u>20,800</u>	<u>22,000</u>	<u>23,200</u>	<u>24,400</u>	<u>24,400</u>
(\$ 3,200)	(\$ 2,400)	\$ 1,600	(\$ 800)	\$ 0	\$ 800	\$ 1,600	\$ 3,600
(258,000)	(260,400)	(262,000)	(262,800)	(262,800)	(262,000)	(260,400)	(256,800)
\$ 35,200	\$ 32,000	\$ 29,600	\$ 28,000	\$ 27,200	\$ 27,200	\$ 28,000	\$ 29,600
<u>(3,200)</u>	<u>(2,400)</u>	<u>(1,600)</u>	<u>(800)</u>	<u>(0)</u>	<u>800</u>	<u>1,600</u>	<u>3,600</u>
\$ 32,000	\$ 29,600	\$ 28,000	\$ 27,200	\$ 27,200	\$ 28,000	\$ 29,600	\$ 33,200

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Home Furnishings Store, Inc.: Beginning and Ending Balance Sheets
(Exhibit 9.3)

<u>Assets</u>	<u>Beginning</u>	<u>Ending</u>	<u>Equities</u>	<u>Beginning</u>	<u>Ending</u>
Current assets			Liabilities	\$ 0	\$ 0
Cash	\$ 50,000	\$ 33,200 ^a	Owners' equity		
Accounts receivable	0	30,000 ^b	Common stock	\$290,000	\$290,000
Inventory	<u>36,000</u>	<u>42,000^c</u>	Retained earnings	<u>1,000^f</u>	<u>1,000^f</u>
Subtotal	\$ 86,000	\$105,200		<u>\$290,000</u>	<u>\$291,000</u>
Fixed assets					
Building	\$150,000	\$144,000 ^d			
Equipment	26,000	23,400 ^d			
Parking lot	<u>16,000</u>	<u>14,000^d</u>			
Subtotal	192,000	181,800			
Other assets	<u>12,000</u>	<u>4,000^e</u>			
Total assets	<u>\$290,000</u>	<u>\$291,000</u>	Total assets	<u>\$290,000</u>	<u>\$291,000</u>

^aObtained directly from Exhibit 9.2 (cash balance at end of twelfth month).

^bObtained directly from Exhibit 9.2 (all revenues in twelfth month will be owed by customers at month's end).

^cAssumes a base inventory (\$24,000) plus enough inventory (\$18,000) to support the thirteenth month's budgeted revenues of 30,000.

^dReflects depreciation of fixed assets during year (see Exhibit 9.4).

^eReflects write-off of prepaid expenses during year (see Exhibit 9.4).

^fObtained directly from Exhibit 9.4 (assumes profits will be plowed back into the venture).

Home Furnishings Store, Inc.: Income Statement (for first year of operations)
(Exhibit 9.4)

Sales revenues	\$240,000 ^a
Cost of goods sold	<u>144,000^b</u>
Gross profit	\$96,000
Operating expenses	
Administrative and selling	\$76,800 ^c
Depreciation	10,200 ^d
Write-off of prepaid expenses	<u>8,000^e</u>
Operating profit	<u>\$ 1,000</u>

^aObtained from Exhibit 9.2 by adding monthly budgeted revenues.

^bObtained by multiplying total budgeted revenues of \$240,000 by 60 percent (because the gross margin is 40 percent).

^cObtained from Exhibit 9.2 by adding monthly operating expenses.

^dObtained as follows:

Building depreciation	=	$\$150,000 \div 25\text{-year life}$	=	\$ 6,000
Equipment depreciation	=	$26,000 \div 10\text{-year life}$	=	2,600
Parking lot depreciation	=	$16,000 \div 10\text{-year life}$	=	<u>1,600</u>
				<u>\$10,200</u>

^eObtained as follows:

Professional fees	=	\$3,000
Insurance	=	2,000 (one third of \$6,000 prepaid insurance policy expires during year)
Promotional costs	=	2,000
Licenses	=	<u>1,000</u>
		<u>\$8,000</u>

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She now groups these cost items into three categories--current assets, fixed assets, and other assets--to arrive at the total cost of assets at year zero:

Current assets:		
Accounts receivable	\$ 0	
Inventory	<u>36,000</u>	\$ 36,000
Fixed assets:		
Building	\$150,000	
Equipment and fixtures	26,000	
Parking lot	<u>16,000</u>	\$192,000
Other assets:		
Prepaid insurance	\$ 6,000	
Professional fees	3,000	
Promotional costs	2,000	
Licenses	<u>1,000</u>	<u>\$ 12,000</u>
Total assets		<u>\$240,000</u>

Instead of constructing the building, the entrepreneur could lease a building and its parking lot, thus reducing the asset costs from \$240,000 to \$74,000. If she did lease, she would probably have to pay rent in advance, covering at least the first month or two.

So far, the entrepreneur has estimated what it would cost just to open for business. She now must go one step further and estimate what it would cost to stay open through the first year, by month:

Monthly Cash Expenses (excluding cost of goods sold):	
Entrepreneur's salary	\$2,400
Part-time employee wages	1,200
Advertising	600
Electricity, heat, telephone	400
Delivery	400
Accounting, legal	400
Supplies	200
Other	<u>800</u>
Total	<u>\$6,400</u>

Note that these monthly expenses are unlikely to change with revenues. That is, first-year revenues could be double the \$240,000 forecast--and yet monthly expenses would not be significantly higher. Part-time wages, since as revenues increase, the entrepreneur will probably need to add more part-time salespersons to wait on customers.

To these costs, the entrepreneur should add the purchase cost of furniture sold. These purchase costs, as mentioned earlier, would vary with revenues. Assuming a profit margin of 40 percent, the entrepreneur would realize a gross profit of \$40 on every \$100 sales of furniture:

\$100	paid by entrepreneur's customers (Revenues)
<u>60</u>	paid to entrepreneur's suppliers (Cost of Goods Sold)
<u>\$ 40</u>	contribution to all other expenses and to profit (Gross Profit)

Having collected the cost figures, the entrepreneur may now go ahead and draft a cash budget for the first year. One method appears in Exhibit 9.2. Note that this budget shows:

- Expected inflows and outflows of cash
- The amount of money needed to finance the venture
- The cash balance at the end of each month

As shown in Exhibit 9.2, the entrepreneur needs \$262,800, assuming that things will go as planned. They rarely do--so the entrepreneur adds a cushion of 10 percent to the \$262,800 to allow for unevenness in the flow of money in and out of the venture and to absorb any unexpected bills. Rounding the figure to the nearest \$1,000, the entrepreneur arrives at \$290,000, the total amount she must raise to launch the venture.

Besides a cash budget, the entrepreneur should prepare beginning and ending balance sheets plus an income statement. These financial statements are shown in Exhibits 9.3 and 9.4. Note that most of the figures come from the cash budget and that the balance sheets assume that all the entrepreneur's assets would be financed through the sale of common stock. This assumption is unrealistic. Shortly, we will discuss other, more realistic ways of financing new ventures. Note also that the income statement shows that the venture will be profitable during its first full year of operation.

BANKS AND OTHER SOURCES OF FUNDS

UNIT 6

Title: BANKS AND OTHER SOURCES OF FUNDS

Purpose: This unit is designed to inform participants about many sources of funding for their businesses and the most recommended methods to acquire funds from each potential source.

Objective: To make participants aware of an assortment of sources for funding, i.e., borrowing, personal savings, family contributions

Materials:

Transparencies:

Transparency 1	Sources of Business Capital
Transparency 2	Sources of Financing Expected to Use
Transparency 3	What to Emphasize to Different Sources of Financing
Transparency 4	Hierarchy of Some Financing Sources
Transparency 5	Eight Rules for Borrowing from Your Banker Financing
Transparency 6	Numbers for Your Banker
Transparency 7A-C	Swishhelm Department Store, Inc.
Transparency 8	Business Plan

Handouts:

Handout 1	What to Emphasize to Different Sources of Financing
Handout 2	Eight Rules for Borrowing from Your Banker
Handout 3A-B	Swishhelm Department Store, Inc.

Class Exercises:

Handout 3	Swishhelm Department Store, Inc.
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Product:

Specific strategies for specific funding sources
Funding plans for your business
Initial Financial segment of your business plan

Assignment:

Discuss the specific strategies for specific funding sources described in this unit's materials
Develop funding plans for your business
Begin developing the financial segment of your business plan

Notes to Instructor:

This unit should generate much interest from participants. Some reasons are: (a) this material's relationship to a "Business Plan;" (b) it contains guidelines for successful borrowing; and (c) discussion of alternate sources of capital.

If possible, participants should be advised to bring a hand calculator to class with them. A pencil or pen and paper is sufficient, but a calculator will save time.

Invite representatives from a bank, finance company, and government loan or grant agency to discuss the importance of financial planning to a business that is preparing to seek outside funding.

Instructors should adjust times to meet the needs of their participants.

Instructors should provide the summary remarks.

Estimated time:

Specific strategies for specific funding sources	60 minutes
Funding plans for your business	60 minutes
Class break	30 minutes
Initial Financial segment of your business plan	210 minutes

¹ Ronstadt, R. Chapter 10 - "Where and how to get the money your venture needs." *Entrepreneurial Finance*. © Lord Publishing, Inc. Translated and used with permission.

² Siropolis, N. C. *Small Business Management*, 4th ed., 1986, p. 277. © Houghton Mifflin Company. Translated and used with permission.

Content	Process
<p>Introduction</p> <p>Without money and entrepreneur's ideas and dreams may never become realized. Further, inadequate capital is the cause of many small business failures. Enough capital is needed to start up the business and operate it through an initial loss period, and keep enough in reserve for seasonal or unexpected hard times. These are some of the reasons that entrepreneurs should understand how to go about raising that money. You need to know the possible sources of money, strategies for acquiring the money, necessary documentation and preparation, and how these ideas and techniques apply to you.</p> <p>First let us look at some possible sources of money for an entrepreneur.</p> <p>A. Presenting A Variety of Funding Sources</p> <p>One of an entrepreneur's most puzzling questions is where best to raise money. As you can see here there is a wide variety of sources that are possible. They range from private to governmental sources. They are described very generally here. Let us look at a few more specific potential sources.</p> <p>Here you can see that typical sources of capital for small businesses are: friends and relatives, banks, trade or supplier credit, good cash management, customers, leasing assets, finance companies, "factors", additional "owners" (stockholders), "venture" capital, and some government agencies and public equity or debt placement, i.e., stocks and bonds. This list excludes your personal assets.</p> <p>Many small businesses are financed by borrowing from friends and family. Com-</p>	<p>Show TP 1 and indicate each item as you discuss it with the participants.</p> <p>You will need to adapt this transparency and discussion to the Polish circumstances.</p>

Content	Process
<p>mercial banks are by far the most visible lenders. In some countries they make the greatest number and variety of small business loans. Payment terms offered by your suppliers are a potential source of funds. Good cash management techniques such as discounts for early payment and penalties for late payment constitute virtual extensions of credit.</p> <p>When customers pay for work in advance or provide some of the materials or service themselves, they are in effect financing the business. Reducing expenses is really a way of raising capital because it frees up funds that would have been spent otherwise.</p> <p>Another way to reduce cash outflow is to lease assets rather than buy them. Customarily, finance companies make both personal and business loans at interest rates several points above that which banks charge. "Factors," persons who take ownership of inventories or accounts receivable in exchange for cash, usually charge significantly higher rates (interest and fees) than commercial finance companies.</p> <p>Additional owners of equity, stockholders, may provide cash. Business owners should remember that other stockholders reduce the original owner's control and require detailed information. Typically, venture capital is equity investment in companies with significant growth potential. Significant growth means firms capable of generating very large returns on investment, usually greater than 50 percent annually. Venture capitalists expect to receive high returns and to make business decisions. There may be a variety of government assistance programs available to small businesses on the local, state, and national levels. This assistance normally takes the form of targeted loan</p>	

Content	Process
<p>packages or loan guarantees.</p> <p>While larger companies are able to finance their purchases of real property, facilities, or equipment by issuing stocks or bonds that are traded on public securities exchanges, this option is not directly available for small business. To issues these securities is very expensive and time consuming. It would require the business to employ or retain several attorneys and accountants, and relinquish control.</p> <p>This transparency shows a survey made with two different groups of students about where they expected to find money for a small business. The column on the left represent younger, less experienced students. The column of the right shows responses to the same set of questions from older, more experienced students. You will probably appreciate some of the differences.</p> <p>Regardless of where you believe that you will be able to outside funding, i.e., money other than your own, for your business, you need to develop a strategy to successfully get the money.</p> <p>B. Discussing Specific Strategies for Each Different Funding Sources</p> <p>Here you can see some examples of what you should reasonably expect from people who represent potential sources of capital. The first column displays four different possible sources of money. The second outlines the information that they would be likely to request. The third column suggests the numbers, or financial information, that each source would probably be most interested in learning from you about your business.</p>	<p>Display TP 2 for discussion.</p> <p>Display TP 3 and distribute HO 1 so that participants may annotate and study this later.</p> <p>Note: On the transparency and handout appears the word "core" in reference to "statements." This means the basic financial statements, such as income statement, balance sheet, and cash flow statement.</p>

Content	Process
<p>Looking through the list it is clear that all these potential sources, even friends and family, will probably want to see at least and income statement. As the amount of money you desire increases, or the sophistication of the possible source of funds increases, the greater will be the demands for formal financial presentations and good preparation. It is important that you as small business people realize that different sources of funding require a variety of parameters on financing. Parameters may include:</p> <ul style="list-style-type: none"> implicit interest charges; explicit interest charges; fees; title surrender of your assets; managerial control of your business; all records of your business; ownership rights in your assets; or ownership rights in your business. <p>It should be clear to you that although many financing sources exist, some of them may require more than you are willing to give.</p> <p>The least expensive and most frequently used sources of funding are</p> <ul style="list-style-type: none"> trade or supplier credit, good cash management, and customers. <p>Much discussion of the first two appear in Unit 2. As you recall Unit 2 explained cash flow management. The reason for its extreme importance is the steady, smooth flow of working capital that can be provided from good cash flow management. Customers can become a source of financing by making deposits on goods before they are delivered or services before they are rendered.</p>	<p>It is critical that the participants realize that there is a variety of terms and restrictions on capital sources. Some of the requirements can become extremely restrictive and intrusive. Let them know the brutal truth.</p> <p>Display TP 4.</p>

Content	Process
<p>The only requirements in this group of three are possible superficial information or reference needs by suppliers or new customers. The only parameters or charges are implicit interest charges (nothing is free) although some people prefer to think of these sources as free financing.</p>	<p>Make it clear to the students that unless they pay cash on delivery for all goods or services, they are receiving free financing. It may be only small sums of money or brief time periods, but this is a source of funding.</p>
<p>Real assets such as equipment, autos, trucks, buildings, or land may be leased with one of many types of leases. Leases are all sources of funding regardless of their terms of ownership rights or maintenance requirements. Operating leases have been particularly popular with some small business people because of the small amount of capital required and/or obligated to gain the use of productive assets. Usually little or no down payment is required and the long-term commitments are minimal. They require a small amount of information on the viability of your business.</p>	
<p>Commercial banks have been the most commonly used external source of financing for small business people. Because of their frequent use and popularity a detailed example of bank choice and borrower preparation will be covered at the end of this section.</p>	<p>Point out the participants that as you proceed through the list (from top to bottom), it becomes more difficult and expensive to acquire capital.</p>
<p>Commercial Finance Companies (CFC) have similar information requirement to commercial banks: operating records, financial statement, and a specific outline of how the funds will be used. A CFC may or may not require collateral, also. Normally the interest and origination charges at CFCs are higher than those at banks. The amounts loaned are most often small and loaned for a brief period of time.</p>	

Content	Process
<p>Factors actually buy accounts receivable from a business in exchange for cash. Factors require extensive information on the quality and age of accounts receivable and well as good compensation for the risk of "uncollectability" that they are taking. Further, factors may retain the right to demand that the businessperson make any defaulting account "right." For example, a factor would buy your \$100,000 of accounts receivable for \$60,000. If any account did not pay, you would be required to pay the factor that amount. While factors would own your accounts receivable, additional partners or stockholders own part of your business.</p> <p>Partners or a small number of stockholders can provide capital to your business, but this could entitle them to</p> <ul style="list-style-type: none"> make management decision, have ownership in the business, demand a share of profits, and see all financial and operating records. <p>Of course these are minimal legal and accounting expenses in this situation compared to a public offering. Their expectation on returns are of course privately negotiated between you.</p> <p>Only about 2 to 3 percent of the small businesses in the United States finance their business with venture capitalists. Venture Capitalists have all the same rights as any other equity (stock) holders. However, usually they demand a controlling interest in the business and expect high and quickly realized returns on their investment.</p> <p>Generally, small businesspersons in the U.S. avoid venture capitalists because of their extraordinarily high demands and</p>	

Content	Process
<p>expectations.</p> <p>Issuing securities, stocks or bonds, to be trading on established securities exchanges is called a "public offering." These offerings require great investments of time, money, professional assistance, and a complete loss of privacy. All financial and operating records of the business would be available for anyone to examine. In the U.S. it would be expected that the company would be required to reveal all records and spend \$350,000 to \$500,000 before any stocks or bonds could be sold to anyone in a public offering. Many companies choose not to go public or fail in their attempt to go public. There is no guarantee that stocks or bonds will be purchased by the public after they have met "offering" requirements.</p> <p>As we said earlier, the most popular external source of financing for small business people is a commercial bank. Bank requirements and your preparation would be similar when seeking any external financing. Look at these eight rules for successfully borrowing from a bank.</p> <p>Let us briefly discuss the eight rules.</p> <ol style="list-style-type: none"> 1. Select carefully. Preferably choose a bank where the people know you. Get a letter of introduction, preferably from your former banker if you are moving to a new region or community. 2. Make an appointment. Treat your banker like a professional. Do not arrive unannounced. 3. Bring necessary material. Request loan forms ahead of time if possible. In this way you can learn what they will expect you to bring to the meet- 	<p>Display TP 5 and give HO 2 to the participants.</p>

Content	Process
<p>niques to determine the amount of money needed, to know when you can repay the loan and any interest, and if the business can survive performance that is less than expected.</p> <p>Remember that this is a discussion of some but not all sources of capital. The preparation and planning for any source of external financing will be similar in some ways. The example, <i>Swisshelm</i>¹, is for someone who plans to visit a bank, however, similar preparations apply for many of the sources of funds.</p> <p>The <i>Swisshelm Department Store, Inc.</i> provides an excellent example of necessary financial preparation prior to a visit to a banker or any other lender. Let us use this example next to show exactly how to derive reasonable estimates of desired funding.</p> <p>C. Deriving Reasonable Estimates of Desired Funding</p> <p>Preparing a plan and financial projections enables entrepreneurs to crystallize their thinking. It forces them to move logically and systematically from the stage of dreams and ideas to that of concrete action. The concreteness of the planning assists entrepreneurs in determining their financial needs.</p> <p>The cash budget, centerpiece of the business plan, translates operating plans into dollars. Without a cash budget, entrepreneurs have no way of estimating their financial needs. So vital are cash budgets that few investors or creditors will entertain a request for money without one. More than any other way, the cash budget allows them to decide intelligently whether to finance the entrepreneur. The cash budget, for example, helps the bank-</p>	<p>Reiterate that a cash budget will probably be demanded by any person or organization that supplies capital.</p>

Content	Process
<p>D. Developing Funding Plans for Your Personal Business</p> <p>The purpose of Swisshelm Department Store² exercise was to give you the understanding and techniques to construct a cash budget for your own business.</p>	<p>If participants are amenable to the suggestion, encourage them to begin the process of preparing a cash budget for their own business. Stress the importance of this document and other basic financial statement or projections toward acquiring any outside funding.</p> <p>Assist the participants as much as possible while they are present. Some people may be resistant to this section's exercise for privacy reasons. They may feel that the circumstances of their personal business should be kept completely confidential. Use this confidentiality desire to illustrate one of the drawbacks of external capital.</p> <p>This is a legitimate feeling and is quite common among entrepreneurs and small business people. It is advised that the instructor respect the wishes of the participants in this point.</p> <p>Regardless of the openness of the participants about their own businesses, the next section can be approached smoothly. These financial preparations are considered a required and important part of a business plan.</p>
<p>E. Developing the Financial Segment of Your Personal Business Plan</p> <p>You have now completed what would be the centerpiece (most important part) of a business plan for the Swisshelm Department Store, Inc. (and begun this same task for your own business). Yes, it is true. Many of the vital parts of a well composed business plan are financial preparations similar to the ones that you have completed.</p>	<p>Display TP 8 and reference the transparency as you discuss the points involved.</p>

Content	Process
<p>This is a simple format for a business plan. But, of the six steps that appear, three are composed of the procedures you have just completed. A proposal for funds cannot be convincingly made unless a cash budget has been completed. The cash budget would also be a vital part of financial projections. Past and current accounting statements are also important components of the business plan. All of these items are important to any potential lender's decision making process.</p> <p>With the skills that you have developed through this unit, you will be better able to compose a convincing business plan.</p>	

Sources of Business Capital

1. Friends and Relatives
2. Commercial Banks
3. Trade or Supplier Credit
4. Good Cash Management
5. Customers
6. Leasing Assets
7. Commercial Finance Companies
8. Factoring Inventories and Accounts Receivable
9. Additional Stockholders (Private Equity Placement)
10. Venture Capital
11. Miscellaneous Government Agencies
12. Stockholder (Public Equity Placement)
13. Bonds (Public Debt Placement)

Stover, Mark, and Page Laura. The ten basic sources of business capital. Business Development, University of Wisconsin. © The University of Wisconsin System Institutions and U. S. Small Business Administration. Translated and used with permission.

Sources of Financing Expected to Use

	% Day	% Evening
Personal Savings	94	87
Family	82	33 ¹
Banks	65	44
Partners	41	36
Other individual investors	29	26
Friends	12	15
SBICs	6	8
Venture Capitalists	0	3
Private Placement	0	0
Public Offering	0	0
Other	6	6

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What to Emphasize to Different Sources of Financing

	<u>What General Messages: What Are They Most Looking For?</u>	<u>What Numbers Specifically To Emphasize</u>
1. <i>Friends/ Family</i>	<p>Your risk Sales/Profitability</p> <p>Will I get my money back?</p>	<p>What you have or have not invested and why</p> <p>When repaid? Income Statement</p>
2. <i>Bank Loan Officers</i>	<p>The increased value this loan will produce for your venture</p> <p>The 4-Cs</p> <ul style="list-style-type: none"> • your credit • your character • your collateral • your capacity (to repay) 	<p>The Core Statements, emphasizing the Cash Flow Statement</p> <p>Debt/Equity Ratios Interest Coverage Ratio</p> <p>Other Key Measures</p>
3. <i>Informal Investors</i>	<p>Your mission and the financial & psychic rewards they will accrue</p> <p>Their "informal" involvement in your venture. How to get "cash out?"</p>	<p>The Core Statements (Compressed) and showing minimum detail)</p> <p>When sufficient profits will occur. Dividend payments, consulting income, or other means of payment.</p>
4. <i>Professional Venture Capitalists</i>	<p>Ability to create a "High Growth Venture" that will return 30-50% on invested equity per year</p> <p>Justification of first year sales new line When and how harvest money</p>	<p>The Core Statements and Key Budgets</p>

Hierarchy of Some Financing Sources

Good Cash Management
Customers
Vendors (Suppliers)

Leasing Companies

Commercial Banks

Commercial Finance Companies

Factors

Additional Stockholders or Partners

Venture Capitalists

Public Offerings of Securities

Equity Holders
Bond Holders

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Eight Rules for Borrowing from your Banker

1. Select your bank carefully.
2. Call and make an appointment.
3. Know what to bring.
4. Be prepared. Spend four to eight hours getting ready.
5. Prepare and know your financial projections.
6. Be ready to guarantee your venture loans personally.
7. Don't hide things. Be trustful and candid, even if it hurts.
8. Become a customer of the bank's other services.

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***Numbers For Your Banker or Other External Source
of Capital (Non Equity)***

What do lenders want to see? Lenders want to know:

- How much you want to borrow
- What you want the money for
- When you will be able to repay the loan
- When you will be able to pay the interest
- If your venture can survive a setback in its plans
- What security is available for the loan

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Swisshelm Department Store, Inc.

- Selling men's suits and appliances on the floor
- Managing a men's clothing department
- Serving as assistant branch manager

<u>Sales Revenue</u>	<u>Forecast</u>	<u>Monthly Expenses</u>	
June (actual)	\$24,000	Rent	\$3,000
July (actual)	20,000	Depreciation	500
August	28,000	Other expenses	900
September	52,000	Wages and salaries:	
October	44,000	August	\$2,800
November	76,000	September	3,200
December	96,000	October	3,200
January	22,000	November	3,600
February	32,000	December	3,600
		January	2,800

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- Sales would be:
 - 30 percent for cash
 - 70 percent for credit
- Of the credit sales:
 - 80 percent would be paid within one month of purchase
 - 20 percent would be paid within two months
- Credit sales outstanding on August 1 consisted of:
 - \$14,000 from July
 - \$ 3,360 from June
- Gross profit on sales would be 25 percent.
- Enough inventory would be purchased monthly to cover the next month's budgeted sales.
- All inventory purchases would be paid for in the same month they were made.
- A minimum cash balance of \$8,000 would be maintained.
- The cash balance was \$19,000 on August 1.
- All borrowings would be in multiples of \$1,000 and would be made or repaid on the first of the month.
- Interest at 1 percent a month would be paid when borrowings were repaid in full.

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Swisshelm Department Store, Inc.: Cash Budget Worksheet

	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>
Cash inflow						
Sales revenues	_____	_____	_____	_____	_____	_____
Credit sales	_____	_____	_____	_____	_____	_____
Collections from						
One month before	_____	_____	_____	_____	_____	_____
Two months before	_____	_____	_____	_____	_____	_____
Subtotal	_____	_____	_____	_____	_____	_____
Cash sales	_____	_____	_____	_____	_____	_____
Total cash inflow	_____	_____	_____	_____	_____	_____
Cash outflow						
Inventory purchases	_____	_____	_____	_____	_____	_____
Wages and salaries	_____	_____	_____	_____	_____	_____
Rent	_____	_____	_____	_____	_____	_____
Other expenses	_____	_____	_____	_____	_____	_____
Interest	_____	_____	_____	_____	_____	_____
Total cash outflow	_____	_____	_____	_____	_____	_____
Cash gain or loss	_____	_____	_____	_____	_____	_____
Borrowings						
Opening cash balance	_____	_____	_____	_____	_____	_____
Balance before borrowing	_____	_____	_____	_____	_____	_____
Borrowings	_____	_____	_____	_____	_____	_____
Ending cash balance	_____	_____	_____	_____	_____	_____
Cumulative borrowings	_____	_____	_____	_____	_____	_____

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Business Plan

1. A Summary Page
2. A Business Fact Sheet
3. Proposal for Funds
4. Executive Profile
5. Financial Projection
6. Past and Current Accounting Statement

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What to Emphasize to Different Sources of Financing

	<u>What General Messages: What Are They Most Looking For?</u>	<u>What Numbers Specifically To Emphasize</u>
1. <i>Friends/ Family</i>	<p>Your risk Sales/Profitability</p> <p>Will I get my money back?</p>	<p>What you have or have not invested and why</p> <p>When repaid? Income Statement</p>
2. <i>Bank Loan Officers</i>	<p>The increased value this loan will produce for your venture</p> <p>The 4-Cs</p> <ul style="list-style-type: none"> • your credit • your character • your collateral • your capacity (to repay) 	<p>The Core Statements, emphasizing the Cash Flow Statement</p> <p>Debt/Equity Ratios Interest Coverage Ratio</p> <p>Other Key Measures</p>
3. <i>Informal Investors</i>	<p>Your mission and the financial & psychic rewards they will accrue</p> <p>Their "informal" involvement in your venture. How to get "cash out?"</p>	<p>The Core Statements (Compressed) and showing minimum detail)</p> <p>When sufficient profits will occur. Dividend payments, consulting income, or other means of payment.</p>
4. <i>Professional Venture Capitalists</i>	<p>Ability to create a "High Growth Venture" that will return 30-50% on invested equity per year</p> <p>Justification of first year sales new line When and how harvest money</p>	<p>The Core Statements and Key Budgets</p>

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Eight Rules for Borrowing from your Banker

1. ***Select your bank carefully***, preferably one that knows you. Get a letter of introduction, preferably from your former banker if you're moving to a new region or community.
2. ***Call and make an appointment***. Treat your banker like a professional. Don't just "drop in."
3. ***Know what to bring***. Be certain you know what they want you to bring to the meeting or what they'll need to make a decision. Have them mail loan forms to you ahead of time, if possible.
4. ***Be prepared***. Spend four to eight hours getting ready. One expert states that "fewer than 10% of prospective borrowers came to the bank adequately prepared."
5. ***Prepare and know your financial projections***. Don't depend on your accountant unless he or she will come to the bank with you. Even then, be certain you understand the key numbers and what they mean.
6. ***Be ready to guarantee your venture loans personally***. Unless you've been in business for several years, don't expect the bank to loan you money without evidence that you are ready to put some of your personal assets on the line. Be certain you think about this commitment beforehand. Just how far can you go without jeopardizing the well being of you and your family?
7. ***Don't hide things***. Be trustful and candid, even if it hurts. Chances are a good banker will discover what you're holding back anyway. You need to provide all the pertinent information so you can fully utilize your banker's expertise.
8. ***Become a customer of the bank's other services***. A valued customer will often obtain better service and consideration.

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Swisshelm Department Store, Inc.

John Carollo bought a small department store for \$120,000. He paid the sellers \$30,000 cash and gave them a 5-year note on the remaining \$90,000 at an interest rate of 15 percent a year.

A graduate of Stanford University with honors, Mr. Carollo had worked for 11 years with the Sears, Roebuck Company. His experience there included:

- Selling men's suits and appliances on the floor
- Managing a men's clothing department
- Serving as assistant branch manager

All along, his ambition was to have his own department store. Sears, he believed, would be a good place to learn every aspect of department-store operations. After all, Sears is the nation's biggest retailer.

Mr. Carollo worked for 10 years to learn the business. Then he started to search for a small department store in a small city. A year went by before he learned from a banker that a department store was for sale in New Philadelphia, a city of 16,000 persons. Three months later, he and the sellers agreed on the purchase price of \$120,000.

One week after he took over, Mr. Carollo and his accountant sat down to prepare a cash budget. It was now early August. Mr. Carollo knew that he would need a short-term loan to build up his inventory in anticipation of high consumer demand in September, when schools start, and again in December, when Christmas buying is in full swing.

The cash budget helped him decide how much to borrow and when to borrow. After analyzing past records, he came up with these estimates:

<u>Sales Revenue</u>	<u>Forecast</u>	<u>Monthly Expenses</u>	
June (actual)	\$24,000	Rent	\$3,000
July (actual)	20,000	Depreciation	500
August	28,000	Other expenses	900
September	52,000	Wages and salaries:	
October	44,000	August	\$2,800
November	76,000	September	3,200
December	96,000	October	3,200
January	22,000	November	3,600
February	32,000	December	3,600
		January	2,800

- Sales would be:
30 percent for cash
70 percent for credit
- Of the credit sales:
80 percent would be paid within one month of purchase
20 percent would be paid within two months

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Swisshelm Department Store, Inc.: Cash Budget Worksheet
(Exhibit 9B.1)

	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>
Cash inflow						
Sales revenues	_____	_____	_____	_____	_____	_____
Credit sales	_____	_____	_____	_____	_____	_____
Collections from						
One month before	_____	_____	_____	_____	_____	_____
Two months before	_____	_____	_____	_____	_____	_____
Subtotal	_____	_____	_____	_____	_____	_____
Cash sales	_____	_____	_____	_____	_____	_____
Total cash inflow	_____	_____	_____	_____	_____	_____
Cash outflow						
Inventory purchases	_____	_____	_____	_____	_____	_____
Wages and salaries	_____	_____	_____	_____	_____	_____
Rent	_____	_____	_____	_____	_____	_____
Other expenses	_____	_____	_____	_____	_____	_____
Interest	_____	_____	_____	_____	_____	_____
Total cash outflow	_____	_____	_____	_____	_____	_____
Cash gain or loss	_____	_____	_____	_____	_____	_____
Borrowings						
Opening cash balance	_____	_____	_____	_____	_____	_____
Balance before borrowing	_____	_____	_____	_____	_____	_____
Borrowings	_____	_____	_____	_____	_____	_____
Ending cash balance	_____	_____	_____	_____	_____	_____
Cumulative borrowings	_____	_____	_____	_____	_____	_____

- Credit sales outstanding on August 1 consisted of:
\$14,000 from July
\$ 3,260 from June
- Gross profit on sales would be 25 percent.
- Enough inventory would be purchased monthly to cover the next month's budgeted sales.
- All inventory purchases would be paid for in the same month they were made.
- A minimum cash balance of \$8,000 would be maintained.
- The cash balance was \$19,000 on August 1.
- All borrowings would be in multiples of \$1,000 and would be made or repaid on the first of the month.
- Interest at 1 percent a month would be paid when borrowings were repaid in full.

- Questions**
1. How much should Mr. Carollo borrow to meet seasonal demand? When should he repay his borrowings? (Prepare a cash budget on a separate piece of paper, using the worksheet in Exhibit 9B.1 as a guide.)
 2. How profitable does Mr. Carollo expect the store to be during the six months covered by his budget? (Prepare an income statements).
 3. Why is the cash budget useful to both Mr. Carollo and his banker?

**THE TIME VALUE OF MONEY AND
CAPITAL BUDGETING TECHNIQUES**

UNIT 7

Title: THE TIME VALUE OF MONEY AND CAPITAL BUDGETING TECHNIQUES

Purpose: This unit is designed to show clearly the importance of interest rates' effect on the value (purchasing power) of money and how that value changes over time. Participants are then shown how to use evaluate investments by the value of the money received over the investment's productive life.

Objective: To enable participants to evaluate "income streams" from investments and make the best possible choices with limited funds

Materials:

Transparencies:

Transparency 1	Payments for the Factors of Production
Transparency 2	The Components of Interest Rates
Transparency 3	Present Value of A Sum
Transparency 4	Future Value of A Sum
Transparency 5	Return on Investment (ROI)
Transparency 6	Payback Period (PBP)
Transparency 7	Internal Rate of Return (IRR)
Transparency 8	Net Present Value (NPV)
Transparency 9	NPV Terminology
Transparency 10	NPV Step 1
Transparency 11	NPV Step 2
Transparency 12	NPV Step 3
Transparency 13	NPV Step 4
Transparency 14	NPV Step 5
Transparency 15	NPV Step 6
Transparency 16	NPV Step 7
Transparency 17	NPV Step 8

Handouts:

Handout 1	The Components of Interest Rates
Handout 2	The Pencil Factory
Handout 3	Four Methods of Investment Analysis
Handout 4	Definitions
Handout 5	How to Calculate Net Present Value
Handout 6	Case Study 1: Adding a New Product Line
Handout 7	Case Study 2: Replacing old Equipment
Handout 8	Case Study 3: Adding a New Service

Class Exercises:

Handout 2	The Pencil Factory
Handout 3	Four Methods of Investment Analysis
Handout 4	Definitions
Handout 5	How to Calculate Net Present Value
Handout 6	Case Study 1: Adding a New Product Line
Handout 7	Case Study 2: Replacing old Equipment
Handout 8	Case Study 3: Adding a New Service

Product:

Investment Evaluation Techniques

Assignment:

Perform Time Value of Money Calculations
Apply Time Value of Money Calculations to Investment Choices
Calculate the Net Present Values of Competing Investment Options

Notes to Instructor:

This unit will not be easy for some people initially, but it should generate much interest from participants because of the inflation (interest) rates in Poland.

When ever possible use small objects, paper money and familiar situations to make the abstract ideas clear and concrete for the participants. This unit offers an excellent opportunity for people to "role play" as borrowers and lenders.

Please adjust interest rates and lengths of time in the U.S. examples so that they are suitable for the Polish situation unless your participants are curious about conditions in the U.S.

Make yourself confident with the calculations before you attempt to present them to your business owners or bankers. Finance professors over the world check their procedures and calculations before a class presentation to avoid frustrating delays for making corrections.

Participants should be advised to bring a hand calculator to class with them. A pencil or pen and paper is sufficient, but a calculator will save time and tedious hand calculations.

Invite representatives from a bank, finance company, and government loan or grant agency to discuss the way in which they: (a) establish loan repayment schedules; and (b) evaluate the buying power of a project's income stream over time.

Instructors should adjust times and materials to meet the needs of their participants. Some people may wish to focus on the Pencil Factory examples while others may focus on investment analysis techniques.

Instructors should provide the summary remarks.

Estimated time:

Introduction and Interest Rate Composition	30 minutes
Time Value of Money	90 minutes
Pencil Factory Example	*
Class Break	30 minutes
Four Methods of Investment Evaluation	30 minutes
Net Present Value Analysis (variable)	up to 180 minutes

Content	Process
<p>I. Introduction</p> <p>In this unit we will learn about the time value of money ideas in order to gain the ability to evaluate: major building projects, like a pencil factory; product line additions; equipment replacement decisions; or new services. All those are complex decisions, each with many good and bad points. Our goal is to show you a set of relatively objective evaluation techniques that have been used widely.</p> <p>All economists will tell you that there are three basic factors of production, land, labor, and capital. Whenever a business uses any of these three, the business must pay for their use. With land you purchase it or rent it. For labor you pay wages, salaries, or fees. In the case of capital you pay interest, the cost of money.</p> <p>II. Interest Rates or Discounting Rates</p> <p>The terms "interest rate" and "discount rate" have the same meaning which is, the rate paid by a business or person for the use of money. Any interest rate or discount rate has several components that include:</p> <ul style="list-style-type: none"> the actual "rental" charge for the use of the money; a risk premium based on the borrowed money's use as specified by the borrower; and a charge for the expected inflation during the time that the money has been borrowed. <p>Yes, inflation is a primary driving force behind interest rates. You all realize exactly what high inflation rates can do. The same amount of money will buy much less a year from now than it would buy now. That is where the "time value of</p>	<p>It is imperative that the instructor convinces the participants immediately that the time value of money is an important topic.</p> <p>Show TP 1.</p> <p>Display TP 2 and distribute HO 1 so that it may be annotated.</p> <p>Be certain that people understand these three components of interest rates.</p>

Content	Process
<p>money" term comes from. If some one "rents" money from you for a period of time, they can use it to buy things while you cannot. You must be compensated for this foregone consumption opportunity and for the loss in buying power your money suffered while it was rented to someone else.</p> <p>Inflation causes the use of calculations that include the time value of money to be essential to sound decisions in the Polish situation. Zlotys you receive in six months will not buy what those same zlotys buy today. This phenomenon must be included in the best evaluation of all business or investment opportunities.</p> <p>In the remaining sessions of this unit we shall show how to perform basic calculations and to use an example of a Pencil Factory. This example discusses the evaluation of a pencil factory. In the last session two widely accepted and popular evaluation techniques, Net Present Value and Profitability Index will be explained and applications will be shown.</p> <p>III. Present Value of a Sum of Money and Future Value of a Sum of Money</p> <p>In this section the ideas of present and future value of money will be explained. An example about a Pencil Factory will demonstrate the basic computations and how these ideas would be applied to a situation similar to your businesses.</p> <p>"Present Value of a Sum of Money" shows how much money that you will receive in the future would be worth to you now. In other words, if I agree to repay you 2,000,000 zł in the future, how many zł should you give me to use now? Will 2,000,000 zł buy the same amount of</p>	<p>Emphasize the component, expected inflation, that is part of interest rates. This should immediately be clear and important to Polish people.</p> <p>The object of this section is to simply make the ideas clear. Computations and a good working example are contained in section IV.</p> <p>Show TP 3. Instructors are strongly urged to draw time lines on the board so that participants may more easily visualize these ideas, i.e., when events actually occur.</p>

Content	Process
<p>_____ (bread, meat, clothing, coal) today that it will buy in six months? Of course not. In six months, 2,000,000 zł will buy fewer _____ (bread, meat, clothing, coal) than it will buy today. This is the idea of present value. Informed estimates of the exact amounts of difference can be made with the mathematical formula shown in section IV.</p> <p>"Future value of a sum of money" is the "mirror image" of present value. If one invests a certain number of złs today, how many złs should one receive in the future. How much increase should one receive for letting someone else use my money for a time? This mathematical estimation technique is also in section IV.</p> <p>In either case two items must be known: how long will the money be loaned or invested, and what is an appropriate interest rate (or rental charge) for the use of the money. After these two items are known/settled or negotiated, the computations may begin.</p>	<p>Instructors may bring a variety of products to exchange in these examples and to use for illustration of buying power. A basket of fresh, non-fragile fruits or vegetables would be a good choice because they are easily handled and small. If you bring fruit, you might share it with the participants at a break.</p> <p>Show TP 4.</p>
<p style="text-align: center;">The Pencil Factory</p> <p>Here is an example about a Polish Pencil Factory that should illustrate many of the ideas about time, money, and interest rates. In this example calculations show how a loan would be amortized into for repayment in equally sized installments. The bank and Mr. Kowalski act in a reasonable and expected manner in the Pencil Factory case.</p> <p>IV. Some Investment Analysis Techniques</p>	<p>Distribute HO 2 and go through all the procedures and calculations with the participants. Continue until you feel confident that the students understand all the concepts illustrated by the Pencil Factory case.</p>
<p>There are several widely used investment analysis techniques,</p> <p style="padding-left: 40px;">Return on Investment</p>	<p>Show TP 5 (ROI), 6 (PBP), 7 (IRR), and 8 (NPV) as you discuss each method. See attention points through out teaching note.</p>

Content	Process
<p>Payback Period Internal Rate of Return and Net Present Value</p> <p>Four Methods of Investment Analysis</p> <p>Businesses often analyze investments by using one or more of the following techniques: Return on Investment, Payback, Internal Rate of Return or Net Present Value. All of these methods rely on estimates of future costs and returns; each is computed and expressed differently, has its own decision rules, and has advantages and drawbacks.</p> <p><i>Return on Investment (ROI)</i> divides the total initial investment into a project by the total accounting profits realized throughout the project's lifetime. ROI is expressed as a percent of return on the initial investment. To decide if the project is acceptable, the computed ROI is compared to a "hurdle Rate" that the business person has chosen. If the ROI meets or exceeds the hurdle rate, the project can be accepted.</p> $ROI = \frac{\text{Initial Investment}}{\text{Total Accounting Profits}}$ <p>Of the four methods, ROI is the only one that looks at additional accounting profits instead of additional cash flows. This reduces the number of calculations involved, but cash flow may be more important than accounting profit for many businesses, especially small enterprises.</p> <p><i>Payback (PB)</i> divides the initial investment in a project by the annual net cash flow. This shows the number of years until the project pays for itself, or "payback." The business compares the years until payback and a "cut-off" number of years that was chosen earlier. If the project will</p>	<p>Distribute HO 3.</p> <p>Show TP 5.</p> <p>Emphasize the critical importance of cash flow. Encourage thought and discussion about cash. Compare the ideas of "cash" and "profit."</p> <p>Show TP 6.</p>

Content	Process
<p>pay for itself before the cut-off, the project is acceptable.</p>	
$PB = \frac{\text{Initial Investment}}{\text{Annual Net Cash Flow}}$	
<p>Payback does focus on net cash flows. Unfortunately, Payback ignores all net cash flows after the payback year. Also, PB and ROI share a serious flaw. Neither technique adjusts future receipts for the time value of money.</p>	
<p>Profits or net cash flows expected in the future should not be counted at face value. A future receipt should be adjusted according to when it's expected and the cost of money, a rate or percent. These two adjustments are combined into the time value of money to evaluate projects.</p>	<p>Emphasize the impact that inflation has on the future receipts of money. This should be obvious in the Polish situation.</p>
<p><i>Internal Rate of Return (IRR)</i> finds the rate at which the initial investment equals the total net cash flows that have been adjusted by the time value of money. That rate, the project's yield or profitability, is the IRR. The decision to accept or reject a project is made by comparing the IRR with a "hurdle rate." If the IRR meets or exceeds the hurdle rate, the project can be accepted.</p>	
<p>Initial Investment = The Sum of [(r) (Annual Net Cash flows)]</p>	<p>Show TP 7.</p>
<p>where "r" is the adjustment for the Internal Rate of Return.</p>	
<p>IRR uses the time value of money to show the profitability of a project, but IRR does have some problems. One problem is that IRR is unreliable if a project has a year of net cash outflow (other than the initial investment). Dismantling equipment or facilities, or environmental restoration at the project's end could easi-</p>	

Content	Process
<p><i>flawless, the most dependable flexible investment analysis method is Net Present Value. NPV looks at cash flows, incorporates the time value of money, always gives one answer, and shows its answer in dollars and cents.</i></p> <p>For these reasons our attention will now be focused on the Net Present Value technique. In order to facilitate our discussion we need to use consistent definitions or terminology.</p> <p>V. Definitions</p> <p>Net Present Value uses consistent terminology regarding what sort of investment or project is analyzed. If you understand these basic terms, examples will be clearer, and you can use NPV technique more quickly.</p> <p>Cash-Flows-In. These are additional (new) revenues that your business will have each year because of the new project. Savings in labor, materials, maintenance, etc. are also cash-flows-in. The key is to include only revenues or savings that your business would not have had without the project. Estimate this amount of money for each year separately.</p> <p>Cash-Flows-Out. Any additional, on-going, cash expenses that the new project will require are cash-flows-out. In other words, any money that is spent to produce the new sales or get the extra savings is a cash-flows-out. Some typical expenses are labor, utilities, commissions, materials, maintenance, and insurance. If you expect increased revenues, you must also pay additional income taxes. Extra income taxes are definitely part of cash-flows-out. Do not include one-time, start-up costs; those will be handled separately. Estimate cash-flows-out for each year separately.</p>	<p>Show TP 9 and reference each term as you discuss it. Distribute HO 4 so that people may annotate the pages.</p> <p>As you go through these definitions try to be certain that participants understand each "idea." If the definitions are clear, the NPV calculation will seem much more "user-friendly."</p>

Content	Process
<p>Two expenses might appear on your "books" because of the new projects but should <i>not</i> be included as part of cash-flows-out: (a) depreciation; and (b) interest expense. Depreciation is not a "cash" expense, it is an accounting expense. You do not write a check to someone each year for depreciation expense. While interest expenses is a cash expense, it is automatically included when the net cash flows are adjusted for the time value of money. If you added interest expense into the cash-flows-out, it would be double counted. Both of these types of expenses affect the amount of income taxes, and therefore must be used in calculating income tax expense before subtracting them from cash-flows-out.</p> <p>Net Cash Flows. Subtract the cash-flows-out from the cash-flows-in for each year. The results are the net cash flows throughout the life of the project.</p> <p>Time Value of Money. The time value of money depends on two pieces of information: when the money will be received and the required rate of return. If you receive \$100 one year from now, it will be worth less in buying power than \$100 today. If you receive \$100 ten years from now, that future \$100 is worth much less than \$100 today. How much less is determined by the "required rate of return." The required rate of return is how much you would agree to pay to "rent" money in order to use it. One factor that determines this cost is where you could get the money--from your business, from your bank, or elsewhere.</p> <p>Time Value of Money Adjustment. This is the result of calculations using both components from the time value of money. It can be found in published tables, is built into many calculators, or is calculated by</p>	<p>Tell your students that a simple example will follow immediately. The example may help to clarify any questions that they may have.</p> <p>Emphasize how interest expense and depreciation expense are not included as cash-flows-out. Those two items are used at another point in the calculations.</p> <p>Use zlotys or dollars as you wish. Encourage discussion on the point that 1,000,000 zlotys today are worth less than 1,000,000 zlotys two years ago, i.e., 1M zl will buy fewer goods and services now than then.</p>

Content	Process
<p>hand. This number will automatically adjust money that you expect to receive in the future so that you know what that future receipt is worth to you today.</p> <p>Adjusted Net Cash Flows. This is each year's net cash flow multiplied by the adjustment for that year. This is the "present value" of each year's net cash flows. After all the years' adjusted net cash flows are added together, you have the total present value of all the benefits this project will have for your business.</p> <p>Initial Costs. Initial costs include all the start-up costs of a project. Examples are delivery charges, installation, operator training, roll-out advertising, purchase price or shop "down time." Many other expenses could be an initial cost for your project. The important decision rule is: Is this a one-time or a recurring expense? One-time expenses are initial costs. Total these expenses and you have the project's initial costs.</p> <p>Net Present Value. This is the difference between the Adjusted Net Cash Flows and the Initial Costs. In other words, this is the absolute bottom line when total costs have been deducted from total benefits throughout the life of a project. If the NPV is greater than zero, the project exceeds the rate of return you have established to compensate you for the risks accepted. If the NPV is less than zero, the project does not meet your return requirements and therefore is to be rejected. At zero, the project will just meet your required return. NPV can evaluate one project or compare many projects. The project with the largest NPV is best if you compare projects that are about the same size and have the same degree of risk.</p>	<p>Allow discussion. Encourage students to talk about their own experience with purchases' total costs or a new project's total costs.</p> <p>Distribute HO 5 before you begin this discussion. Display TP 10 through 17 as you cover each step.</p>

Content	Process										
<p>Now everyone is using the same language, so we can work through a simplified example.</p> <p>VI. How to Calculate Net Present Value</p> <p>Net Present Value (NPV) is a technique that evaluates investments and gives you an answer in dollars and cents. NPV has two strong points: it looks at cash flows and considers the time value of money. If you need to make a decision about investments like a new product line, new or replacement equipment, or a new service, NPV can give you clear answers. These are the steps to follow to find a project's NPV.</p> <p><i>Step 1: Estimate all the additional cash-flows-in</i> that your business will have throughout the project's life. Cash-flows-in could be increased sales, or savings such as decreased materials or labor. Example: Your business will have labor savings from a new attachment. You expect the attachment to be worn out in four years.</p> <table> <thead> <tr> <th></th> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> </tr> </thead> <tbody> <tr> <td>Additional Cash-Flows-In</td> <td>\$5,200</td> <td>7,800</td> <td>10,400</td> <td>10,400</td> </tr> </tbody> </table> <p><i>Step 2: Estimate all the additional cash-flows-out</i> that your business will have throughout the project's life. Cash-flows-out would be on-going expenses such as materials, labor, insurance, or maintenance that increase because of the project. Keep these four points in mind. Start-up costs are included in Step 6; don't count them here. Don't add in depreciation; it's not a cash expense. Don't include interest expense; it's accounted for in Step 5. Do add extra income taxes due on the increased income from the project. Remember, however, that both depreciation and interest affect the amount of income</p>		Year 1	Year 2	Year 3	Year 4	Additional Cash-Flows-In	\$5,200	7,800	10,400	10,400	<p>Reassure participants that this example is a direct and simple application of the definitions that have just been discussed.</p> <p>You may wish to put these calculations on a chalk board, flip chart, or on transparencies.</p>
	Year 1	Year 2	Year 3	Year 4							
Additional Cash-Flows-In	\$5,200	7,800	10,400	10,400							

Content	Process																				
<p>taxes that will be paid, though the actual amounts of both expenses should not be counted as cash-flow-out. Example: The new attachment needs more expensive maintenance; more income taxes will be due on the extra net income.</p>																					
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<p><i>Step 3: Subtract additional cash-flows-out from additional cash-flows-in to find the new project's net cash flows. Example:</i></p>	<p>It is strongly advised to either write all the calculations on a chalk board, overhead screens, or flip chart sheets.</p>																				
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<p><i>Step 4: Decide what your required rate of return is.</i> Money always costs something whether you borrow from the bank, get it from relatives, or take cash out of your business. The cost of money includes the explicit cost of money, such as the interest paid on a loan, together with a premium for such things as risk. Usually, bankers will determine this premium to be anywhere in the range of 3 percent to 10 percent, depending upon the type of project, the credit history of the borrower, and current economic conditions, among other things.</p>	<p>Talk about risk premiums with your participants.</p>																				
<p>After you decide on your required return, choose the correct adjustment for each time/required return combination. These adjustments are specific for each combination. They can be found in present value tables, in many calculators' memories or you can compute them. Example: You choose 17 percent because this is the return you have been earning on profits that have been reinvested in the company dur-</p>																					

Content	Process																				
<p>ing the past five years. These are each year's adjustments.</p>																					
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<p><i>Step 5: Multiply each of the net cash flows by the appropriate adjustment. After you have done the multiplication, all the future net cash flows are expressed in current dollars. Example:</i></p>	<p>Encourage people to annotate their handouts.</p>																				
<table> <thead> <tr> <th></th> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> </tr> </thead> <tbody> <tr> <td>Adjustment (@ 17%)</td> <td>0.8547</td> <td>0.7305</td> <td>0.6244</td> <td>0.5337</td> </tr> <tr> <td>Net Cash Flows</td> <td><u>\$1,200</u></td> <td>3,800</td> <td><u>6,400</u></td> <td><u>3,400</u></td> </tr> <tr> <td>Adjusted Net Cash Flows</td> <td>\$1,026</td> <td>2,776</td> <td>3,996</td> <td>1,815</td> </tr> </tbody> </table>		Year 1	Year 2	Year 3	Year 4	Adjustment (@ 17%)	0.8547	0.7305	0.6244	0.5337	Net Cash Flows	<u>\$1,200</u>	3,800	<u>6,400</u>	<u>3,400</u>	Adjusted Net Cash Flows	\$1,026	2,776	3,996	1,815	
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<p><i>Step 6: Add the adjusted net cash flows together. The result is the total adjusted net cash flow. Example:</i></p>																					
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$\$1,026 + 2,776 + 3,996 + 1,815 = \$9,613$																					
<p><i>Step 7: Estimate the total initial costs. These are costs such as "purchase" price, installation, roll-out advertising, or any other one-time expense. Example: You will need to buy the attachment, train two operators, and pay for some new wiring.</i></p>	<p>At some point participants may need some time to collect their thought. These concepts are initially over-whelming for many people.</p>																				
<p>Initial Costs = \$5,000</p>																					
<p><i>Step 8: Subtract the initial costs from the total adjusted net cash flows to find the Net Present Value of the new project. This is the value of the project's benefits to your business after all costs have been deducted--those are for the entire project's life. If the NPV is equal to or greater than zero, take it! It meets or exceeds the</i></p>																					

Content	Process
<p>returns you have determined are required to make the investment. If net present value is less than zero, the project does not provide the returns you feel are necessary to warrant taking the risk on the project. Example: The new attachment would be profitable for your business.</p>	<p>Emphasize to students that this is a highly simplified example.</p>
<p>Total Adjusted Net Cash Flow \$9,613 (minus) Initial Costs <u>5,000</u></p> <p>New Present Value \$4,613</p>	
<p>It is important to make the best estimates possible because the answers that you get with NPV will depend on the estimates that you make. Careless estimates could give you inaccurate results. With inaccurate results, you might pass up a good opportunity, or worse, you may invest in a losing project. It is also important to be as consistent as possible when comparing projects, equipment, new products, or services. If you are not consistent with how you "count" or estimate expenses and revenues, you have lost the opportunity to make a fair judgment of comparison. A consistent approach to estimation lets you compare projects, equipment, or services fairly.</p>	<p>Advise the participants that more complex and realistic examples follow.</p>
<p>There are many business decisions for which Net Present Value can help you answer questions.</p>	<p>Each instructor may include or delete this part of the unit for reasons such as:</p>
<p>VII. Three Questions that Net Present Value Analysis Can Help You Answer</p>	<ul style="list-style-type: none"> (a) instructor's comfort with the material; (b) the students may find these examples too simple; or (c) the students may find these examples too complex.
<p>Should I offer an additional product line?</p>	<p>Depreciation laws, tax laws, and appropriate interest rate levels must be adjusted in Poland to suit the Polish situation. This may be done by the instructor or using the advice and counsel of a tax or business law expert.</p>
<p>Should I replace an old piece of equipment?</p>	<p>At a minimum: (a) years could be transformed to months; (b) dollars changed to zlotys; (c) interest rates adjusted to the</p>
<p>Will an extra service pay off?</p>	

Content	Process												
<p>One technique that can help you answer these questions in dollars-and-cents terms is Net Present Value (NPV). This article will use three case studies to show how to use the NPV formula to get answers.</p> <p>Case Study 1: Adding a new product line</p> <p>Let's say that you are the manager of the Sure-Fire Sportswear Company. You are thinking about introducing a new sports applique to your product line. You believe that the demand for this new applique will be great for five years but will evaporate after that. (Sports fans can be fickle.) Over that five-year-period you feel you can make reasonable guesses about your expenses and revenues. You estimate that extra sales for Sure-Fire from the applique will look like this:</p> <table> <thead> <tr> <th></th> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> <th>Year 5</th> </tr> </thead> <tbody> <tr> <td>Cash-Flows-In</td> <td>\$15,000</td> <td>20,000</td> <td>25,000</td> <td>20,000</td> <td>15,000</td> </tr> </tbody> </table> <p>After you have made a reasonable estimate of the additional cash-flows-in, you need to estimate the extra commissions, labor, material, and other expenses, that Sure-Fire will incur to produce those extra sales. These make up the additional cash-flows-out.</p> <p>Additional cash-flows-out for a company could include increases in expenses like these: labor, supplies, commissions, advertising, insurance, utilities, maintenance, or income taxes. These additional cash-flows-out should not include the costs to start a project, such as the purchase price of equipment, a franchise, or a license. Start-up or initial costs will figure into the NPV calculations separately. Additional cash-flows-out are the kinds of costs that a business would have throughout the life of the project.</p>		Year 1	Year 2	Year 3	Year 4	Year 5	Cash-Flows-In	\$15,000	20,000	25,000	20,000	15,000	<p>Polish situation; (d) Polish depreciation and tax laws substituted and accompanying adjustments made; and (e) footnotes should be altered according to Polish depreciation and tax laws.</p> <p>Distribute HO 6 to students. You may wish to do this a day or days in advance so that people may read or study the case before class.</p> <p>Cases 1 through 3 (HO 6-HO 8) have been presented in ascending order of complexity. Many of the concepts presented in Case Study 1 (HO 6) are vital to the understanding of Case Study 2 (HO 7) and 3 (HO 8). For these reasons it is strongly advised to present the cases in the order of their number, i.e., 1 presented first and 3 presented last.</p>
	Year 1	Year 2	Year 3	Year 4	Year 5								
Cash-Flows-In	\$15,000	20,000	25,000	20,000	15,000								

Content	Process												
<p>Look at the new applique at the sports-wear company again. Sure-Fire would have some additional costs on a regular basis throughout the five years that it manufactured the new applique. When you total the extra materials, labor, commissions, income taxes, and advertising that Sure-Fire would have to pay to bring the applique to its customers, the best estimates of the extra costs look like this:</p> <table> <thead> <tr> <th></th> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> <th>Year 5</th> </tr> </thead> <tbody> <tr> <td>Cash-Flows- Out</td> <td>\$12,000</td> <td>13,000</td> <td>13,000</td> <td>11,000</td> <td>8,000</td> </tr> </tbody> </table> <p>Always remember to include extra income taxes that would be due as part of the cash-flows-out. An increase in income taxes from the extra profits Sure-Fire will have on the new applique has been included in the cash-flows-out that are shown.</p> <p>Two Exceptions. Two items that you might often think of as expenses have not been mentioned as a cash-flows-out. Most businesses borrow money occasionally, or they may have revolving-type credit lines. Because of this, many businesses have interest expenses. Interest expense was not mentioned in the cash-flows-out for Sure-Fire. The other missing expense is depreciation. Almost all businesses with vehicles, equipment, or buildings "on the books" are showing a depreciation expense on their income tax forms and financial statements. Why aren't these two expenses included as cash-flows-out?</p> <p>If you included the interest expense in the additional cash-flows-out, it would be double counting. Why? Interest expenses are computed and included automatically in the discount rate you use to adjust the net cash flows.</p>		Year 1	Year 2	Year 3	Year 4	Year 5	Cash-Flows- Out	\$12,000	13,000	13,000	11,000	8,000	<p>Interest expense and depreciation expense must be excluded from cash-flow-out! This is an extremely important idea. Student must grasp this to perform NPV calculations correctly. Reassure people that these numbers are not disregarded; they are included at a later point in the calculations.</p> <p>Instructors will find it necessary to use correct depreciation techniques for the Polish Financial accounting laws.</p>
	Year 1	Year 2	Year 3	Year 4	Year 5								
Cash-Flows- Out	\$12,000	13,000	13,000	11,000	8,000								

Content	Process
<p>Depreciation expense is not listed because it is a "noncash" expense; NPV includes only cash items. Yes, you bought and may have paid for the vehicle, equipment, or building in cash. However, depreciation laws require that the cost of that sort of purchase be spread over several years on the books and for tax purposes. Like interest expense, net present value does include depreciation as an expense. All the start-up costs are included as initial costs.</p> <p>For example, when you buy equipment and pay for it, you are not allowed to show all the cost of the equipment as an expense for the year that you bought the equipment on your income tax forms.¹ You and your accountant or tax advisor have to set up a depreciation schedule. With the depreciation schedule, you deduct the equipment's cost, but the cost is divided up and spread over several years.² Eventually you deduct all the equipment's cost through depreciation expenses. Depreciation is called an expense each year at tax time although no additional cash has changed hands. Because no cash changes hands, depreciation is not included in cash-flows-out.</p> <p>Even though neither interest nor depreciation are included as a cash-flows-out, they do have an important part in net present value calculations. Both must be calculated to determine what income taxes are due. This will be shown later.</p> <p>Net Cash Flows. After cash-flows-in and cash-flows-out are estimated, determining the net cash flows is a straight forward step. Subtract the cash-flows-out from the cash-flows-in. For instance, the net cash flows for the Sure-Fire Sportswear Company from the new applique are:</p>	<p>Emphasize the effect and importance of interest expenses and depreciation expenses upon the calculation of income taxes.</p>

Content	Process																																										
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 15%;">Year 1</th> <th style="width: 15%;">Year 2</th> <th style="width: 15%;">Year 3</th> <th style="width: 15%;">Year 4</th> <th style="width: 15%;">Year 5</th> </tr> </thead> <tbody> <tr> <td>Cash-Flows-</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> In</td> <td>\$15,000</td> <td>20,000</td> <td>25,000</td> <td>20,000</td> <td>15,000</td> </tr> <tr> <td>Cash-Flows-</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> Out</td> <td><u>12,000</u></td> <td><u>13,000</u></td> <td><u>13,000</u></td> <td><u>11,000</u></td> <td><u>8,000</u></td> </tr> <tr> <td>Net Cash</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> Flows</td> <td>\$ 3,000</td> <td>7,000</td> <td>12,000</td> <td>9,000</td> <td>7,000</td> </tr> </tbody> </table> <p>Obviously, all those net cash flows are <i>not</i> coming into Sure-Fire at the same time. What is not so obvious is that if cash comes to a business later rather than sooner, it is worth less to the business. Adjusting dollars for timing and for their cost is where the time value of money applies to the NPV calculations.³</p> <p>Adjusting for the time value of money</p> <p>The decisions you make about which opportunities to pursue will probably affect your business's net cash flows for more than a year. It may be two years, three years, or even longer before all the effects of new projects that you have chosen can be realized. Unless all the benefits from a project would come in one year or less, the time value of money must be taken into account to get a true picture of project's financial performance. The reason is that money received now has more value than the same amount of money if it is received later. For instance, in 1948 a new, fully-equipped, luxury car could be bought for \$8,000. In 1990, \$8,000 would buy a new, modest economy car. The same \$8,000 is not worth as much in 1990 as it was in 1948.</p> <p>To include the time value of money, the net cash flows are adjusted to reflect two things: (a) how long it will be before you actually get the net cash flows; and (b) what you determine is your required rate of return for the project. You have already made an estimate of when you would receive the net cash flows. You</p>		Year 1	Year 2	Year 3	Year 4	Year 5	Cash-Flows-						In	\$15,000	20,000	25,000	20,000	15,000	Cash-Flows-						Out	<u>12,000</u>	<u>13,000</u>	<u>13,000</u>	<u>11,000</u>	<u>8,000</u>	Net Cash						Flows	\$ 3,000	7,000	12,000	9,000	7,000	<p>Encourage students to discuss this idea as small groups or in an open forum in the session until you are confident that they understand the time value of money concept.</p> <p>Reiterate that the time until receipt and the required rate of return are the two fundamental components of the time value of money.</p>
	Year 1	Year 2	Year 3	Year 4	Year 5																																						
Cash-Flows-																																											
In	\$15,000	20,000	25,000	20,000	15,000																																						
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Net Cash																																											
Flows	\$ 3,000	7,000	12,000	9,000	7,000																																						

Content	Process
<p>can make an estimate for the cost of money on your own, talk with your banker or financier, or confer with an advisor. The real value of a project can be determined only if you calculate what future cash flows are worth today, i.e., in current dollars.</p> <p>To adjust the net cash flows for a proposed project correctly, you must decide what your cost of money is. You may be able to take all necessary cash out of the operations of your current business, but that money is not free. If you or a partner put more money in the business as owners' equity specifically for the proposed project, that is not free either. Obviously if you borrow money, a cost is involved, interest charges.</p> <p>Several factors are used in determining the required rate of return. If you take money from your ongoing operations, the rate would include the return that you expect from your present business. If you get the money by increasing owners' equity, you or your partner have given up the opportunity to invest that money elsewhere. The required rate would then be the return on the alternative investment that you passed up plus an amount to compensate you for the risk involved in investing in this project. If you combine some of these sources to raise the money for a project, adjust the cost of money accordingly.</p> <p>Another approach to financing the project is borrowing the money. In this case, the interest paid on the loan would be a factor in your required rate of return decision.</p> <p>Regardless of the approach that you take, assume that all the money will be received at the end of each year. That makes the</p>	<p>Be confident that all participants understand that the riskiness of a project must be considered when the business person determines his or her required rate of return.</p>

Content	Process																														
<p>calculations easier. To illustrate how to make the adjustment to net cash flows, consider the sports applique example.</p> <p>The new applique that Sure-Fire is considering would produce cash flows for five years. For the applique the net cash flows over five years will look like this:</p> <table> <thead> <tr> <th></th> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> <th>Year 5</th> </tr> </thead> <tbody> <tr> <td>Net Cash Flows</td> <td>\$3,000</td> <td>7,000</td> <td>12,000</td> <td>9,000</td> <td>7,000</td> </tr> </tbody> </table> <p>These amounts are the net cash flows that you will adjust because you will receive them after one or more years have passed.</p> <p>With the applique, you have decided to use a 15 percent required rate of return for Sure-Fire's investment. This is the rate at which the owners feel they would be compensated for the investment in the project as well as be able to pay back any debt incurred to finance the project.</p> <p>You can find the adjustment factors for the 15 percent return Sure-Fire has decided on by using a business calculator or a printed table of these numbers. Or, you can calculate them for yourself.⁴ The adjustments values for 15 percent and net cash flows for the applique are:</p> <table> <thead> <tr> <th></th> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> <th>Year 5</th> </tr> </thead> <tbody> <tr> <td>Net Cash Flows</td> <td>\$3,000</td> <td>7,000</td> <td>12,000</td> <td>9,000</td> <td>7,000</td> </tr> <tr> <td>Adjustment</td> <td>0.8696</td> <td>0.7561</td> <td>0.6575</td> <td>0.5718</td> <td>0.4972</td> </tr> </tbody> </table> <p>To find the applique's adjusted net cash flow, multiply the net cash flows for each year by the adjustment for each year. After you have done the multiplication, total the five years. This sum is the aggregate adjusted net cash flow. For the new applique the total adjusted net cash flow would be:</p>		Year 1	Year 2	Year 3	Year 4	Year 5	Net Cash Flows	\$3,000	7,000	12,000	9,000	7,000		Year 1	Year 2	Year 3	Year 4	Year 5	Net Cash Flows	\$3,000	7,000	12,000	9,000	7,000	Adjustment	0.8696	0.7561	0.6575	0.5718	0.4972	<p>Physically show participants the adjustment factors in a hand-held calculator and/or from a table of values. A display of concrete objects helps people to grasp abstract ideas. These printed tables are commonly found in Finance text books.</p> <p>Encourage participants to annotate their HO 6.</p>
	Year 1	Year 2	Year 3	Year 4	Year 5																										
Net Cash Flows	\$3,000	7,000	12,000	9,000	7,000																										
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Content						Process
	Year 1	Year 2	Year 3	Year 4	Year 5	
Net Cash						
Flows	\$3,000	7,000	12,000	9,000	7,000	
Adjustment						
(at 15%)	0.8698	0.7561	0.6575	0.5718	0.4972	
Adjusted Net						
Cash Flows						
(at 15%)	\$2,609	5,293	7,890	5,146	3,480	
Total Adjusted Net						
Cash Flow (at 15%)						
	$\$2,609 + 5,293 + 7,890 + 5,146 + 3,480 = \$24,418$					
	<p>You might want to compare these figures to the unadjusted net cash flows. There is a significant difference all of which is due to the time value of money.</p>					<p>If possible, write the calculations on a chalk board or transparency screen.</p>
	Year 1	Year 2	Year 3	Year 4	Year 5	
Net Cash						
Flows	\$3,000	7,000	12,000	9,000	7,000	
Adjusted Net						
Cash Flows						
(at 15%)	2,609	5,293	7,890	5,146	3,480	
	<p>Remember that the adjusted net cash flows reflect the value of the cash flows from the project in current (today's dollars). Now that the adjusted net cash flows have been calculated, the next step in the NPV calculation is to look at the initial costs.</p>					
	<p>Initial Costs. All the expenses required to get the new project, product, or equipment started are initial costs. These costs are one-time events. If you are showing the same cost more than once, it should be included in the cash-flows-out. The type of costs usually included as start-up costs are: purchase price, installation expenses, freight-in or delivery, "roll-out" advertising, and one-time training costs. Let's go back to the sportswear applique example. Sure-Fire's sports applique projects would have some one-time start-up costs like: sales training, operator training, new sewing machine attachments, and miscellaneous costs. The total of these</p>					

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<p>initial costs for the applique would be \$15,000. It is not necessary to adjust any of the initial costs. You are spending all the money now not next year or the year after that. Since the money would be spent currently, it requires no adjustment; a dollar today is worth a dollar.</p> <p>Net Present Value. Now Sure-Fire has all the estimates to calculate the net present value of manufacturing the applique. Adjusted net cash flows for the applique were \$24,418 and initial costs were \$15,000. The NPV for the applique project for Sure-Fire would be:</p> <p>Adjusted Net Cash Flow - Initial Costs = NPV \$24,418 - 15,000 = \$9,418</p> <p>Since the NPV of the new sports applique would be \$9,418, it is definitely a good opportunity. Sure-Fire would cover all costs including the 15 percent required rate of return on the project, and, in addition to that, it would make \$9,418 in today's dollars.</p> <p>There are some reasons why Sure-Fire might not make the applique. Something even better could come along. It also might be impossible to raise the \$15,000 initial costs from inside the business, or with additional contributions from owners, or to borrow it. Sure-Fire might be able to borrow the money if it were willing to pay more to get the money. However, one important thing to remember is: Any change in the cost of money changes the value of a project.</p> <p>Different Costs of Money</p> <p>If the cost of money changes, the value of any project will change. The rate you use for adjusting the cash flow will account</p>	
	<p>This is an important example that shows how an interest rate change could change the acceptability of a project. No change</p>

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for all of the change. In this way a project's value can increase or decrease even though net cash flows and initial costs have not changed. Sure-Fire's applique project can illustrate this point.

For example, let's say that everything about the applique is the same except the required rate of return has changed. Initial costs for the applique are \$15,000 and the net cash flow will last for five years at \$3,000, \$7,000, \$12,000, \$9,000, and \$7,000. However, your banker has decided to lend you money for the applique at a lesser rate. In other words, your required rate of return can be lowered to, say, 10 percent. That lower rate will change the adjustment used to discount the net cash flows, and ultimately the NPV of the applique project.

Look at what happens to the value of the applique. Keep in mind that the net cash flows over the next five years and the initial costs for the applique are the same. The one change for the applique would be the rate that Sure-Fire uses to adjust the net cash flows. When you use an adjustment for a 10 percent required rate of return, these are the figures:

	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash					
Flows	\$3,000	7,000	12,000	9,000	7,000
Adjustment					
(at 10%)	0.9091	0.8264	0.7513	0.6850	0.6209
Adjusted Net					
Cash Flows					
(at 10%)	\$2,727	5,785	9,016	6,147	4,346
Total Adjusted Net					
Cash Flows (at 10%)					

$$\$2,757 + 5,785 + 9,016 + 6,147 + 4,346 = \$28,021$$

When the net cash flows are adjusted at a 10 percent rate, the sum is higher than if the net cash flows are adjusted at 15 percent rate. This is because the required

in cash flows is necessary to make this difference.

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rate of return has been lowered from 15 percent to 10 percent. The difference in the two adjusted net cash flow totals is caused only by the different adjustment rates that reflect the change in the cost of money. The ultimate measure of the applique's value is the money that Sure-Fire will net from the project, the NPV. Since the required return has decreased, NPV will increase.

Adjusted

$$\begin{aligned} \text{Net Cash Flow} - \text{Initial Costs} &= \text{NPV} \\ \$28,021 - \$15,000 &= \$13,021 \end{aligned}$$

The applique's net present value is higher by \$3,603. The \$3,603 increase in value between the NPVs at a 15 percent versus a 10 percent rate is caused only by the change in the required rate of return. The net cash flows were exactly the same before they were adjusted.

Notice that the difference in the adjusted net cash flows is the same as the difference in the NPVs.

	Sum of the Adjusted Net Cash Flow	-	Initial Costs	=	Net Present Value
Adjusted at 10%	\$28,021	-	\$15,000	=	\$13,021
Adjusted at 15%	<u>24,418</u>	-	<u>15,000</u>	=	<u>9,418</u>
Difference	\$3,603		0		\$3,603

The initial costs did not change; those dollars are spent now. Since the purpose of adjusting dollars amounts is to determine what they are worth now, the present value of money that you spend now is 100 percent.

On the other hand, if the required rate of return increases due to such factors as an increased borrowing rate, poor economic conditions, or a perceived high level of

Most people are astonished the first time that they see this. Give your participants some class time to react to this difference caused only by interest rates. Encourage discussion.

Continue to refer to HO 6 as you proceed through the material.

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<p>risk from the project being considered, the value of an investment will fall. Go back to the applique and see what happens when Sure-Fire adjusts the net cash flows as a 20 percent rate. The unadjusted net cash flows are the same over five years and the initial costs are the same. Only the adjustment rate is changed because the required rate of return has changed. Here is how: Sure-Fire's applique evaluation will change because of the higher required return:</p>																																																							
<table> <tr> <td>Net Cash</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Flows</td> <td>\$3,000</td> <td>7,000</td> <td>12,000</td> <td>9,000</td> <td>7,000</td> </tr> <tr> <td>Adjustment</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(at 20%)</td> <td>0.8333</td> <td>0.6944</td> <td>0.5787</td> <td>0.4823</td> <td>0.4019</td> </tr> <tr> <td>Adjusted Net</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Cash Flows</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(at 20%)</td> <td>\$2,500</td> <td>4,861</td> <td>6,944</td> <td>4,341</td> <td>2,813</td> </tr> <tr> <td>Sum of the Adjusted Net</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Cash Flows (at 20%)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Net Cash						Flows	\$3,000	7,000	12,000	9,000	7,000	Adjustment						(at 20%)	0.8333	0.6944	0.5787	0.4823	0.4019	Adjusted Net						Cash Flows						(at 20%)	\$2,500	4,861	6,944	4,341	2,813	Sum of the Adjusted Net						Cash Flows (at 20%)						
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$\$2,500 + 4,861 + 6,944 + 4,341 + 2,813 = \$21,459$																																																							
<p>The sum of the adjusted net cash flows is lower at 20 percent than at 15 percent. At 15 percent that sum was \$24,418 and at 20 percent the sum is \$21,459. All of the \$2,959 decrease in the applique's value is caused by an increase in the required rate of return from 15 percent to 20 percent. The difference of \$2,959 in the two sums will carry through to the NPVs.</p>																																																							
<p>Adjusted Net Cash Flow - Initial Costs = NPV $\\$21,459 - 15,000 = \\$6,569$</p>																																																							
<p>The net present value when money costs 20 percent is lower by \$2,959 than when the discount rate was 15 percent. The \$2,959 difference between the NPVs at 15 percent and 20 percent is caused only by the rate used to adjust the net cash flows. This change reflects an increase in the required rate of return. The net cash flows</p>																																																							

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Process

were exactly the same before they were adjusted for this increase in required return. Again the difference in the adjusted net cash flows is the same as the difference in the net present values.

	Sum of the Adjusted Net Cash Flow	Initial Costs	Net Present Value
Adjusted at 20%	\$21,459	- \$15,000	= \$6,459
Adjusted at 15%	<u>24,418</u>	- <u>15,000</u>	= <u>9,418</u>
Difference	- \$2,959	0	- \$2,959

These examples about Sure-Fire's new applique show more than the great difference that the cost of money can make. They also illustrate why interest expense is not included in the cash-flows-out to find the net cash flow; it would be double counting to include interest expenses in cash-flows-out beyond calculating the effect on income taxes. The required rate of return that you choose to adjust the net cash flows will take the time value of money into account automatically whether you borrow the money, contribute equity, or take it out of your business.

Whether the cost of money is 10 percent, 15 percent, or 20 percent, the applique is still a good investment for Sure-Fire. Although the NPV of the applique is different with each required rate of return, the NPV is always far greater than zero between rates of 10 percent and 20 percent.

Note that if the new applique earned exactly a 20 percent return, the NPV would have been zero. Since the applique's NPV is greater than zero when money costs 20 percent, its return is greater than 20 percent. If through trial and error, a person increased the adjustment rate enough, he or she would find that the discount rate that would make the NPV of the project zero, is just under 35.67 per-

Once again the instructor may feel almost like a magician when the students are somewhat amazed at how one simple change can make profound differences. The one change is the simple change of order in which cash is received.

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<p>cent.⁵ If you use an adjustment rate higher than this, the NPV of the applique will be negative. Clearly, project's NPVs change with the rates of return that are used to adjust the net cash flows. The other factor that can change the NPV of the same project is the net cash flows' <i>timing</i>.</p> <p>Different timing of net cash flows</p> <p>Net present value not only accounts for the cost of money, it accounts for the timing of net cash flows, too. Two projects could have the same total net cash flows, but differences in the timing of those cash flows could have a great effect on how valuable the project would be. Whether a project receives larger cash flows earlier or later in its life can make a great difference in the project's value. If a project receives larger cash flows sooner, it will be more valuable than a similar project that receives the same larger cash flows later. Sure-Fire's applique can illustrate this point.</p> <p>The applique has a total net cash flow of \$38,000. A competitor has another applique that has the same total net cash flow, \$38,000. However, the timing of the cash flows is different. Sure-Fire's applique would probably be a slower starter because it is for a fledgling hockey team. The competitor's applique would probably have higher sales initially and have lower sales later. The competitor's applique is for a hockey team that is established and doing well now, but many of the players are about to pass their athletic prime.</p>	

Content			Process
	Sure-Fire's Applique Net Cash Flows	Competitor's Applique Net Cash Flows	
Year 1	\$ 3,000	\$ 7,000	
Year 2	7,000	12,000	
Year 3	12,000	9,000	
Year 4	9,000	7,000	
Year 5	<u>7,000</u>	<u>3,000</u>	
Total Net Cash Flow	\$38,000	\$38,000	Give students a moment to reflect on the effect that time-value-of-money adjustment makes.
<p>Of course, none of these net cash flows have been adjusted for the time value of money. The required rate of return for the investment in appliques for both companies is 15 percent. When the adjustments are made and the net cash flows totaled, an interesting difference emerges.</p>			
	Sure-Fire's Applique Net Cash Flow	Adjust- ment (15%)	Adjusted Net Cash Flows
Year 1	\$ 3,000	0.8696	\$2,609
Year 2	7,000	0.7561	5,293
Year 3	12,000	0.6575	7,890
Year 4	9,000	0.5718	5,146
Year 5	<u>7,000</u>	0.4972	<u>3,480</u>
Total Net:	\$38,000		\$24,418
	Competitor's Applique Net Cash Flow	Adjust- ment (15%)	Adjusted Net Cash Flows
Year 1	\$ 7,000	0.8696	\$6,087
Year 2	12,000	0.7561	9,073
Year 3	9,000	0.6575	5,918
Year 4	7,000	0.5718	4,003
Year 5	<u>3,000</u>	0.4972	<u>1,492</u>
Total Net	\$38,000		\$26,573
<p>The Sure-Fire's applique has adjusted net cash flows that total \$24,418. However the competitor's applique has a total adjusted net cash flows of \$26,572. The difference in the adjusted net cash flows from the two appliques is caused only by a change in the timing of the net cash flows. The total unadjusted net cash flow and the adjustment rate are the same.</p>			
<p>Again the difference in value may be somewhat astonishing to your participants. Allow them to take the time to reflect on the profound effects of a change in timing. Encourage discussion.</p>			

Content	Process									
<p>Only the order in which the net cash flows are earned has changed, but this has made a \$2,155 difference.</p>										
$\$26,573 - 24,418 = \$2,155$										
<p>This same dollar amount difference, \$2,155, would be found in the NPVs of the two appliques because the initial costs were the same for both, at \$15,000.</p>										
<table> <tr> <td colspan="3">Total Adjusted</td> </tr> <tr> <td>Net Cash Flow</td> <td>\$24,418</td> <td>\$26,573</td> </tr> <tr> <td>(Less) Initial Costs</td> <td><u>15,000</u></td> <td><u>15,000</u></td> </tr> </table>	Total Adjusted			Net Cash Flow	\$24,418	\$26,573	(Less) Initial Costs	<u>15,000</u>	<u>15,000</u>	<p>This is a much more detailed, common and realistic example of the use of NPV to analyze a business person's options for investment or expenditures.</p>
Total Adjusted										
Net Cash Flow	\$24,418	\$26,573								
(Less) Initial Costs	<u>15,000</u>	<u>15,000</u>								
<table> <tr> <td>New Present Value</td> <td>\$9,418</td> <td>\$11,573</td> </tr> </table>	New Present Value	\$9,418	\$11,573							
New Present Value	\$9,418	\$11,573								
<p>Net present Value is responsive to the cost of money, and the timing of cash flows regardless of the type of investment decision for which it will be used. With NPV, products, equipment, or services can be evaluated. NPV can also be used to make decisions about equipment replacements. Since this has been a popular use for NPV, let's look at a NPV analysis for an equipment replacement decision.</p>										
<p>Case Study 2: Replacing old equipment</p>	<p>Distribute HO 7. Again you may wish to give this to students earlier so that they have an example to review the case prior to the teaching session</p>									
<p>Another use for net present value is evaluating whether replacing old equipment would be a valuable purchase or not. New technology can increase efficiency, and new equipment could give a business owner an ego boost; but will it be valuable to the business? To illustrate this use of NPV, let's go back to operations at Sure-Fire.</p>										
<p>Since you are the manager of Sure-Fire, the owner has asked you to decide whether to replace an old press. A new press will not increase production by even one unit, but since Sure-Fire bought the old press, the technology has changed drastic-</p>										

Content	Process
<p>ally. The old press is incredibly durable, but a new press is much more efficient. Efficiencies from a new press would give you substantial savings in labor and maintenance over your old press.</p> <p>Should Sure-Fire keep the old press or buy a new one? To get a definite dollars-and-cents idea of whether it would pay to replace that old press, use net present value.</p> <p>If you can get a new press, there will be additional cash-flows-in, cash-flows-out, and initial costs. These are different cash flows from those the business has currently. If you keep the old press, there are no additional cash flows that are different from those currently earned or paid. Nothing has changed if no new press is bought, and the old press is kept.</p> <p>Cash-flows-in. First you have to consider the cash-flows-in that the new press will produce. The new press would save Sure-Fire about \$6,000 yearly in labor and maintenance for the next five years. That saving in operating costs will be the only cash-flow-in that a new press would generate. The next step in evaluating whether to replace the old press is to determine the cash-flows-out.</p> <p>Cash-flows-out. The only cash-flows-out that you anticipate for a new press will be extra income taxes paid on the higher income Sure-Fire will have because of the savings in operating costs from the new press. Before you can calculate the change in income taxes accurately, you will have to look at financing costs for the new press and depreciation for both the old and new presses. Depreciation affects the additional income taxes that would be due on higher income that Sure-Fire would have with a new press. This has to</p>	<p>This is an extremely important step. Depreciable assets are almost always involved in NPV calculations. For this reason your participants who are serious about investment evaluation should "work-through" this example with you.</p>

Content	Process
<p>be included to get a clear picture of how Sure-Fire will be affected.</p> <p>Depreciation's tax effects. The depreciation expense that is deducted on income tax returns and appears on financial statements is determined by a schedule that is set up based on an asset's "book value." By using depreciation, an asset's book value is deducted gradually over the useful life of the asset. An important point is that the depreciable book value of an asset may not be the same as the sticker price or the initial cost of the asset. Let's determine the "book value" of the new press for Sure-Fire.</p> <p>The book value of a new press would include the actual purchase price, delivery charges, installation costs, and any one-time set-up or operating training costs. The best sticker price that Sure-Fire can find on a new press is \$17,500. If Sure-Fire buys that machine, installation costs will total another \$2,500 before it can be used.</p> <p>Fortunately, you have been able to negotiate with the vendor to absorb the delivery and freight charges for shipping that new machine to Sure-Fire. If you had not been able to get those concessions from the vendor, the freight charges would be included in the book value. Another plus for the new press is that you will not have any down-time in the shop while the machine is installed; space for it is available and the installation will not disrupt Sure-Fire's production process. This is the calculation of the new press's book value:</p>	<p>Initially people may perceive this procedure to be excessively complex. Reassure them that the "learning curve effect" is extremely steep. In other words, once they have completed this example and a few others, they should be quite proficient with the investment evaluation technique, NPV.</p>

Content	Process								
<p>Book Value for Depreciation (New Press)</p> <table style="margin-left: 40px;"> <tr> <td>Sticker Price</td> <td style="text-align: right;">\$17,500</td> </tr> <tr> <td>Installation</td> <td style="text-align: right;">2,500</td> </tr> <tr> <td>Delivery</td> <td style="text-align: right;"><u>0</u></td> </tr> <tr> <td>Book Value</td> <td style="text-align: right;">\$20,000</td> </tr> </table> <p>Under the current scenario, if you buy a new press, you would sell the old one. Because of their durability there is a good market for this kind of used press. Even though you can probably get about \$2,000 when you sell the old press, the \$2,000 cannot be subtracted from the book value of a new press. So the book value used for depreciating the new press is \$20,000.⁶</p> <p>The \$20,000 book value of the new press is the amount that Sure-Fire depreciates over the press's useful life, which is the next five years. The technology on this type of machine has been advancing rapidly and those advances are probably going to continue. So in five years, a press that Sure-Fire could buy today would probably be worthless. At the end of the fifth year you could probably trade with someone to haul it away for the scrap value that they can get out of it. Since the new press would be worthless to Sure-Fire in five years, the new press's entire book value can be depreciated.⁷</p> <p>You have decided to depreciate the new machine using a straight-line technique.⁸ This means Sure-Fire would deduct the same amount each year for the next five years. To calculate the amount of depreciation on the new press, divide the new press's book value by its useful life, five years. This is the amount of depreciation Sure-Fire would deduct each year on income taxes and financial statements as depreciation expense for the new press. For this new press the depreciation each year would be:</p>	Sticker Price	\$17,500	Installation	2,500	Delivery	<u>0</u>	Book Value	\$20,000	<p>Polish depreciation laws and customs must be incorporated into examples or at least discussed. This example has been composed with the use of U.S. depreciation techniques.</p>
Sticker Price	\$17,500								
Installation	2,500								
Delivery	<u>0</u>								
Book Value	\$20,000								

Content	Process												
<p>Book Value/Years of Asset Life = Annual Depreciation⁹</p> $\$20,000/5 = \$4,000$													
<p>Since the depreciation on the new press would be the same each of the next five years, Sure-Fire's depreciation schedule for the new press will look like this:</p>													
<table> <thead> <tr> <th></th> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> <th>Year 5</th> </tr> </thead> <tbody> <tr> <td>Depreciation Schedule (New Press)</td> <td>\$4,000</td> <td>4,000</td> <td>4,000</td> <td>4,000</td> <td>4,000</td> </tr> </tbody> </table>		Year 1	Year 2	Year 3	Year 4	Year 5	Depreciation Schedule (New Press)	\$4,000	4,000	4,000	4,000	4,000	
	Year 1	Year 2	Year 3	Year 4	Year 5								
Depreciation Schedule (New Press)	\$4,000	4,000	4,000	4,000	4,000								
<p>You also have to consider the depreciation you would give up if Sure-Fire got rid of the old press. The book value of the old press is \$2,000 and it will last another five years.¹⁰ However, when the old press was purchased four years ago at a cost of \$10,000, a straight-line depreciation schedule was established assuming no salvage value at the end of its estimated useful life. As a result, the company has been depreciating \$2,000 per year for this asset. The final \$2,000 of book value will be depreciated over the next year, leaving the value on the books of the old press at \$0 at the end of this year. Therefore, the depreciation expense that Sure-Fire would show each year on its income tax returns and financial statements by keeping the old press is \$2,000 next year and \$0 for the next four years.</p>													
<table> <thead> <tr> <th></th> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> <th>Year 5</th> </tr> </thead> <tbody> <tr> <td>Depreciation Schedule (Old Press)</td> <td>\$2,000</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table>		Year 1	Year 2	Year 3	Year 4	Year 5	Depreciation Schedule (Old Press)	\$2,000	0	0	0	0	
	Year 1	Year 2	Year 3	Year 4	Year 5								
Depreciation Schedule (Old Press)	\$2,000	0	0	0	0								
<p>The point of all those depreciation calculations is to find the impact that these changes will have on Sure-Fire's before-tax income. Extra income taxes must be paid on the higher income Sure-Fire will have from the operating savings that the new press will provide. Additional income</p>	<p>Most people are amazed when they realize the profound "tax shield" effect that the non-cash expense, depreciation, has on their tax liability. Be prepared to allow student time to reflect on this clear and legal tax minimizing tool.</p>												

Content

Process

before taxes must be calculated to include giving up the old press's depreciation and at the same time getting the new press's depreciation as an expense. As you can see, the additional after-tax income in year one is \$3,220 on the books.

New Press Profit on the Books Year 1

Annual Savings		\$6,600
Depreciation (New)	\$4,000	
(Less) Depreciation (Old)	<u>2,000</u>	
(Less) Additional Depreciation		<u>2,000</u>
Additional Income before Taxes		4,600
(Less) Additional Income Taxes (30%)		<u>1,380</u>
Additional Income after Taxes		\$3,220

By year two, the situation will have changed due to the complete depreciation of the old press.

New Press Profit on the Books Year 2

Annual Savings		\$6,600
Depreciation (New)	\$4,000	
(Less) Depreciation (Old)	<u>0</u>	
(Less) Additional Depreciation		<u>4,000</u>
Additional Income before Taxes		2,600
(Less) Additional Income Taxes (30%)		<u>780</u>
Additional Income after Taxes		\$1,820

The differences between years one and two relate solely to the amount of depreciation available for the old press.

Now you can get a complete picture of how cost savings in operations, and increased income taxes will affect the cash flows at Sure-Fire. It is interesting to compare the numbers on the books with cash flow.

The new press will look different in terms of net cash flow than how it will appear on the books. Remember that NPV focuses on additional net cash flow. From either point of view the annual operating expense savings will be the same, \$6,600, a cash-flow-in.

Refer participant to these calculations; they are included in HO 7.

Content			Process
Year 1			
	New Press Profit on the Books	New Press in Net Cash Flow	
Annual Savings	\$6,600	\$6,600	
Depreciation (New)	\$4,000		
(Less) Depreciation (Old)	<u>2,000</u>		
(Less) Additional Depreciation	<u>2,000</u>		
Additional Income before Taxes	4,600		
(Less) Additional Income Taxes (30%)	<u>1,380</u>	<u>1,380</u>	
Additional Income after Taxes	\$3,220	Additional Net Cash Flow \$5,220	
Year 2			
	New Press Profit on the Books	New Press in Net Cash Flow	
Annual Savings	\$6,600	\$6,600	
Depreciation (New)	\$4,000		
(Less) Depreciation (Old)	<u>0</u>		
(Less) Additional Depreciation	<u>4,000</u>		
Additional Income before Taxes	2,600		
(Less) Additional Income Taxes (30%)	<u>780</u>	<u>780</u>	
Additional Income after Taxes	\$1,820	Additional Net Cash Flow \$5,820	
Extra taxes that Sure-Fire must pay on the extra income are also the same because paying income taxes is a cash-flow-out. Savings from operations and additional income taxes paid are the only changes in cash flow that the new press would cause for Sure-Fire. Additional net cash flows from the new press will total \$5,220 for year one and \$5,820 for each of the next four years. Additional income on the books is \$2,000 lower than additional net cash flow in year one and \$4,000 lower over the remaining four years. Depreciation causes these differences.			Again, allow your student time to reflect on the tax-shield effect of depreciation on the cash receipts that are subject to income taxes.
			Encourage people to comment on their own experiences with the "purchase price" compared to the money that must be expended before the asset maybe used.

Content	Process										
<p>Depreciation shows only on Sure-Fire's "books;" this is where the difference between "book" income and new cash flow appears. However, to calculate any additional income tax liability, depreciation will always have to be calculated and included. Sure-Fire would receive \$5,220 additional net cash flow next year from the new press.</p>											
<p>Initial Costs. The initial costs of buying the new press versus continuing business with the old press is the next step in NPV calculations. As we said earlier, the sticker price on the new press is \$17,500. Installation costs will total another \$2,500. The vendor absorbed the delivery charges for shipping the new machine to Sure-Fire. If you had not been able to get those concessions from the vendor, the freight and delivery charges would be an initial cost also. There is no shop downtime while the machine is installed because space for it is open. The last item to include in the total initial cost is the money Sure-Fire can get from selling the old press after the new press has been installed.</p>											
<p>The old press can be sold for \$2,000. It is in good condition and there is an active "used" equipment market for this kind of press. The money that Sure-Fire receives from the sale of the old press should be subtracted from the initial cost of the new press:¹¹</p>											
<p style="text-align: center;">Initial Cost (New Press)</p> <table> <tbody> <tr> <td>Sticker Price</td> <td style="text-align: right;">\$17,500</td> </tr> <tr> <td>Installation</td> <td style="text-align: right;">2,500</td> </tr> <tr> <td>Delivery</td> <td style="text-align: right;">0</td> </tr> <tr> <td>(Less) Sale on Old Press</td> <td style="text-align: right;"><u>2,000</u></td> </tr> <tr> <td> Total Initial Cost</td> <td style="text-align: right;"> \$18,000</td> </tr> </tbody> </table>	Sticker Price	\$17,500	Installation	2,500	Delivery	0	(Less) Sale on Old Press	<u>2,000</u>	 Total Initial Cost	 \$18,000	
Sticker Price	\$17,500										
Installation	2,500										
Delivery	0										
(Less) Sale on Old Press	<u>2,000</u>										
 Total Initial Cost	 \$18,000										

Content

Process

The difference between book value and initial costs of the new press is \$2,000 (the money from the sale of the old press). When an old asset is replaced by a new asset, the new asset's initial costs include all the cash costs and the cash received on the sale of the asset that it replaced.

New Present Value. Now you can find the NPV for the new press at Sure-Fire by adding the adjusted net cash flows and subtracting the initial costs. Adjust the net cash flows at 15 percent.

	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash Flows	\$5,220	5,820	5,820	5,820	5,820
Adjustment (at 15%)	0.8696	0.7561	0.6575	0.5718	0.4972
Adjusted Net Cash Flows (at 15%)	\$4,539	4,401	3,827	3,328	2,894
Total Adjusted Net Cash Flows (at 15%)					

$$\$4,539 + 4,401 + 3,827 + 3,328 + 2,894 = \$18,989$$

$$\text{Adjusted Net Cash Flow} - \text{Initial Costs} = \text{NPV}$$

$$\$18,989 - 18,000 = \$989$$

The new press exceeds the 15 percent required rate of return and would therefore be considered a good investment if Sure-Fire has the money and wants the new press. In other words, the new press will earn enough money to cover all costs including the 15 percent required rate of return and an additional \$989 over and above all costs. We have evaluated new products, compared different costs of money, contrasted different cash flow timing, and examined replacing equipment by using net present value.

Could NPV be used to evaluate a new service?

Case Study 3 is the most complex, however, it is only one of the three cases that focuses on a service business, a restaurant. Several people in your class may have service businesses.

This particular example may have increasing relevance to the Polish situation as more "fast food" restaurants begin to operate in Poland. The point, which should not be missed, is that the NPV investment evaluation technique may also be applied to a strictly "service" type of business.

Make modifications as they are necessary for your students to understand **and** accept these ideas.

Content	Process
<p>Case Study 3: Adding a new service</p> <p>Net present value can be useful for service businesses of all types. The best way to show this is with an example about a service business.</p> <p>Roho's Barbecue is a restaurant and catering service located in the same town as Sure-Fire. Roho is a friend of yours and has talked with you about starting a lunch delivery service. Customers who phone in orders by 10:30 a.m. could have their lunch delivered between 11:00 a.m. and 2:00 p.m. Roho believes this new service would generate dependable extra sales without cannibalizing his lunch walk-in trade. Unfortunately, Roho has learned that two new delivery trucks, a necessity for the lunch delivery service, will cost a total of \$24,000.</p> <p>Roho is convinced that this kind of convenient, time-saving service will become popular in some parts of town. Several parts of town have high densities of shops or stores with owner/operators and office complexes. These are the people that Roho believes will represent most of the regular customer base for a lunch delivery service. Roho anticipates sales that average 50 meals a day, Monday through Friday, as a reasonable demand for the delivery service. To start the net present value analysis, Roho has to estimate cash-flows-in.</p> <p>Cash-Flows-In. Roho believes that over the next five years the restaurant will deliver an average of 50 meals per day for 5 days a week on a year-round basis. Roho has decided that the average price per meal and minimum delivery purchase per stop will be the same at \$8.50. Roho had two reasons for the \$8.50 average delivered meal price. First, the average</p>	<p>Distribute HO 8 in advance of the class session if at all possible. HO 8, which represents Case Study 3, is rather involved.</p> <p>Adjust costs and revenues to suit the Polish situation.</p> <p>If it is appropriate, the instructor may wish to modify this example to suit the Polish situation better.</p>

Content	Process
<p>lunch menu item served in the restaurant is about \$6.00. Roho figures that the time to drive from the parts of town with most of the shops and offices to the restaurant is worth far more than \$2.50 to the potential customers. The second reason is related to the way in which the delivery and service personnel will be compensated.</p> <p>Delivery personnel will work for a low wage plus tips. Those tips will be shared with the service personnel who will arrive two hours earlier than usual at the restaurant to take the phone orders. Roho thinks that this will give the delivery and service personnel an incentive to be pleasant with customers and accurate with orders. If the average meal price is \$8.50, tax is about 60 cents. That is an average total customer bill of \$9.10. A delivery person would probably receive at least \$10 for the combination of meal, tax, and tip. A \$10 bill would be easy, quick, convenient, and few people would not give the 90 cent tip on a \$9.10 bill. Given the \$8.50 average meal price and the expected demand level, cash-flows-in should be \$110,500 for each of the next five years.</p> <p>50 Meals/Day @ \$8.50/Meal = \$425/Day \$425/Day X 260 Days/Year = \$110,500</p> <p>Cash-Flows-Out. Extra cash-flows-out that Roho foresees for the lunch delivery service would be for: food; food preparation; three part-time delivery people; advertising; licenses; recyclable take-out containers, cutlery, and condiments; and truck maintenance and/or operating expenses, like gasoline, maintenance, and insurance. Since the business is expected to flourish, Roho expects to hire another prep/line cook for the first shift, to add higher-salaried-hours for two regular service personnel to take the orders, and to</p>	<p>Initially this list of expenditures may seem overwhelming, but this list is realistic.</p> <p>Adjust cost items as is appropriate for the Polish situation.</p> <p>Emphasize to participants that all costs must be considered.</p>

Content	Process																												
<p>compensate the day manager for the additional responsibility of the delivery service. Roho figures that a partial schedule of cash-flows-out over each of the next five years would be:</p> <table> <tr> <td>Truck Maintenance/Operating Costs (\$100/wk/truck)</td> <td style="text-align: right;">\$10,400</td> </tr> <tr> <td>Advertising (\$25/wk)</td> <td style="text-align: right;">1,300</td> </tr> <tr> <td>Food (25% of receipts)</td> <td style="text-align: right;">27,625</td> </tr> <tr> <td>Food Preparation (30 hrs/wk @ \$12/hr wage + benefits)</td> <td style="text-align: right;">18,720</td> </tr> <tr> <td>Containers/Condiments/Cutlery (@ \$0.50/meal)</td> <td style="text-align: right;">6,500</td> </tr> <tr> <td>Service Personnel (20 hrs/wk @ \$10/hr wage + benefits)</td> <td style="text-align: right;">10,400</td> </tr> <tr> <td>Delivery Personnel (12 hrs/wk @ \$5/hr wage + benefits)</td> <td style="text-align: right;">9,360</td> </tr> <tr> <td>Uniforms (\$5/day/person)</td> <td style="text-align: right;">3,900</td> </tr> <tr> <td>Licenses/Fees</td> <td style="text-align: right;"><u>500</u></td> </tr> <tr> <td></td> <td style="text-align: right;"><u>\$88,705</u></td> </tr> </table> <p>These cash-flows-out, \$88,705, only represent part of the total annual cash-flows-out. The day manager has to be compensated and motivated to run this delivery service well, and income taxes will be due on any additional income. The tax liability and also the manager's compensation have to be added into the calculation of cash-flows-out.</p> <p>Roho believes that 50 percent of the before-tax-and-depreciation profit would be a good deal for the manager. Since the gross profit is \$21,795, the day manager's compensation would be \$10,898.</p> <table> <tr> <td>Total Receipts</td> <td style="text-align: right;">\$110,500</td> </tr> <tr> <td>(Less) Cash-Flows-Out</td> <td style="text-align: right;"><u>88,705</u></td> </tr> <tr> <td>Gross Profit before Taxes or Depreciation</td> <td style="text-align: right;">\$ 21,795</td> </tr> <tr> <td>Manager's 50%</td> <td style="text-align: right;">\$ 10,898</td> </tr> </table> <p>The manager's compensation is then added to the other cash-flows-out.</p>	Truck Maintenance/Operating Costs (\$100/wk/truck)	\$10,400	Advertising (\$25/wk)	1,300	Food (25% of receipts)	27,625	Food Preparation (30 hrs/wk @ \$12/hr wage + benefits)	18,720	Containers/Condiments/Cutlery (@ \$0.50/meal)	6,500	Service Personnel (20 hrs/wk @ \$10/hr wage + benefits)	10,400	Delivery Personnel (12 hrs/wk @ \$5/hr wage + benefits)	9,360	Uniforms (\$5/day/person)	3,900	Licenses/Fees	<u>500</u>		<u>\$88,705</u>	Total Receipts	\$110,500	(Less) Cash-Flows-Out	<u>88,705</u>	Gross Profit before Taxes or Depreciation	\$ 21,795	Manager's 50%	\$ 10,898	<p>The costs of trucks may be adjusted if they are unrealistic for the Polish situation. Any other cost changes necessary should be made.</p>
Truck Maintenance/Operating Costs (\$100/wk/truck)	\$10,400																												
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Content	Process														
Cash-Flows-Out	\$ 88,705														
Manager's 50%	<u>10,898</u>														
Total Cash-Flows-Out except Taxes and Depreciation	\$ 99,603														
<p>In order to figure out what additional income taxes will be due, depreciation on the two new trucks has to be calculated and included on the books. Remember that expenses for tax purposes are not the same as cash-flows-out because depreciation expense is included for tax purposes.</p> <p>The two trucks cost \$12,000 each and can be depreciated over three years on a straight line basis. This schedule allows \$8,000 depreciation each year for the trucks over the first three years of the lunch delivery project.</p> <p style="padding-left: 40px;">2 Trucks @ \$12,000 each = \$24,000</p> <p style="padding-left: 40px;">\$24,000/3 Years = \$8,000 Annual Depreciation</p> <p>Now depreciation can be added to the other expense so that additional income taxes that would be due can be calculated.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Annual Receipts</td> <td style="text-align: right;">\$110,500</td> </tr> <tr> <td>(Less) Expense (except Depreciation)</td> <td style="text-align: right;"><u>99,603</u></td> </tr> <tr> <td>Gross Profit</td> <td style="text-align: right;">10,897</td> </tr> <tr> <td>(Less) Depreciation</td> <td style="text-align: right;"><u>8,000</u></td> </tr> <tr> <td>Additional Income before Taxes</td> <td style="text-align: right;">2,897¹²</td> </tr> <tr> <td>Additional Income Taxes (30%)</td> <td style="text-align: right;"><u>869</u></td> </tr> <tr> <td>Additional Income after Taxes</td> <td style="text-align: right;">\$2,028</td> </tr> </table> <p>During the three years that the trucks are depreciated, profits for income tax purposes will be different from net cash flows. The difference will be in depreciation.</p>		Annual Receipts	\$110,500	(Less) Expense (except Depreciation)	<u>99,603</u>	Gross Profit	10,897	(Less) Depreciation	<u>8,000</u>	Additional Income before Taxes	2,897 ¹²	Additional Income Taxes (30%)	<u>869</u>	Additional Income after Taxes	\$2,028
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<p>Note the impact that no depreciation makes on taxable income.</p> <p>Before you leave this part of the material, be confident that people understand the idea of a "tax shelter" provided by depreciation.</p>															

Content		Process
	First Three Years of New Service Profits on the Books	First Three Year of New Service Net Cash Flow
Annual Receipts	\$110,500	\$110,500
(Less) Expense (except Depreciation)	<u>99,603</u>	<u>99,603</u>
Gross Profit	10,897	10,897
(Less) Depreciation	<u>8,000</u>	
Additional Income before Taxes	2,897	
Additional Income Taxes (30%)	<u>869</u>	<u>869</u>
Additional Income after Taxes	\$2,028	Additional Net Cash Flow \$10,028
<p>For the first three years, Roho will get \$10,028 per year in extra net cash flow, but will show income of only \$2,028 on the books for income tax purposes. The \$8,000 difference is the amount of depreciation taken as an expense.</p> <p>The last two years of the delivery service will have net cash flows that are the same as profits for income tax purposes because there will be no more depreciation expense.</p>		
	Final Two Years of New Service Profits on the Books	Final Two Year of New Service Net Cash Flow
Annual Receipts	\$110,500	\$110,500
(Less) Expense (except Depreciation)	<u>99,603</u>	<u>99,603</u>
Gross Profit	10,897	10,897
(Less) Depreciation	<u>0</u>	
Additional Income (Loss) before Taxes	10,897	
(Less) Additional Income Taxes (30%)	<u>3,269</u>	<u>3,269</u>
Additional Income after Taxes	\$7,628	Additional Net Cash Flow \$7,628
<p>This illustrates the "tax shelter" effect of depreciation. Sometimes depreciation is know as a "tax shield." If you contrast the first three years with the final two years, you can see why. The cash flows <i>before</i></p>		

Content	Process																														
<p>depreciation and taxes are the same all five years. However, for each of the first three years during which depreciation is paid, additional income tax liability is reduced to \$869 per year due to the deduction taken for depreciation. But during the final two years, Roho will have no depreciation with which to reduce his tax liability and will thus incur a tax bill of \$3,269 each year.</p>																															
<p>Roho has to decide what the required rate of return would be for the delivery service. Roho is one of The Bank's best and oldest customers. Roho has a great relationship with the loan officers and is widely respected in the community. Roho can get loans with a minimum size of \$20,000 for 9 percent. That is great, but Roho's business is small and a \$20,000 investment represents a large gamble relative to what he is currently making on his operations. Roho decides that to compensate himself for the large risk involved in undertaking this venture, he will require a 20 percent return.</p>	<p>Refer student to these calculations in HO 8.</p>																														
<p>Now that Roho has calculated the net cash flows, and determined a 20 percent required return, the net cash flows can be adjusted and summed.</p>																															
<table> <thead> <tr> <th></th> <th>Year 1</th> <th>Year 2</th> <th>Year 3</th> <th>Year 4</th> <th>Year 5</th> </tr> </thead> <tbody> <tr> <td>Net Cash Flows</td> <td>\$10,028</td> <td>10,028</td> <td>10,028</td> <td>7,628</td> <td>7,628</td> </tr> <tr> <td>Adjustment (at 20%)</td> <td>0.8333</td> <td>0.6944</td> <td>0.5787</td> <td>0.4823</td> <td>0.4019</td> </tr> <tr> <td>Adjusted Net Cash Flows (at 20%)</td> <td>\$8,356</td> <td>6,963</td> <td>5,803</td> <td>3,679</td> <td>3,066</td> </tr> <tr> <td>Total Adjusted Net Cash Flows (at 20%)</td> <td colspan="5">$\\$8,356 + 6,963 + 5,803 + 3,679 + 3,066 = \\$27,867$</td> </tr> </tbody> </table>		Year 1	Year 2	Year 3	Year 4	Year 5	Net Cash Flows	\$10,028	10,028	10,028	7,628	7,628	Adjustment (at 20%)	0.8333	0.6944	0.5787	0.4823	0.4019	Adjusted Net Cash Flows (at 20%)	\$8,356	6,963	5,803	3,679	3,066	Total Adjusted Net Cash Flows (at 20%)	$\$8,356 + 6,963 + 5,803 + 3,679 + 3,066 = \$27,867$					
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Total Adjusted Net Cash Flows (at 20%)	$\$8,356 + 6,963 + 5,803 + 3,679 + 3,066 = \$27,867$																														
<p>Initial Costs. Initial costs would be significant even though the coolers and kitchen could handle a higher volume of business, and the restaurant already has a rotary</p>																															

Content	Process								
<p>phone system. Two new delivery trucks would represent most of the initial costs for the new service, \$24,000. The catering part of the business has five trucks that it has used primarily on weekends and at night. Roho intends to keep all those older, low-use trucks. All the catering trucks are old and wouldn't hold up to the hard running conditions and frequent stops that would be necessary for a lunch delivery service. Realistically, the catering trucks can be relied on only for the equivalent of one delivery per day. Other than the two new trucks, introductory advertising and charges for extra telephone lines would be the only initial costs. Total initial costs would probably look like this:</p> <table> <tr> <td>Phone Service/Installation Charges</td> <td>\$ 200</td> </tr> <tr> <td>Advertising</td> <td>200</td> </tr> <tr> <td>Two Delivery Trucks</td> <td><u>24,000</u></td> </tr> <tr> <td>Total Initial Costs</td> <td>\$24,400</td> </tr> </table> <p>Net Present Value. When the initial costs are subtracted from the adjusted net cash flows, Roho's new delivery service has a positive net present value, \$3,467. That means that new service will meet Roho's requirements with an additional return.</p> <p>Adjusted Net Cash Flow - Initial Cost = NPV</p> <p style="text-align: center;">\$27,867 - 24,400 + \$3,467</p> <p>Based on these calculations, Roho intends to go ahead with the project. But there are some important points to keep in mind.</p> <p>Estimates of costs and sales projections should be double-checked. Those cost estimates include the required rate of return. If the assumptions used to estimate sales and expenses are based upon potentially inaccurate evidence, then the dis-</p>	Phone Service/Installation Charges	\$ 200	Advertising	200	Two Delivery Trucks	<u>24,000</u>	Total Initial Costs	\$24,400	<p>Be honest and forthright about NPV's limitations. Point out that other techniques of investment evaluation have even more limitations.</p>
Phone Service/Installation Charges	\$ 200								
Advertising	200								
Two Delivery Trucks	<u>24,000</u>								
Total Initial Costs	\$24,400								

Content	Process
<p>count rate used would have to be increased, and, therefore, the net present value of the delivery service would be lower, possibly even negative.</p> <p>NPV's limitations</p> <p>As noted earlier, net present value evaluations are only as good as estimates used to calculate them. Clearly, inaccurate estimates could show unrealistic results. Different risk levels among competing projects can also create false comparisons.</p> <p>Projects with different risk levels could complicate making realistic comparisons. However, there is at least one way that the different risk levels can be handled. If there is more risk involved with a project, the potential gain from the project has to be higher. This is because most people feel that they should be paid more to take greater risks, e.g., hazardous duty pay. When competing projects have different risk levels, different costs of money should be used to evaluate those projects. This is so even though the same business is looking at these projects at the same time. When different costs of money are used to evaluate competing projects, a higher cost of money forces a project to yield a higher return to show the same NPV. That higher return might justify a higher risk level. Different risk levels among projects can be misleading; also, different project sizes can be misleading.</p> <p>If NPV is used to compare projects that have similar initial investments, the results are clear. However, if there are big differences in the dollars between projects' initial investments, NPV results can be misleading. Project A's NPV could be twice as large as Project B's NPV. But if Project A's initial investment is three times larger than Project B's initial invest-</p>	<p>Be honest and forthright about the limit of the NPV method. No system is perfect.</p>

Content	Process
<p>ment, Project B is a better opportunity than Project A. There is a good mathematical tool to compare projects with different initial investments. It is called a "profitability index."¹³</p> <p>Even with these limitations, net present value can be a valuable decision-making tool for any business. NPV enables business people to evaluate or compare projects more objectively in two ways. First, net present value focuses on dollars of net cash flow, the life blood of any business. Second, it always measures projects in dollars that have been adjusted by the time value of money. By using NPV, business people can have an investment-savvy edge.</p>	

Footnotes

¹In the U.S.A. businesses may expense the first \$10,000 of depreciable assets that they buy in a year. This is the current tax law, but changes in tax law are frequent and can have profound impact. See your accountant or financial advisor for the most current information.

²Assets like office equipment, vehicles, buildings, etc., can be depreciated with different techniques and over different numbers of years. One method could have substantial dollar advantages over another for your business' tax purposes. Check with your accountant, tax advisor, or financial advisor for details about your options.

³NPV's adjusting for the time value of money is one of the big advantages it has over the "payback" technique of project evaluation. Payback is used to budget money for projects by ranking the projects in the order that they will "pay" for themselves. The project with the shortest amount of time until the payback date is ranked first while the project with the longest period of time until the payback date is ranked last. Payback period is used frequently, but it does not consider the time value of money. NPV analysis discounts all cash flows to current dollars where they can be ranked accordingly.

⁴To calculate the adjustment, follow a three-step process. Add 1 (one) to the rate you choose. Raise this value to a power that is equal to the number of years until you will receive the money. Take the reciprocal of this number. When you multiply the net cash flow from a year by the adjustment for that year, you know what that money would be worth today. The applique's adjustments would be:

	Year 1	Year 2	Year 3	Year 4	Year 5
$\frac{1}{(\text{Interest} + 1)^{\text{Year}}}$	$\frac{1}{(1.15)^1}$	$\frac{1}{(1.15)^2}$	$\frac{1}{(1.15)^3}$	$\frac{1}{(1.15)^4}$	$\frac{1}{(1.15)^5}$
Adjustment	0.8696	0.7561	0.6575	0.5718	0.4972

⁵If the NPV=0, the required rate of return that you choose is a special case called the Internal Rate of Return. This is a situation in which the rate used to discount the cash flows was the business's "cost of capital." The costs of borrowing, issuing stock and generating profits are combined to determine the "cost of capital." Theoretically, the cost of capital would reflect the cost of money for any expenditure, disbursement, or project the business undertook. Usually only very large companies calculate the exact cost of capital; it is time consuming. Explaining cost of capital is beyond the scope of this article. For additional information on cost of capital there are several texts recommended in the "for further reading . . ." list.

⁶A relevant question, however, would be whether or not you should keep the old press to work along side the new press. You have the space available to accommodate it.

Therefore, you would compare the expected income to be derived from continued use of the old press, presumably to handle an increased work load, to the salvage value you could expect to receive by selling it.

- ⁷ Depreciation legislation changes over time. Historically, a "salvage value" may have been established for an asset at the end of the asset's useful life. If the legislation changes, a salvage value may be required at the end of a depreciable asset's life. Check with your accountant or tax advisor for the current practices.
- ⁸ Other depreciation techniques can give a business tax advantages. Some depreciation methods allow a business to deduct a much larger part of the book value in the first year or two of ownership. Since this can be a significant tax advantage, you might want to talk to your accountant, tax advisor or financial advisor about depreciation options that you would have for your depreciable assets.
- ⁹ It is not necessary to set a salvage value in order to depreciate an asset. The entire book value of an asset may be depreciated. However, tax laws can change on depreciation methods and salvage value. Check with your accountant, tax advisor, or financial advisor for more information.
- ¹⁰ It is only a coincidence that the book value of the old press is the same as its market value. Market value and book value do not necessarily have any relationship to one another.
- ¹¹ The Tax Police could recognize a gain from the sale of a partially or fully depreciated asset. See your accountant, tax advisor or financial advisor for more information.
- ¹² Roho shows a small profit in this situation. However, even a loss can be useful for income tax purposes. If Roho has earned income from the other restaurant business, a loss from the delivery service could be subtracted from those earnings. If Roho's other business has no profit for these years, an operating loss could be carried forward or backward to other years in which the business makes a profit. See your accountant for details and limitations on loss carryovers.
- ¹³ Profitability index is specially designed to compare projects with different initial investments accurately. The NPV value is divided by the initial investment of a project. This answer shows the value produced by each dollar invested. This formula can be found in many financial reference books.

Payments for the Factors of Production

land

renter purchase

labor

wages

capital

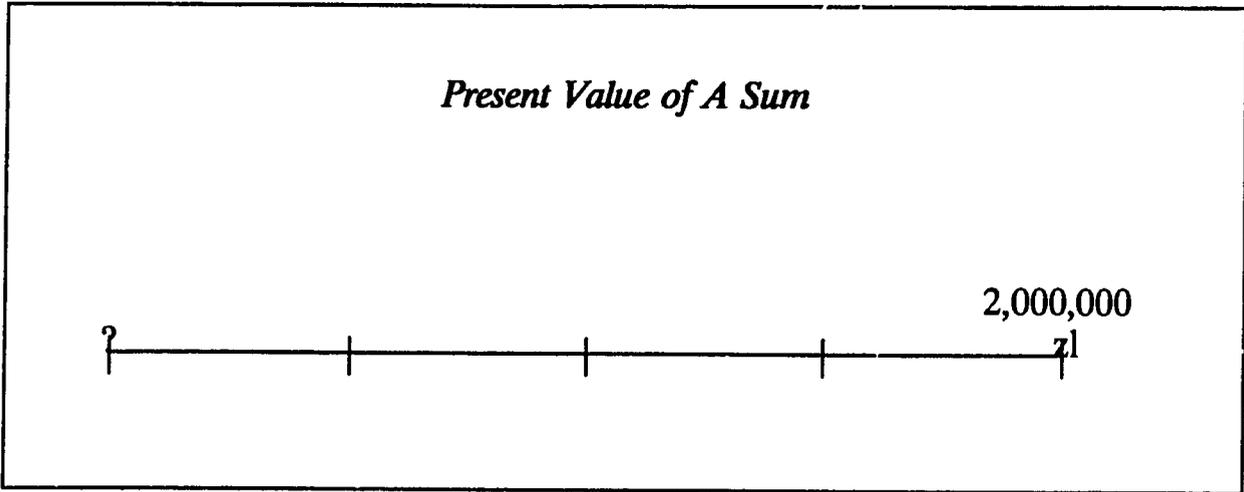
interest

The Components of Interest Rate

rental charge for use of money

+ risk premium

+ expected inflation



Future Value of A Sum

2,000,000



Return on Investment (ROI)

$$\text{ROI} = \frac{\text{Initial Investment}}{\text{Total Accounting Profits}}$$

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Payback Period (PBP)

$$\text{PBP} = \frac{\text{Initial Investment}}{\text{Annual Net Cash Flow}}$$

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Internal Rate of Return (IRR)

IRR = The Sum of [(r) (Annual Net Cash Flow)]

Where "r" is the adjustment for the Internal Rate of Return

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Net Present Value (NPV)

$$\text{NPV} = \text{Adjusted Net Cash Flow} - \text{Initial Investment}$$

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Definitions

Cash-Flows-In

Cash-Flows- OUt

Net Cash Flows

Time Value of Money

Time Value of Money Adjustment

Adjusted Net Cash Flows

Initial Costs

Net Present Value

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How to Calculate Net Present Value

Step 1: Estimate all the additional cash-flows-in

	Year 1	Year 2	Year 3	Year 4
Additional Cash-Flows-In	\$5,200	7,800	10,400	10,400

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Step 2: Estimate all the additional cash-flows-out

	Year 1	Year 2	Year 3	Year 4
Additional Cash-Flows-Out	\$4,000	4,000	4,000	7,000

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Step 3: Subtract additional cash-flows-out from additional cash-flows-in

	Year 1	Year 2	Year 3	Year 4
Additional Cash-Flows-In	\$5,200	7,800	10,400	10,400
(Less) Additional Cash-Flows-Out	<u>4,000</u>	<u>4,000</u>	<u>4,000</u>	<u>7,000</u>
Net Cash Flows	\$1,200	\$3,800	\$6,400	\$3,400

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Step 4: Decide what your required rate of return is

	Year 1	Year 2	Year 3	Year 4
Adjustment (@ 17%)	0.8547	0.7305	0.6244	0.5337

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*Step 5: Multiply each of the next cash flows
by the appropriate adjustment*

	Year 1	Year 2	Year 3	Year 4
Adjustment (@ 17%)	0.8547	0.7305	0.6244	0.5337
Net Cash Flows	<u>\$1,200</u>	<u>3,800</u>	<u>6,400</u>	<u>3,400</u>
Adjusted Net Cash Flows	\$1,026	\$2,766	\$3,996	\$1,815

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Step 6: Add the adjusted net cash flows together

	Year 1	Year 2	Year 3	Year 4
Adjusted Net Cash Flows	\$1,026	2,776	3,996	1,815

**Total Adjusted Net
Cash Flow**

$$\$1,026 + 2,776 + 3,996 + 1,815 = \$9,613$$

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Step 7: Estimate the total initial costs

Initial Costs = \$5,000

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Step 8: Subtract the initial costs from the total adjusted net cash flows to find the Net Present Value of the new project

Total Adjusted Net Cash Flow	\$9,613
(minus) Initial Costs	<u>5,000</u>
New Present Value	\$4,613

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The Components of Interest Rate

rental charge for use of money

+ risk premium

+ expected inflation

Pencil Factory

At the beginning of 1990 Mr. Kowalski started to build a pencil factory. He financed this investment with the bank loan at 40 percent annual interest rate. On January 1, 1990 he borrowed 20 mln zlotys, a year later 50 mln zlotys and at the beginning of third year 350 mln zlotys. He is planning to open the company at the end of 1992. The bank charges interest on the loans. Mr. Kowalski wants to compute how big this charge will be on January 1, 1993.

Year	Loan amount - L_0	Compounding factor $(1+r)$	Compounded loan on Jan.1,1993 $L_t = L_3$
01.01.90	20 mln	$(1 + 0.4)^3 = 2.74$	54 880 000
01.01.91	50 mln	$(1 + 0.4)^2 = 1.96$	98 000 000
01.01.92	350 mln	$(1 + 0.4)^1 = 1.4$	490 000 000
		Total	642 880 000

According to the loan contract Mr. Kowalski has to pay back the loan within 5 years after the company starts the operations. The monthly payments will be equal and the first installment will be paid one year after the company starts the operations. Mr. Kowalski wants to know how big this installment will be. Let "U" be a yearly amortization installment and let "N" be the amount of the loan. The loan will be amortized within 5 years of the company's operations if

$$N = U/(1+r) + U/(1+r)^2 + U/(1+r)^3 + U/(1+r)^4 + U/(1+r)^5$$

that is

$$N = U ((1+r)^5 - 1) / (r(1+r))^5$$

from which we get

$$U = N r(1+r)^5 / ((1+r)^5 - 1)$$

The general formula for the discounting factor is

$$\text{discounting factor} = r(1+r)^t / ((1+r)^t - 1)$$

We know that $r = 40\%$. Thus the value of discounting factor amounts to:

$$0.4 \times 1.4^5 / (1.4^5 - 1) = 2.15 / 4.38 = 0.49$$

N is known and equal to 642 880 000 zlotys. The yearly amortization installment is $642\,880\,000 \times 0.49 = 315\,886\,000$ zlotys

Why is it so big?

Because the bank will charge interest on the principal and also on the interest. Let's compute what will be the real value of the loan on January 1, 1993.

Loan amortization plan (zlotys)

Year	Loan on Jan. 1	Yearly interest rate = 40%	Loan + interest	Amortization instalment	Amount of load on Jan. 1 following year	Discounted interest payment on Jan.1, 1993
	(1)	(2)=(1)x0.4	(3)=(1)+(2)	(4)	(5)=(3)-(4)	(2) x discounting factor
93	642 880	257 152	900 032	315 886	584 146	257 000/1.4 = 183 680
94	584 146	233 658	817 804	315 886	501 918	233 658/1.4 ² = 119 213
95	501 918	200 767	702 185	315 886	386 299	200 767/1.4 ³ = 73 272
96	386 299	154 519	540 819	315 886	224 933	154 519/1.4 ⁴ = 40 239
97	224 933	89 973	314 907	314 907	0	89 973/1.4 ⁵ = 16 723
						$\Sigma = 433 129$

Thus the total capital outlay valued on Jan. 1, 1993 to start the pencil factory will be:
 $642\,880\,000\text{ z\l} + 433\,129\,000\text{ z\l} = 1\,076\,009\,000\text{ z\l}$

By comparing the total outlay with the future revenues calculated for the same point of time we can estimate the real efficiency of this venture. This is what Mr. Kowalski should know.

The time value of money changes with the changes in interest rate.

Source: "Pencil Factory" - by Andrzej Jurgilewicz published by Biuletyn Informacyjny BSB - No. 7, June 1992, Poland.

Four Methods of Investment Analysis

Businesses often analyze investments by using one or more of the following techniques: Return on Investment, Payback, Internal Rate of Return or Net Present Value. All of these methods rely on estimates of future costs and returns; each is computed and expressed differently, has its own decision rules, and has advantages and drawbacks.

Return on Investment (ROI) divides the total initial investment into a project by the total accounting profits realized throughout the project's lifetime. ROI is expressed as a percent of return on the initial investment. To decide if the project is acceptable, the computed ROI is compared to a "hurdle Rate" that the businesses person has chosen. If the ROI meets or exceeds the hurdle rate, the project can be accepted.

$$\text{Return on Investment} = \frac{\text{Initial Investment}}{\text{Total Accounting Profits}}$$

Of the four methods, ROI is the only one that looks at additional accounting profits instead of additional cash flows. This reduces the number of calculations involved, but cash flow may be more important than accounting profit for many businesses, especially small enterprises.

Payback (PB) divides the initial investment in a project by the annual net cash flow. This shows the number of years until the project pays for itself, or "payback." The business compares the years until payback and a "cut-off" number of years that was chosen earlier. If the project will pay for itself before the cut-off, the project is acceptable.

$$\text{Payback} = \frac{\text{Initial Investment}}{\text{Annual Net Cash Flows}}$$

Payback does focus on net cash flows. Unfortunately, Payback ignores all net cash flows after the payback year. Also, PB and ROI share a serious flaw. Neither technique adjusts future receipts for the time value of money.

Profits or net cash flows expected in the future should not be counted at face value. A future receipt should be adjusted according to when it's expected and the cost of money, a rate or percent. These two adjustments are combined into the time value of money to evaluate projects.

Internal Rate of Return (IRR) finds the rate at which the initial investment equals the total net cash flows that have been adjusted by the time value of money. That rate, the project's yield or profitability, is the IRR. The decision to accept or reject a project is made by comparing the IRR with a "hurdle rate." If the IRR meets or exceeds the hurdle rate, the project can be accepted.

$$\text{Initial Investment} = \text{The Sum of } [(r) (\text{Annual Net Cash flows})]$$

Where "r" is the adjustment for the Internal Rate of Return.

IRR uses the time value of money to show the profitability of a project, but IRR does have some problems. One problem is that IRR is unreliable if a project has a year of net cash outflow (other than the initial investment). Dismantling equipment or facilities, or environmental restoration at the project's end could easily cause a net cash outflow. If this happens, the IRR equation gives two different answers simultaneously. Which one is correct? Another problem is that IRR calculations assume all net cash flows from a project are reinvested at the IRR percentage. If a project's IRR is much higher than the business's normal rate of return, cash probably can't be reinvested at that percentage.

Net Present Value (NPV) shows the difference between the initial costs and the adjusted net cash flows of a project in dollars and cents--NPV automatically shows you "the bottom line." If the NPV is zero, it breaks even; if the NPV is greater than zero, it makes a profit. The larger the NPV, the better.

$$\text{Net Present Value} = \text{Adjusted Net Cash Flows} - \text{Initial Investment}$$

The time value of money is an integral part of all NPV calculations. Also, NPV assumes that cash flows are reinvested at the business's required rate of return, the adjustment rate. This is a more reasonable assumption than IRR uses. However, if NPV is used to compare projects that are extremely different in size, the answers may be misleading. For example, a \$10,000 NPV from a project costing \$120,000 is not necessarily better than a \$7,000 NPV from a project costing \$70,000.

Many companies use a combination of these methods for investment decisions to get a balanced picture. Good or bad points about a project that one technique might not reveal could be shown with another method. Unfortunately, many small businesses do not have the luxury of performing several different analyses for each investment decision. Although no technique is flawless, the most dependable flexible investment analysis method is Net Present Value. NPV looks at cash flows, incorporates the time value of money, always gives one answer, and shows its answer in dollars and cents.

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Definitions

Net Present Value uses consistent terminology regardless of what sort of investment or project is analyzed. If you understand these basic terms, examples will be clearer, and you can use the NPV technique more quickly.

Cash-Flows-In. These are additional (new) revenues that your business will have each year because of the new project. Savings in labor, materials, maintenance, etc. are also cash-flows-in. The key is to include only revenues or savings that your business would not have had without the project. Estimate this amount of money for each year separately.

Cash-Flows-Out. Any additional, on-going, cash expenses that the new project will require are cash-flows-out. In other words, any money that is spent to produce the new sales or get the extra savings is a cash-flow-out. Some typical expenses are labor, utilities, commissions, materials, maintenance and insurance. If you expect increased revenues, you must also pay additional income taxes. Extra income taxes are definitely part of cash-flows-out. Do not include one-time, start-up costs; those will be handled separately. Estimate cash-flows-out for each year separately.

Two expenses might appear on your "books" because of the new projects but should *not* be included as part of cash-flows-out; (a) depreciation; and (b) interest expense. Depreciation is not a "cash" expense, it is an accounting expense. You do not write a check to someone each year for depreciation expense. While interest expense *is* a cash expense, it is automatically included when the net cash flows are adjusted for the time value of money. If you added interest expense into the cash-flows-out, it would be double counted. Both of these types of expenses affect the amount of income taxes, and therefore must be used in calculating income tax expense before subtracting them from cash-flows-out.

Net Cash Flows. Subtract the cash-flows-out from the cash-flows-in for each year. The results are the net cash flows throughout the life of the project.

Time Value of Money. The time value of money depends on two pieces of information: when the money will be received and the required rate of return. If you receive \$100 one year from now, it will be worth less in buying power than \$100 today. If you receive \$100 ten years from now, that future \$100 is worth much less than \$100 today. How much less is determined by the "required rate of return." The required rate of return is how much you would agree to pay to "rent" money in order to use it. One factor that determines this cost is where you could get the money—from your business, from your bank or elsewhere.

Time Value of Money Adjustment. This is the result of calculations using both components from the time value of money. It can be found in published tables, is built into many calculators, or is calculated by hand. This number will automatically adjust money that you expect to receive in the future so that you know what that future receipt is worth to you today.

Adjusted Net Cash Flows. This is each year's net cash flow multiplied by the adjustment for that year. This is the "present value" of each year's net cash flows. After all the years' adjusted net cash flows are added together, you have the total present value of all the benefits this project will have for your business.

Initial Costs. Initial costs include all the start-up costs of a project. Examples are delivery charges, installation, operator training, roll-out advertising, purchase price or shop "dow time." Many other expenses could be an initial cost for your project. The important decision rule is: Is this a one-time or a recurring expense? One-time expenses are initial costs. Total these expenses and you have the project's initial costs.

Net Present Value. This is the difference between the Adjusted Net Cash Flows and the Initial Costs. In other words, this is the absolute bottom line when total costs have been deducted from total benefits throughout the life of a project. If the NPV is greater than zero, the project exceeds the rate of return you have established to compensate you for the risks accepted. If the NPV is less than zero, the project does not meet your return requirements and therefore is to be rejected. As zero, the project will just meet your required return. NPV can evaluate one project or compare many projects. The project with the largest NPV is best if you compare projects that are about the same size and have the same degree of risk.

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How to Calculate Net Present Value

Net Present Value (NPV) is a technique that evaluates investments and gives you an answer in dollars and cents. NPV has two strong points: it looks at cash flows and considers the time value of money. If you need to make a decision about investments like a new product line, new or replacement equipment, or a new service, NPV can give you clear answers. These are the steps to follow to find a project's NPV.

Step 1: Estimate all the additional cash-flows-in that your business will have throughout the project's life. Cash-flows-in could be increased sales, or savings such as decreased materials or labor. Example: Your business will have labor savings from a new attachment. You expect the attachment to be worn out in four years.

	Year 1	Year 2	Year 3	Year 4
Additional Cash-Flows-In	\$5,200	7,800	10,400	10,400

Step 2: Estimate all the additional cash-flows-out that your business will have throughout the project's life. Cash-flows-out would be on-going expenses such as materials, labor, insurance, or maintenance that increase because of the project. Keep these four points in mind. Start-up costs are included in Step 6; don't count them here. Don't add in depreciation; it's not a cash expense. Don't include interest expense; it's accounted for in Step 5.

Do add extra income taxes due on the increased income from the project. Remember, however, that both depreciation and interest affect the amount of income taxes that will be paid, though the actual amounts of both expenses should not be counted as cash-flow-out. Example: The new attachment needs more expensive maintenance; more income taxes will be due on the extra net income.

	Year 1	Year 2	Year 3	Year 4
Additional Cash-Flows-Out	\$4,000	4,000	4,000	7,000

Step 3: Subtract additional cash-flows-out from additional cash-flows-in to find the new project's net cash flows. Example:

	Year 1	Year 2	Year 3	Year 4
Additional Cash-Flows-In	\$5,200	7,800	10,400	10,400
(Less) Additional Cash-Flows-Out	<u>\$4,000</u>	<u>4,000</u>	<u>4,000</u>	<u>4,000</u>
Net Cash Flows	\$1,200	\$3,800	\$6,400	\$3,400

Step 4: Decide what your required rate of return is. Money always costs something whether you borrow from the bank, get it from relatives, or take cash out of your business. The cost of money includes the explicit cost of money, such as the interest paid on a loan, together with a premium for such things as risk. Usually, bankers will determine this premium to be anywhere in the range of 3 percent to 10 percent, depending upon the type of project, the credit history of the borrower, and current economic conditions, among other things.

After you decide on your required return, choose the correct adjustment for each time/required return combination. These adjustments are specific for each combination. They can be found in present value tables, in many calculators' memories or you can compute them. Example: You choose 17 percent because this is the return you have been earning on profits that have been reinvested in the company during the past five years. These are each year's adjustments.

	Year 1	Year 2	Year 3	Year 4
Adjustment (@ 17%)	0.8547	0.7305	0.6244	0.5337

Step 5: Multiply each of the net cash flows by the appropriate adjustment. After you have done the multiplication, all the future net cash flows are expressed in current dollars. Example:

	Year 1	Year 2	Year 3	Year 4
Adjustment (@ 17%)	0.8547	0.7305	0.6244	0.5337
Net Cash Flows	<u>\$1,200</u>	<u>3,800</u>	<u>6,400</u>	<u>3,400</u>
Adjusted Net Cash Flows	\$1,026	2,776	3,996	1,815

Step 6: Add the adjusted net cash flows together. The result is the total adjusted net cash flow. Example:

	Year 1	Year 2	Year 3	Year 4
Adjusted Net Cash Flows	\$1,026	2,776	3,996	1,815
Total Adjusted Net Cash Flow				

$$\$1,026 + 2,776 + 3,996 + 1,815 = \$9,613$$

Step 7: Estimate the total initial costs. These are costs such as "purchase" price, installation, roll-out advertising, or any other one-time expense. Example: You will need to buy the attachment, train two operators, and pay for some new wiring.

$$\text{Initial Costs} = \$5,000$$

Step 8: Subtract the initial costs from the total adjusted net cash flows to find the Net Present Value of the new project. This is the value of the project's benefits to your business after all costs have been deducted--those are for the entire project's life. If the NPV is equal to or greater than zero, take it! It meets or exceeds the returns you have determined are required to make the investment. If net present value is less than zero, the project does not provide the returns you feel are necessary to warrant taking the risk on the project. Example: The new attachment would be profitable for your business.

Total Adjusted Net Cash Flow	\$9,613
(minus) Initial Costs	<u>5,000</u>
New Present Value	\$4,613

It is important to make the best estimates possible because the answers that you get with NPV will depend on the estimates that you make. Careless estimates could give you inaccurate results. With inaccurate results, you might pass up a good opportunity, or worse, you may invest in a losing project. It is also important to be as consistent as possible when comparing projects, equipment, new products, or services. If you are not consistent with how you "count" or estimate expenses and revenues, you have lost the opportunity to make a fair judgment of comparison. A consistent approach to estimation lets you compare projects, equipment, or services fairly.

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Case Study 1: Adding a New Product Line

Let's say that you are the manager of the Sure-Fire Sportswear Company. You are thinking about introducing a new sports applique to your product line. You believe that the demand for this new applique will be great for five years but will evaporate after that. (Sports fans can be fickle.) Over that five-year-period you feel you can make reasonable guesses about your expenses and revenues. You estimate that extra sales for Sure-Fire from the applique will look like this:

	Year 1	Year 2	Year 3	Year 4	Year 5
Cash-Flows-In	\$15,000	20,000	25,000	20,000	15,000

After you have made a reasonable estimate of the additional cash-flows-in, you need to estimate the extra commissions, labor, material, and other expenses, that Sure-Fire will incur to produce those extra sales. These make up the additional cash-flows-out.

Additional cash-flows-out for a company could include increases in expenses like these: labor, supplies, commissions, advertising, insurance, utilities, maintenance, or income taxes. These additional cash-flows-out should not include the costs to start a project, such as the purchase price of equipment, a franchise, or a license. Start-up or initial costs will figure into the NPV calculations separately. Additional cash-flows-out are the kinds of costs that a business would have throughout the life of the project.

Look at the new applique at the sportswear company again. Sure-Fire would have some additional costs on a regular basis throughout the five years that it manufactured the new applique. When you total the extra materials, labor, commissions, income taxes, and advertising that Sure-Fire would have to pay to bring the applique to its customers, the best estimates of the extra costs look like this:

	Year 1	Year 2	Year 3	Year 4	Year 5
Cash-Flows-Out	\$12,000	13,000	13,000	11,000	8,000

Always remember to include extra income taxes that would be due as part of the cash-flows-out. An increase in income taxes from the extra profits Sure-Fire will have on the new applique has been included in the cash-flows-out that are shown.

Two Exceptions. Two items that you might often think of as expenses have not been mentioned as a cash-flows-out. Most businesses borrow money occasionally, or they may have revolving-type credit lines. Because of this, many businesses have interest expenses. Interest expense was not mentioned in the cash-flows-out for Sure-Fire. The other missing expense is depreciation. Almost all businesses with vehicles, equipment, or buildings "on the books" are showing a depreciation expense on their income tax forms and financial statements. Why aren't these two expenses included as cash-flows-out?

If you included the interest expense in the additional cash-flows-out, it would be double counting. Why? Interest expenses are computed and included automatically in the discount rate you use to adjust the net cash flows.

Depreciation expense is not listed because it is a "noncash" expense; NPV includes only cash items. Yes, you bought and may have paid for the vehicle, equipment, or building in cash. However, depreciation laws require that the cost of that sort of purchase be spread over several years on the books and for tax purposes. Like interest expense, net present value does include depreciation as an expense. All the start-up costs are included as initial costs.

For example, when you buy equipment and pay for it, you are not allowed to show all the cost of the equipment as an expense for the year that you bought the equipment on your income tax forms.¹ You and your accountant or tax advisor have to set up a depreciation schedule. With the depreciation schedule, you deduct the equipment's cost, but the cost is divided up and spread over several years.² Eventually you deduct all the equipment's cost through depreciation expenses. Depreciation is called an expense each year at tax time although no additional cash has changed hands. Because no cash changes hands, depreciation is not included in cash-flows-out.

Even though neither interest nor depreciation are included as a cash-flows-out, they do have an important part in net present value calculations. Both must be calculated to determine what income taxes are due. This will be shown later.

Net Cash Flows. After cash-flows-in and cash-flows-out are estimated, determining the net cash flows is a straight forward step. Subtract the cash-flows-out from the cash-flows-in. For instance, the net cash flows for the Sure-Fire Sportswear Company from the new applique are:

	Year 1	Year 2	Year 3	Year 4	Year 5
Cash-Flows-In	\$15,000	20,000	25,000	20,000	15,000
Cash-Flows-Out	<u>12,000</u>	<u>13,000</u>	<u>13,000</u>	<u>11,000</u>	<u>8,000</u>
Net Cash Flows	\$ 3,000	7,000	12,000	9,000	7,000

Obviously, all those net cash flows are *not* coming into Sure-Fire at the same time. What is not so obvious is that if cash comes to a business later rather than sooner, it is worth less to the business. Adjusting dollars for timing and for their cost is where the time value of money applies to the NPV calculations.³

Adjusting for the time value of money

The decisions you make about which opportunities to pursue will probably affect your business's net cash flows for more than a year. It may be two years, three years, or even longer before all the effects of new projects that you have chosen can be realized. Unless all the benefits from a project would come in one year or less, the time value of money must be taken into account to get a true picture of project's financial performance. The reason is that money received now has more value than the same amount of money if it is received later. For instance, in 1948 a new, fully-equipped, luxury car could be bought for \$8,000. In 1990, \$8,000 would buy a new, modest economy car. The same \$8,000 is not worth as much in 1990 as it was in 1948.

To include the time value of money, the net cash flows are adjusted to reflect two things: (a) how long it will be before you actually get the net cash flows; and (b) what you determine is your required rate of return for the project. You have already made an estimate of when you would receive the net cash flows. You can make an estimate for the cost of money on your own, talk with your banker or financier, or confer with an advisor. The real value of a project can be determined only if you calculate what future cash flows are worth today, i.e., in current dollars.

To adjust the net cash flows for a proposed project correctly, you must decide what your cost of money is. You may be able to take all necessary cash out of the operations of your current business, but that money is not free. If you or a partner put more money in the business as owners' equity specifically for the proposed project, that is not free either. Obviously if you borrow money, a cost is involved, interest charges.

Several factors are used in determining the required rate of return. If you take money from your ongoing operations, the rate would include the return that you expect from your present business. If you get the money by increasing owners' equity, you or your partner have given up the opportunity to invest that money elsewhere. The required rate would then be the return on the alternative investment that you passed up plus an amount to compensate you for the risk involved in investing in this project. If you combine some of these sources to raise the money for a project, adjust the cost of money accordingly.

Another approach to financing the project is borrowing the money. In this case, the interest paid on the loan would be a factor in your required rate of return decision.

Regardless of the approach that you take, assume that all the money will be received at the end of each year. That makes the calculations easier. To illustrate how to make the adjustment to net cash flows, consider the sports applique example.

The new applique that Sure-Fire is considering would produce cash flows for five years. For the applique the net cash flows over five years will look like this:

	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash Flows	\$3,000	7,000	12,000	9,000	7,000

These amounts are the net cash flows that you will adjust because you will receive them after one or more years have passed.

With the applique, you have decided to use a 15 percent required rate of return for Sure-Fire's investment. This is the rate at which the owners feel they would be compensated for the investment in the project as well as be able to pay back any debt incurred to finance the project.

You can find the adjustment factors for the 15 percent return Sure-Fire has decided on by using a business calculator or a printed table of these numbers. Or, you can calculate them for yourself.⁴ The adjustments values for 15 percent and net cash flows for the applique are:

	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash Flows	\$3,000	7,000	12,000	9,000	7,000
Adjustment	0.8696	0.7561	0.6575	0.5718	0.4972

To find the applique's adjusted net cash flow, multiply the net cash flows for each year by the adjustment for each year. After you have done the multiplication, total the five years. This sum is the aggregate adjusted net cash flow. For the new applique the total adjusted net cash flow would be:

	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash Flows	\$3,000	7,000	12,000	9,000	7,000
Adjustment (at 15%)	0.8698	0.7561	0.6575	0.5718	0.4972
Adjusted Net Cash Flows (at 15%)	\$2,609	5,293	7,890	5,146	3,480
Total Adjusted Net Cash Flow (at 15%)	$\$2,609 + 5,293 + 7,890 + 5,146 + 3,480 = \$24,418$				

You might want to compare these figures to the unadjusted net cash flows. There is a significant difference all of which is due to the time value of money.

	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash Flows	\$3,000	7,000	12,000	9,000	7,000
Adjusted Net Cash Flows (at 15%)	2,609	5,293	7,890	5,146	3,480

Remember that the adjusted net cash flows reflect the value of the cash flows from the project in current (today's dollars). Now that the adjusted net cash flows have been calculated, the next step in the NPV calculation is to look at the initial costs.

Initial Costs. All the expenses required to get the new project, product, or equipment started are initial costs. These costs are one-time events. If you are showing the same cost more than once, it should be included in the cash-flows-out. The type of costs usually included as start-up costs are: purchase price, installation expenses, freight-in or delivery, "roll-out" advertising, and one-time training costs.

Let's go back to the sportswear applique example. Sure-Fire's sports applique projects would have some one-time start-up costs like: sales training, operator training, new sewing machine attachments, and miscellaneous costs. The total of these initial costs for the applique would be \$15,000. It is not necessary to adjust any of the initial costs. You are spending all the money now not next year or the year after that. Since the money would be spent currently, it requires no adjustment; a dollar today is worth a dollar.

Net Present Value. Now Sure-Fire has all the estimates to calculate the net present value of manufacturing the applique. Adjusted net cash flows for the applique were \$24,418 and initial costs were \$15,000. The NPV for the applique project for Sure-Fire would be:

$$\begin{aligned} \text{Adjusted Net Cash Flow} - \text{Initial Costs} &= \text{NPV} \\ \$24,418 - 15,000 &= \$9,418 \end{aligned}$$

Since the NPV of the new sports applique would be \$9,418, it is definitely a good opportunity. Sure-Fire would cover all costs including the 15 percent required rate of return on the project, and, in addition to that, it would make \$9,418 in today's dollars.

There are some reasons why Sure-Fire might not make the applique. Something even better could come along. It also might be impossible to raise the \$15,000 initial costs from inside the business, or with additional contributions from owners, or to borrow it. Sure-Fire might be able to borrow the money if it were willing to pay more to get the money. However, one important thing to remember is: Any change in the cost of money changes the value of a project.

Different Costs of Money

If the cost of money changes, the value of any project will change. The rate you use for adjusting the cash flow will account for all of the change. In this way a project's value can increase or decrease even though net cash flows and initial costs have not changed. Sure-Fire's applique project can illustrate this point.

For example, let's say that everything about the applique is the same except the required rate of return has changed. Initial costs for the applique are \$15,000 and the net cash flow will last for five years at \$3,000, \$7,000, \$12,000, \$9,000, and \$7,000. However, your banker has decided to lend you money for the applique at a lesser rate. In other words, your required rate of return can be lowered to, say, 10 percent. That lower rate will change the adjustment used to discount the net cash flows, and ultimately the NPV of the applique project.

Look at what happens to the value of the applique. Keep in mind that the net cash flows over the next five years and the initial costs for the applique are the same. The one change for the applique would be the rate that Sure-Fire uses to adjust the net cash flows. When you use an adjustment for a 10 percent required rate of return, these are the figures:

	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash Flows	\$3,000	7,000	12,000	9,000	7,000
Adjustment (at 10%)	0.9091	0.8264	0.7513	0.6830	0.6209
Adjusted Net Cash Flows (at 10%)	\$2,727	5,785	9,016	6,147	4,346
Total Adjusted Net Cash Flows (at 10%)	\$2,757 + 5,785 + 9,016 + 6,147 + 4,346 = \$28,021				

When the net cash flows are adjusted at a 10 percent rate, the sum is higher than if the net cash flows are adjusted at 15 percent rate. This is because the required rate of return has been lowered from 15 percent to 10 percent. The difference in the two adjusted net cash flow totals is caused only by the different adjustment rates that reflect

the change in the cost of money. The ultimate measure of the applique's value is the money that Sure-Fire will net from the project, the NPV. Since the required return has decreased, NPV will increase.

$$\begin{aligned} \text{Adjusted Net Cash Flow} - \text{Initial Costs} &= \text{NPV} \\ \$28,021 - \$15,000 &= \$13,021 \end{aligned}$$

The applique's net present value is higher by \$3,603. The \$3,603 increase in value between the NPVs at a 15 percent versus a 10 percent rate is caused only by the change in the required rate of return. The net cash flows were exactly the same before they were adjusted.

Notice that the difference in the adjusted net cash flows is the same as the difference in the NPVs.

	Sum of the Adjusted Net Cash Flow		Initial Costs	=	Net Present Value
Adjusted at 10%	\$28,021	–	\$15,000	=	\$13,021
Adjusted at 15%	<u>24,418</u>	–	<u>15,000</u>	=	<u>9,418</u>
Difference	\$ 3,603		0		\$ 3,603

The initial costs did not change; those dollars are spent now. Since the purpose of adjusting dollars amounts is to determine what they are worth now, the present value of money that you spend now is 100 percent.

On the other hand, if the required rate of return increases due to such factors as an increased borrowing rate, poor economic conditions, or a perceived high level of risk from the project being considered, the value of an investment will fall. Go back to the applique and see what happens when Sure-Fire adjusts the net cash flows as a 20 percent rate. The unadjusted net cash flows are the same over five years and the initial costs are the same. Only the adjustment rate is changed because the required rate of return has changed. Here is how Sure-Fire's applique evaluation will change because of the higher required return:

Net Cash Flows	\$3,000	7,000	12,000	9,000	7,000
Adjustment (at 20%)	0.8333	0.6944	0.5787	0.4823	0.4019
Adjusted Net Cash Flows (at 20%)	\$2,500	4,861	6,944	4,341	2,813
Sum of the Adjusted Net Cash Flows (at 20%)	\$2,500 + 4,861 + 6,944 + 4,341 + 2,813 = \$21,459				

The sum of the adjusted net cash flows is lower at 20 percent than at 15 percent. At 15 percent that sum was \$24,418 and at 20 percent the sum is \$21,459. All of the \$2,959 decrease in the applique's value is caused by an increase in the required rate of return from 15 percent to 20 percent. The difference of \$2,959 in the two sums will carry through to the NPVs.

$$\begin{aligned} \text{Adjusted Net Cash Flow} - \text{Initial Costs} &= \text{NPV} \\ \$21,459 - 15,000 &= \$6,569 \end{aligned}$$

The net present value when money costs 20 percent is lower by \$2,959 than when the discount rate was 15 percent. The \$2,959 difference between the NPVs at 15 percent and 20 percent is caused only by the rate used to adjust the net cash flows. This change reflects an increase in the required rate of return. The net cash flows were exactly the same before they were adjusted for this increase in required return. Again the difference in the adjusted net cash flows is the same as the difference in the net present values.

	Sum of the Adjusted Net Cash Flow		Initial Costs	=	Net Present Value
Adjusted at 20%	\$21,459	–	\$15,000	=	\$6,459
Adjusted at 15%	<u>24,418</u>	–	<u>15,000</u>	=	<u>9,418</u>
Difference	– \$ 2,959		0		– \$2,959

These examples about Sure-Fire's new applique show more than the great difference that the cost of money can make. They also illustrate why interest expense is not included in the cash-flows-out to find the net cash flow; it would be double counting to include interest expenses in cash-flows-out beyond calculating the effect on income taxes. The required rate of return that you choose to adjust the net cash flows will take the time value of money into account automatically whether you borrow the money, contribute equity, or take it out of your business.

Whether the cost of money is 10 percent, 15 percent, or 20 percent, the applique is still a good investment for Sure-Fire. Although the NPV of the applique is different with each required rate of return, the NPV is always far greater than zero between rates of 10 percent and 20 percent.

Note that if the new applique earned exactly a 20 percent return, the NPV would have been zero. Since the applique's NPV is greater than zero when money costs 20 percent, its return is greater than 20 percent. If through trial and error, a person increased the adjustment rate enough, he or she would find that the discount rate that would make the NPV of the project zero, is just under 35.77 percent.⁵ If you use an adjustment rate higher than this, the NPV of the applique will be negative. Clearly, project's NPVs change with the rates of return that are used to adjust the net cash flows. The other factor that can change the NPV of the same project is the net cash flows' *timing*.

Different timing of net cash flows

Net present value not only accounts for the cost of money, it accounts for the timing of net cash flows, too. Two projects could have the same total net cash flows, but differences in the timing of those cash flows could have a great effect on how valuable

the project would be. Whether a project receives larger cash flows earlier or later in its life can make a great difference in the project's value. If a project receives larger cash flows sooner, it will be more valuable than a similar project that receives the same larger cash flows later. Sure-Fire's applique can illustrate this point.

The applique has a total net cash flow of \$38,000. A competitor has another applique that has the same total net cash flow, \$38,000. However, the timing of the cash flows is different. Sure-Fire's applique would probably be a slower starter because it is for a fledgling hockey team. The competitor's applique would probably have higher sales initially and have lower sales later. The competitor's applique is for a hockey team that is established and doing well now, but many of the players are about to pass their athletic prime.

	Sure-Fire's Applique Net Cash Flows	Competitor's Applique Net Cash Flows
Year 1	\$ 3,000	\$ 7,000
Year 2	7,000	12,000
Year 3	12,000	9,000
Year 4	9,000	7,000
Year 5	<u>7,000</u>	<u>3,000</u>
Total Net Cash Flow	\$38,000	\$38,000

Of course, none of these net cash flows have been adjusted for the time value of money. The required rate of return for the investment in appliques for both companies is 15 percent. When the adjustments are made and the net cash flows totaled, an interesting difference emerges.

	Sure-Fire's Applique Net Cash Flow	Adjust- ment (15%)	Adjusted Net Cash Flows
Year 1	\$ 3,000	0.8696	\$ 2,609
Year 2	7,000	0.7561	5,293
Year 3	12,000	0.6575	7,890
Year 4	9,000	0.5718	5,146
Year 5	<u>7,000</u>	0.4972	<u>3,480</u>
Total Net	\$38,000		\$24,418
	Competitor's Applique Net Cash Flow	Adjust- ment (15%)	Adjusted Net Cash Flows
Year 1	\$ 7,000	0.8696	\$ 6,087
Year 2	12,000	0.7561	9,073
Year 3	9,000	0.6575	5,918
Year 4	7,000	0.5718	4,003
Year 5	<u>3,000</u>	0.4972	<u>1,492</u>
Total Net	\$38,000		\$26,573

The Sure-Fire's applique has adjusted net cash flows that total \$24,418. However the competitor's applique has a total adjusted net cash flows of \$26,572. The difference in the adjusted net cash flows from the two appliques is caused only by a change in the timing of the net cash flows. The total unadjusted net cash flow and the adjustment rate are the same. Only the order in which the net cash flows are earned has changed, but this has made a \$2,155 difference.

$$\$26,573 - 24,418 = \$2,155$$

This same dollar amount difference, \$2,155, would be found in the NPVs of the two appliques because the initial costs were the same for both, at \$15,000.

Total Adjusted Net Cash Flow	\$24,418	\$26,573
(Less) Initial Costs	<u>15,000</u>	<u>15,000</u>
New Present Value	\$ 9,418	\$11,573

Net present Value is responsive to the cost of money, and the timing of cash flows regardless of the type of investment decision for which it will be used. With NPV, products, equipment, or services can be evaluated. NPV can also be used to make decisions about equipment replacements. Since this has been a popular use for NPV, let's look at a NPV analysis for an equipment replacement decision.

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Case Study 2: Replacing old Equipment

Another use for net present value is evaluating whether replacing old equipment would be a valuable purchase or not. New technology can increase efficiency, and new equipment could give a business owner an ego boost; but will it be valuable to the business? To illustrate this use of NPV, let's go back to operations at Sure-Fire.

Since you are the manager of Sure-Fire, the owner has asked you to decide whether to replace an old press. A new press will not increase production by even one unit, but since Sure-Fire bought the old press, the technology has changed drastically. The old press is incredibly durable, but a new press is much more efficient. Efficiencies from a new press would give you substantial savings in labor and maintenance over your old press.

Should Sure-Fire keep the old press or buy a new one? To get a definite dollars-and-cents idea of whether it would pay to replace that old press, use net present value.

If you can get a new press, there will be additional cash-flows-in, cash-flows-out, and initial costs. These are different cash flows from those the business has currently. If you keep the old press, there are no additional cash flows that are different from those currently earned or paid. Nothing has changed if no new press is bought, and the old press is kept.

Cash-flows-in. First you have to consider the cash-flows-in that the new press will produce. The new press would save Sure-Fire about \$6,000 yearly in labor and maintenance for the next five years. That saving in operating costs will be the only cash-flow-in that a new press would generate. The next step in evaluating whether to replace the old press is to determine the cash-flows-out.

Cash-flows-out. The only cash-flows-out that you anticipate for a new press will be extra income taxes paid on the higher income Sure-Fire will have because of the savings in operating costs from the new press. Before you can calculate the change in income taxes accurately, you will have to look at financing costs for the new press and depreciation for both the old and new presses. Depreciation affects the additional income taxes that would be due on higher income that Sure-Fire would have with a new press. This has to be included to get a clear picture of how Sure-Fire will be affected.

Depreciation's tax effects. The depreciation expense that is deducted on income tax returns and appears on financial statements is determined by a schedule that is set up based on an asset's "book value." By using depreciation, an asset's book value is deducted gradually over the useful life of the asset. An important point is that the depreciable book value of an asset may not be the same as the sticker price or the initial cost of the asset. Let's determine the "book value" of the new press for Sure-Fire.

The book value of a new press would include the actual purchase price, delivery charges, installation costs, and any one-time set-up or operating training costs. The best sticker price that Sure-Fire can find on a new press is \$17,500. If Sure-Fire buys that machine, installation costs will total another \$2,500 before it can be used.

Fortunately, you have been able to negotiate with the vendor to absorb the delivery and freight charges for shipping that new machine to Sure-Fire. If you had not been able to get those concessions from the vendor, the freight charges would be included in the book value. Another plus for the new press is that you will not have any downtime in the shop while the machine is installed; space for it is available and the installation will not disrupt Sure-Fire's production process. This is the calculation of the new press's book value:

Book Value for Depreciation (New Press)

Sticker Price	\$17,500
Installation	2,500
Delivery	<u>0</u>
Book Value	\$20,000

Under the current scenario, if you buy a new press, you would sell the old one. Because of their durability there is a good market for this kind of used press. Even though you can probably get about \$2,000 when you sell the old press, the \$2,000 cannot be subtracted from the book value of a new press. So the book value used for depreciating the new press is \$20,000.⁶

The \$20,000 book value of the new press is the amount that Sure-Fire depreciates over the press's useful life, which is the next five years. The technology on this type of machine has been advancing rapidly and those advances are probably going to continue. So in five years, a press that Sure-Fire could buy today would probably be worthless. At the end of the fifth year you could probably trade with someone to haul it away for the scrap value that they can get out of it. Since the new press would be worthless to Sure-Fire in five years, the new press's entire book value can be depreciated.⁷

You have decided to depreciate the new machine using a straight-line technique.⁸ This means Sure-Fire would deduct the same amount each year for the next five years. To calculate the amount of depreciation on the new press, divide the new press's book value by its useful life, five years. This is the amount of depreciation Sure-Fire would deduct each year on income taxes and financial statements as depreciation expense for the new press. For this new press the depreciation each year would be:

$$\text{Book Value/Years of Asset Life} = \text{Annual Depreciation}^9$$

$$\$20,000/5 = \$4,000$$

Since the depreciation on the new press would be the same each of the next five years, Sure-Fire's depreciation schedule for the new press will look like this:

	Year 1	Year 2	Year 3	Year 4	Year 5
Depreciation Schedule (New Press)	\$4,000	4,000	4,000	4,000	4,000

You also have to consider the depreciation you would give up if Sure-Fire got rid of the old press. The book value of the old press is \$2,000 and it will last another five years.¹⁰ However, when the old press was purchased four years ago at a cost of \$10,000,

a straight-line depreciation schedule was established assuming no salvage value at the end of its estimated useful life. As a result, the company has been depreciating \$2,000 per year for this asset. The final \$2,000 of book value will be depreciated over the next year, leaving the value on the books of the old press at \$0 at the end of this year. Therefore, the depreciation expense that Sure-Fire would show each year on its income tax returns and financial statements by keeping the old press is \$2,000 next year and \$0 for the next four years.

	Year 1	Year 2	Year 3	Year 4	Year 5
Depreciation Schedule (Old Press)	\$2,000	0	0	0	0

The point of all those depreciation calculations is to find the impact that these changes will have on Sure-Fire's before-tax income. Extra income taxes must be paid on the higher income Sure-Fire will have from the operating savings that the new press will provide. Additional income before taxes must be calculated to include giving up the old press's depreciation and at the same time getting the new press's depreciation as an expense. As you can see, the additional after-tax income in year one is \$3,220 on the books.

New Press Profit on the Books—Year 1

Annual Savings		\$6,600
Depreciation (New)	\$4,000	
(Less) Depreciation (Old)	<u>2,000</u>	
(Less) Additional Depreciation		<u>2,000</u>
Additional Income before Taxes		4,600
(Less) Additional Income Taxes (30%)		<u>1,380</u>
Additional Income after Taxes		\$3,220

By year two, the situation will have changed due to the complete depreciation of the old press.

New Press Profit on the Books—Year 2

Annual Savings		\$6,600
Depreciation (New)	\$4,000	
(Less) Depreciation (Old)	<u>0</u>	
(Less) Additional Depreciation		<u>4,000</u>
Additional Income before Taxes		2,600
(Less) Additional Income Taxes (30%)		<u>780</u>
Additional Income after Taxes		\$1,820

The differences between years one and two relate solely to the amount of depreciation available for the old press.

Now you can get a complete picture of how cost savings in operations, and increased income taxes will affect the cash flows at Sure-Fire. It is interesting to compare the numbers on the books with cash flow.

The new press will look different in terms of net cash flow than how it will appear on the books. Remember that NPV focuses on additional net cash flow. From either point of view the annual operating expense savings will be the same, \$6,600, a cash-flow-in.

Year 1		
	New Press Profit on the Books	New Press in Net Cash Flow
Annual Savings	\$6,600	\$6,600
Depreciation (New)	\$4,000	
(Less) Depreciation (Old)	<u>2,000</u>	
(Less) Additional Depreciation	<u>2,000</u>	
Additional Income before Taxes	4,600	
(Less) Additional Income Taxes (30%)	<u>1,380</u>	<u>1,380</u>
Additional Income after Taxes	\$3,220	Additional Net Cash Flow \$5,220

Year 2		
	New Press Profit on the Books	New Press in Net Cash Flow
Annual Savings	\$6,600	\$6,600
Depreciation (New)	\$4,000	
(Less) Depreciation (Old)	<u>0</u>	
(Less) Additional Depreciation	<u>4,000</u>	
Additional Income before Taxes	2,600	
(Less) Additional Income Taxes (30%)	<u>780</u>	<u>780</u>
Additional Income after Taxes	\$1,820	Additional Net Cash Flow \$5,820

Extra taxes that Sure-Fire must pay on the extra income are also the same because paying income taxes is a cash-flow-out. Savings from operations and additional income taxes paid are the only changes in cash flow that the new press would cause for Sure-Fire. Additional net cash flows from the new press will total \$5,220 for year one and \$5,820 for each of the next four years. Additional income on the books is \$2,000 lower than additional net cash flow in year one and \$4,000 lower over the remaining four years. Depreciation causes these differences.

Depreciation shows only on Sure-Fire's "books;" this is where the difference between "book" income and new cash flow appears. However, to calculate any additional income tax liability, depreciation will always have to be calculated and included. Sure-Fire would receive \$5,220 additional net cash flow next year from the new press.

Initial Costs. The initial costs of buying the new press versus continuing business with the old press is the next step in NPV calculations. As we said earlier, the sticker price on the new press is \$17,500. Installation costs will total another \$2,500. The vendor absorbed the delivery charges for shipping the new machine to Sure-Fire. If you had not

been able to get those concessions from the vendor, the freight and delivery charges would be an initial cost also. There is no shop down-time while the machine is installed because space for it is open. The last item to include in the total initial cost is the money Sure-Fire can get from selling the old press after the new press has been installed.

The old press can be sold for \$2,000. It is in good condition and there is an active "used" equipment market for this kind of press. The money that Sure-Fire receives from the sale of the old press should be subtracted from the initial cost of the new press:¹¹

Initial Cost (New Press)

Sticker Price	\$17,500
Installation	2,500
Delivery	0
(Less) Sale on Old Press	<u>2,000</u>
Total Initial Cost	\$18,000

The difference between book value and initial costs of the new press is \$2,000 (the money from the sale of the old press). When an old asset is replaced by a new asset, the new asset's initial costs include all the cash costs and the cash received on the sale of the asset that it replaced.

New Present Value. Now you can find the NPV for the new press at Sure-Fire by adding the adjusted net cash flows and subtracting the initial costs. Adjust the net cash flows at 15 percent.

	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash Flows	\$5,220	5,820	5,820	5,820	5,820
Adjustment (at 15%)	0.8696	0.7561	0.6575	0.5718	0.4972
Adjusted Net Cash Flows (at 15%)	\$4,539	4,401	3,827	3,328	2,894
Total Adjusted Net Cash Flows (at 15%)	\$4,539 + 4,401 + 3,827 + 3,328 + 2,894 = \$18,989				

$$\begin{aligned} \text{Adjusted Net Cash Flow - Initial Costs} &= \text{NPV} \\ \$18,989 - 18,000 &= \$989 \end{aligned}$$

The new press exceeds the 15 percent required rate of return and would therefore be considered a good investment if Sure-Fire has the money and wants the new press. In other words, the new press will earn enough money to cover all costs including the 15 percent required rate of return and an additional \$989 over and above all costs. We have evaluated new products, compared different costs of money, contrasted different cash flow timing, and examined replacing equipment by using net present value.

Could NPV be used to evaluate a new service?

Neeley, Lynn. "Three questions that net present value analysis can help you answer." *Small Business Forum*, Winter 1992/1993. © *Small Business Forum*. Translated and used with permission.

Case Study 3: Adding a New Service

Net present value can be useful for service businesses of all types. The best way to show this is with an example about a service business.

Roho's Barbecue is a restaurant and catering service located in the same town as Sure-Fire. Roho is a friend of yours and has talked with you about starting a lunch delivery service. Customers who phone in orders by 10:30 a.m. could have their lunch delivered between 11:00 a.m. and 2:00 p.m. Roho believes this new service would generate dependable extra sales without cannibalizing his lunch walk-in trade. Unfortunately, Roho has learned that two new delivery trucks, a necessity for the lunch delivery service, will cost a total of \$24,000.

Roho is convinced that this kind of convenient, time-saving service will become popular in some parts of town. Several parts of town have high densities of shops or stores with owner/operators and office complexes. These are the people that Roho believes will represent most of the regular customer base for a lunch delivery service. Roho anticipates sales that average 50 meals a day, Monday through Friday, as a reasonable demand for the delivery service. To start the net present value analysis, Roho has to estimate cash-flows-in.

Cash-Flows-In. Roho believes that over the next five years the restaurant will deliver an average of 50 meals per day for 5 days a week on a year-round basis. Roho has decided that the average price per meal and minimum delivery purchase per stop will be the same at \$8.50. Roho had two reasons for the \$8.50 average delivered meal price. First, the average lunch menu item served in the restaurant is about \$6.00. Roho figures that the time to drive from the parts of town with most of the shops and offices to the restaurant is worth far more than \$2.50 to the potential customers. The second reason is related to the way in which the delivery and service personnel will be compensated.

Delivery personnel will work for a low wage plus tips. Those tips will be shared with the service personnel who will arrive two hours earlier than usual at the restaurant to take the phone orders. Roho thinks that this will give the delivery and service personnel an incentive to be pleasant with customers and accurate with orders. If the average meal price is \$8.50, tax is about 60 cents. That is an average total customer bill of \$9.10. A delivery person would probably receive at least \$10 for the combination of meal, tax, and tip. A \$10 bill would be easy, quick, convenient, and few people would not give the 90 cent tip on a \$9.10 bill. Given the \$8.50 average meal price and the expected demand level, cash-flows-in should be \$110,500 for each of the next five years.

$$50 \text{ Meals/Day} @ \$8.50/\text{Meal} = \$425/\text{Day}$$

$$\$425/\text{Day} \times 260 \text{ Days/Year} = \$110,500$$

Cash-Flows-Out. Extra cash-flows-out that Roho foresees for the lunch delivery service would be for: food; food preparation; three part-time delivery people; advertising; licenses; recyclable take-out containers, cutlery, and condiments; and truck maintenance and/or operating expenses, like gasoline, maintenance, and insurance. Since the business is

expected to flourish, Roho expects to hire another prep/line cook for the first shift, to add higher-salaried-hours for two regular service personnel to take the orders, and to compensate the day manager for the additional responsibility of the delivery service. Roho figures that a partial schedule of cash-flows-out over each of the next five years would be:

Truck Maintenance/Operating Costs (\$100/wk/truck)	\$10,400
Advertising (\$25/wk)	1,300
Food (25% of receipts)	27,625
Food Preparation (30 hrs/wk @ \$12/hr wage + benefits)	18,720
Containers/Condiments/Cutlery (@ \$0.50/meal)	6,500
Service Personnel (20 hrs/wk @ \$10/hr wage + benefits)	10,400
Delivery Personnel (12 hrs/wk @ \$5/hr wage + benefits)	9,360
Uniforms (\$5/day/person)	3,900
Licenses/Fees	<u>500</u>
	\$88,705

These cash-flows-out, \$88,705, only represent part of the total annual cash-flows-out. The day manager has to be compensated and motivated to run this delivery service well, and income taxes will be due on any additional income. The tax liability and also the manager's compensation have to be added into the calculation of cash-flows-out.

Roho believes that 50 percent of the before-tax-and-depreciation profit would be a good deal for the manager. Since the gross profit is \$21,795, the day manager's compensation would be \$10,898.

Total Receipts	\$110,500
(Less) Cash-Flows-Out	<u>88,705</u>
Gross Profit before Taxes or Depreciation	\$ 21,795
Manager's 50%	\$ 10,898

The manager's compensation is then added to the other cash-flows-out.

Cash-Flows-Out	\$ 88,705
Manager's 50%	<u>10,898</u>
Total Cash-Flows-Out except Taxes and Depreciation	\$ 99,603

In order to figure out what additional income taxes will be due, depreciation on the two new trucks has to be calculated and included on the books. Remember that expenses for tax purposes are not the same as cash-flows-out because depreciation expense is included for tax purposes.

The two trucks cost \$12,000 each and can be depreciated over three years on a straight line basis. This schedule allows \$8,000 depreciation each year for the trucks over the first three years of the lunch delivery project.

$$2 \text{ Trucks @ } \$12,000 \text{ each} = \$24,000$$

$$\$24,000/3 \text{ Years} = \$8,000 \text{ Annual Depreciation}$$

Now depreciation can be added to the other expense so that additional income taxes that would be due can be calculated.

Annual Receipts	\$110,500
(Less) Expense (except Depreciation)	<u>99,603</u>
Gross Profit	10,897
(Less) Depreciation	<u>8,000</u>
Additional Income before Taxes	2,897 ¹²
Additional Income Taxes (30%)	<u>869</u>
 Additional Income after Taxes	 \$2,028

During the three years that the trucks are depreciated, profits for income tax purposes will be different from net cash flows. The difference will be in depreciation.

	First Three Years of New Service Profits on the Books	First Three Year of New Service Net Cash Flow
Annual Receipts	\$110,500	\$110,500
(Less) Expense (except Depreciation)	<u>99,603</u>	<u>99,603</u>
Gross Profit	10,897	10,897
(Less) Depreciation	<u>8,000</u>	
Additional Income before Taxes	2,897	
Additional Income Taxes (30%)	<u>869</u>	<u>869</u>
Additional Income after Taxes	\$2,028	Additional Net Cash Flow \$10,028

For the first three years, Roho will get \$10,028 per year in extra net cash flow, but will show income of only \$2,028 on the books for income tax purposes. The \$8,000 difference is the amount of depreciation taken as an expense.

The last two years of the delivery service will have net cash flows that are the same as profits for income tax purposes because there will be no more depreciation expense.

	Final Two Years of New Service Profits on the Books	Final Two Year of New Service Net Cash Flow
Annual Receipts	\$110,500	\$110,500
(Less) Expense (except Depreciation)	<u>99,603</u>	<u>99,603</u>
Gross Profit	10,897	10,897
(Less) Depreciation	<u>0</u>	
Additional Income (Loss) before Taxes	10,897	
(Less) Additional Income Taxes (30%)	<u>3,269</u>	<u>3,269</u>
Additional Income after Taxes	\$7,628	Additional Net Cash Flow \$7,628

This illustrates the "tax shelter" effect of depreciation. Sometimes depreciation is known as a "tax shield." If you contrast the first three years with the final two years, you can see why. The cash flows *before* depreciation and taxes are the same all five years. However, for each of the first three years during which depreciation is paid, additional income tax liability is reduced to \$869 per year due to the deduction taken for depreciation. But during the final two years, Roho will have no depreciation with which to reduce his tax liability and will thus incur a tax bill of \$3,269 each year.

Roho has to decide what the required rate of return would be for the delivery service. Roho is one of The Bank's best and oldest customers. Roho has a great relationship with the loan officers and is widely respected in the community. Roho can get loans with a minimum size of \$20,000 for 0 percent. That is great, but Roho's business is small and a \$20,000 investment represents a large gamble relative to what he is currently making on his operations. Roho decides that to compensate himself for the large risk involved in undertaking this venture, he will require a 20 percent return.

Now that Roho has calculated the net cash flows, and determined a 20 percent required return, the net cash flows can be adjusted and summed.

	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash Flows	\$10,028	10,028	10,028	7,628	7,628
Adjustment (at 20%)	0.8333	0.6944	0.5787	0.4823	0.4019
Adjusted Net Cash Flows (at 20%)	\$ 8,356	6,963	5,803	3,679	3,066
Total Adjusted Net Cash Flows (at 20%)	\$8,356 + 6,963 + 5,803 + 3,679 + 3,066 = \$27,867				

Initial Costs. Initial costs would be significant even though the coolers and kitchen could handle a higher volume of business, and the restaurant already has a rotary phone system. Two new delivery trucks would represent most of the initial costs for the new service, \$24,000. The catering part of the business has five trucks that it has used primarily on weekends and at night. Roho intends to keep all those older, low-use trucks. All the catering trucks are old and wouldn't hold up to the hard running conditions and frequent stops that would be necessary for a lunch delivery service. Realistically, the catering trucks can be relied on only for the equivalent of one delivery per day. Other than the two new trucks, introductory advertising and charges for extra telephone lines would be the only initial costs. Total initial costs would probably look like this:

Phone Service/Installation Charges	\$ 200
Advertising	200
Two Delivery Trucks	<u>24,000</u>
Total Initial Costs	\$24,400

Net Present Value. When the initial costs are subtracted from the adjusted net cash flows, Roho's new delivery service has a positive net present value, \$3,467. That means that new service will meet Roho's requirements with an additional return.

Adjusted Net Cash Flow - Initial Cost = NPV

$$\$27,867 - 24,400 + \$3,467$$

Based on these calculations, Roho intends to go ahead with the project. But there are some important points to keep in mind.

Estimates of costs and sales projections should be double-checked. Those cost estimates include the required rate of return. If the assumptions used to estimate sales and expenses are based upon potentially inaccurate evidence, then the discount rate used would have to be increased, and, therefore, the net present value of the delivery service would be lower, possibly even negative.

Neeley, Lynn. "Three questions that net present value analysis can help you answer." *Small Business Forum*, Winter 1992/1993. © *Small Business Forum*. Translated and used with permission.