The Business Library® — Resource Report #1

50 Strategies to Increase and Manage Your Cash Flow

- Start with the Basics
- Increase Cash Inflow, Decrease Outflow
- Sell More to Current Customers
- Add New Customers with New Approaches
- Streamline Ordering Process
- Target and Expand Products and Services
- Collect the Money Due You
- Tighten Internal Controls

Part Two — Six Ways to Price Products to Increase Sales and Profits

Part Three — How to Analyze and Value a Company's Income and Cash Flow

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Build on what you already have. Stay in the areas you know best. Sell more to existing customers. Monitor carefully all cash outflow.

The Road to More Customer Sales

Here are some fundamental, but very important ideas, to increase sales and improve relationships.

- Focus on identifying what your customers want and need and then meet those needs.
- Be consistent in your dealings.
- Expose them to other products and services.
- Make it easy for them to order.
- Deliver on time.
- Keep communicating with them and make it easy for them to communicate with you.
- Promptly answer their complaints and warn them of problems.
- Extend reasonable, consistent credit.
- Treat small orders with respect. They could be your biggest customers a few years from today.

A qualified lead from a current customer is much more valuable than a telemarketing call or a cold-call visit on a new prospect.

You have plenty of company if you're struggling to manage your cash flow. The fact is any slow down in sales or an economic recession can throw off any company's business plan and undermine its projections. Long-time customers can sell out or even go bankrupt, inventories cut back, orders cancelled, expansions postponed, and everyone takes longer to pay their bills.

Many business owners and executives, even those who have managed to increase sales and profits, can have cash flow problems. *Our advice:* Pay close attention to your cash flow and, when problems arise, be prepared to act quickly and decisively. You know your company best. Only you can determine which expenses and disbursements can be eliminated or reduced immediately. Only you can pinpoint which resources can be tapped easily and quickly.

In *Part One* of this **Resource Report**, you will find a vast range of ideas, suggestions, and actions that have been used by other businesses to manage and improve their cash flow. Most are simple to implement but collectively, they can have a significant dollar impact on your cash flow and bottom line. Use them to develop an overall cash flow strategy that's right for you and your business. In *Part Two,* we discuss product pricing and present six ways to increase company sales and profits. In *Part Three,* we analyze and value a company's income and cash flow.

Start with the Basics

#1. Build on what you already have. Hold back on spending money to develop high-risk new ideas or products. Focus on your *existing* products and services. Explore new sales approaches and new markets to your current product lines. Instead of launching expensive campaigns to attract new customers, *multiply* business to current customers by staying in close contact with them and adapting your products or services to better meet their needs.

#2. Stay on top of accounts receivable — *your cash inflow.* Remember, the longer you wait on past-due accounts receivable, the less likely you are to get paid. Statistics show that for receivables overdue by 120 days, you will never collect 20%. When more than 180 days overdue, the loss increases to 33%. The chances of never collecting on a bill continue to increase to 55% if one year past-due and 77% if two years past-due.

Insist on specifics! If a delinquent customer hasn't yet mailed payment, pin

him or her down on the exact date the payment will be mailed. If he or she says it's ready now, arrange to pick up the check or pay for overnight delivery.

Remember also, your collection efforts are most effective when you establish firm policies, put them in writing, and apply them consistently.

#3. Keep an eye on inventory — *a big cash outflow factor.* Review your needs monthly. For frequently-used inventory, negotiate a price discount for volume purchases and look into longer-term contracts to fix future prices. Smart purchasing can substantially increase your pretax profit margin. For example, if your pretax margin is 10% and your gross profit margin is 40%, a 3% savings on inventory purchases can represent up to a 12% increase on your pretax profit margin (40% gross profit times 3%).

#4. *Reduce labor costs*: (a) lower the number of employees by attrition, (b) reduce fringe benefit programs, (c) defer salary increases and bonuses, and (d) if permitted, hold back on making retirement contributions, particularly optional matching contributions.

More drastic action: Consider effecting across-the-board salary reductions of, say 10%, until cash flow improves. Your employees won't like it, but the burden is shared by all and it is more palatable than layoffs. Stress that it's only an *interim* measure and explain why it's necessary, e.g., the loss of a major customer. Don't forget to include yourself in the 10% salary reduction and be sure employee salary reductions are not in violation of any labor or employment contracts or state and federal laws.

#5. *Reduce cash outflow:* (a) go hand-to-mouth on inventory that is not frequently used or that is changeable — buy only what you need for a month or two, (b) identify and eliminate all unnecessary overhead, (c) increase deductibles on select insurance policies to lower the premiums, (d) lease equipment rather than purchase, (e) talk to your suppliers about extended credit, e.g., payment in 45 to 60 days rather than 10 or 30 days, (f) reduce recurring expenses, e.g., use three phone lines rather than five, and (g) eliminate or downgrade non-critical service contracts.

#6. *Increase cash inflow:* (a) borrow on select company assets, e.g., the cash value in life insurance policies, (b) eliminate slow-moving and low-profit-margin products, (c) establish or increase the discount your company offers for

payment of accounts receivable within 10 to 20 days, (d) in contrast, charge interest on delinquent accounts receivable, say, 1% to 1½% per month on the outstanding balance, (e) offer to settle (e.g., 80 cents on the dollar) past-due accounts and other monies owed to you, and (f) get an advance payment upfront on large orders or increase the required deposit.

#7. *Postpone new product development:* It's costly and time consuming and the potential payoff is far in the future. Instead, investigate the reasons for past product failures. Historically, the two main reasons new products fail are: (a) inadequate marketing analysis, and (b) expanding for the sake of growth without regard to the expansion's contribution to profits. More on this subject later.

Cultivate Current Customers

Reasons: They know your company; you know them; and it costs much less to close a deal with a current customer than to identify, contact, negotiate, and close a deal with a new customer.

#8. *Learn more about your customers:* Visit their websites. What products and services do they offer? Are there any other products you can sell to them? If new purchase orders are declining, find out why.

#9. Concentrate on them. It's an established fact that many businesses neglect promoting new, redesigned, or related products to their existing customer base. But don't push customers too aggressively for more business. A friendly, how-can-we-help approach builds relationships and sets your company apart from competitors.

#10. Communicate more frequently with customers and be especially attentive to customers who represent 5% or more of company sales. Call them every month or two. Can we help in any way? Are our products meeting your specifications and quality standards? *Remember:* Qualifying a new sales lead takes a lot more time and energy than cultivating a current customer. Lose a large-volume, long-time customer and you usually need five to 10 new customers to replace that lost business.

#11. Ask customers for referrals to other companies and individuals who

might be interested in your products. A qualified lead from a current customer is many times more valuable than a telemarketing call or a cold-call visit on a new prospect.

#12. Invest in training for customer service employees. Disappointed customers do not want to be contacted by a computer or a form letter. They want a real person to talk to, one who is qualified and empowered to help them.

#13. Be consistent in your dealings with customers, product deliveries, and service standards. Radical changes in the way you do business could alienate customers and reduce new orders.

Increase Cash Inflow

#14. Establish systems that track individual salespeople's performances with both customers and prospects. For a three-month period, provide a *special bonus* to salespeople for new business.

#15. Make it *very* easy for your customers and prospects to order. Simplify your order form and invest in a special telephone line, preferably a toll-free 800 number. Have individual customer profile information computerized and instantly available to your order department. Train sales staff to suggest *related* products to customers who place an order.

#16. To generate more cash and lower inventory levels, prepare a special product bulletin offering your customers and prospects a one-time discount on in-stock or surplus products.

#17. Treat small orders with respect. Many times your profit margin is higher on smaller orders and you're usually not asked to make concessions on price. Furthermore, these large orders could grow into much larger orders.

#18. Don't look at new customer orders as a one-time sale. Consider the value of those new customers' *repeat* business over a period of years. That attitude will reinforce *their* importance to your company and with your employees who service the accounts.

#19. Contact customers who no longer buy from you or buy in reduced

quantities. Even if you don't win them back, you might learn about service or product problems that could prevent you from losing other customers.

#20. Explore new methods to sell products to existing customers and prospects. Don't overlook your company's website and selling on the Internet.

#21. Don't divert cash to high-risk new ideas and products without first exploring new customers and new markets to sell *existing* products and services.

#22. Know your profit margin on each product and consider offering your salespeople a higher commission for sale of the company's most profitable products.

#23. Know your customer — your cash inflow. Does he or she order every month? How much is purchased annually? Who else do they buy from? What would it take to increase business with them?

Collect the Money Due You

#24. Write down your company's policies and guidelines for extending credit. Investigate the credit of each potential customer and establish a credit line which cannot be exceeded without special approval.

#25. Continually check out the creditworthiness of new and existing customers.

#26. Settle disputes with customers immediately. Find out the exact nature of the problem and then take steps to remedy it. Keep a record of all complaints; a pattern may be developing on a specific product or individual in your company.

#27. If a customer is in financial difficulty and the amount due is sizable, try to get a formal promissory note for the full amount due with a specific repayment schedule and interest rate.

#28. For new customers whose credit is questionable, consider requesting a down payment on the order, say, 10% to 25%, or specify that payment is due on delivery.

#29. In your efforts to increase sales with current customers and add new customers, never make exceptions to your credit policies. Consider price or discount concessions instead. *Remember*: If your company's profit margin is 10%, a bad receivable of $10,000 represents $100,000 in lost sales revenue.

#30. Be alert to customers' cash flow problems. Structure your bookkeeping department to prepare weekly reports on overdue payments. For a listing of the trouble signs, see *Your Customers' Problems Are Your Problems,* page 13.

Manage Cash Outflow

#31. Check all invoices from suppliers before making payments to be sure that: (a) the product was received in its entirety and in good condition or the services were performed, (b) the math on the invoice is correct, (c) any special charges are appropriate, (d) any available discount is taken, and (e) any sales tax is applicable and correct.

#**32.** Refinance existing loans and extend the repayment period over a longer time frame. This will lower your fixed monthly payment and increase cash available for other purposes. You also might want to talk to your lender about increasing the loan amount (e.g., back to the original loan amount) to generate more cash.

#33. Have someone periodically verify payments to vendors. *How:* Do as your auditors do. Send a written request to vendors for confirmation of the balance shown on your books. You can conduct a quicker check by simply telephoning select vendors to verify the balance in your accounts.

#34. Do not reimburse employee expenses without proper documentation; furthermore, obtain the original receipt, not a copy. Make all employees account for advances promptly, preferably before paying them.

#35. Petty cash should be under the control of only one person and that person should be responsible for the amount in the fund and its proper recordkeeping. In addition, periodic checks and reconciliation of the petty cash account should be made by a second person, who also should check the records of transactions and the stated reasons for the withdrawals.

#36. The person signing checks should have the authority, opportunity, and responsibility for reviewing all supporting documents (e.g., purchase orders, receiving reports, etc.).

#37. Require written authorization on the sale or purchase of any fixed assets, such as cars, office furniture, and equipment. Substantial sales or purchases should require approval by an officer.

#38. If you're keeping the balance in your checking account low and you don't have overdraft privileges, be sure you know the balance at all times. If your bank has an on-line service by which you can check your balances whenever and as frequently as you choose, consider using that service. In addition, talk to your banker about automatically investing, even overnight, any excess cash in a money-market account. The accumulated interest over the year can be substantial.

#39. Payments can be turned into usable capital sooner by photocopying and depositing checks on the day of receipt. Necessary bookkeeping work can be done later. In addition, for business conducted in a remote part of the country, a "lock box" may quickly turn collections into cash.

#40. Prepare conservative monthly cash flow projections (both minimum and probable) for one year, so you know *exactly* where you stand on cash. Show projected beginning and ending cash balances for each month and identify any monthly deficits immediately. Then get to work on solving that deficit. You also want to analyze monthly deviations in your budget forecasts versus actual results. This will help you adjust your monthly cash flow budget going forward and solve any liquidity problems before they become serious.

#41. Plan ahead to meet and finance any potential or expected cash flow deficits. If you wait until the deficit is reality, you could be risking the viability of your business and jeopardizing your ability to raise capital.

Target and Expand Products and Services

#42. Start by expanding on already-successful products and services and concentrate marketing efforts on higher-profit-margin products.

#43. Consult with important customers *before* introducing a new or revised product. *First,* their input is invaluable in refining the product and its marketing campaign; *second,* you have a potential buyer already lined up; and *third,* you let them know you respect their opinion and they are an important part of your business.

#44. Stay in the product area and industry you know best. Know your start-up costs and try to minimize the development time of new products and services.

#45. Don't shortchange the research stage on new products and new markets. Talk to potential customers about their needs, find out what your competitors are doing; then determine the niche that is best for you and move quickly to fill it.

#46. When introducing *new* products, target initial sales to high-volume customers.

#47. Package your products and services with material to answer customer questions and show its many applications and benefits.

#48. Don't compromise product quality for the sake of lower costs in production, service, or delivery.

#49. Target a smaller industry; large companies generally don't concentrate on smaller industries. To further lessen risks, sell into a stable market.

#50. Don't fall in love with any product; assess each product objectively for its contribution to the company's sales and profits.

* * *

Prudent cash flow management is good business practice in any economic climate. But it is often overlooked when cash is flowing freely and growth is easy to come by. Use this **Resource Report** to get on top of your cash flow and refer to it regularly to keep your company lean on the expense side and healthy on the cash side. □

References:

Lose a large-volume, long-time customer and you usually need five to 10 new customers to replace that business.

Exhibit 1

Your Customers' Problems Are *Your* Problems

Your customers affect your sales, accounts receivable, cash, inventory purchases, allocation of overhead, and eventually the company's profits. They also are the basis of the company's projections of cash inflow and outflow, projections you rely on to make important operating and financial decisions. It pays to know your customers and keep informed of their purchasing activity and bill-paying status.

> *Remember:* With a 10% operating margin, a $10,000 receivable writeoff is equivalent to $100,000 in lost sales ($10,000 writeoff divided by 10%). If your profit margin is 5%, it's worse. You will need $200,000 additional sales to replace $10,000 of bad receivables.
>
> *The Lesson:* Look at receivable losses in terms of the additional sales revenue you will need to make up for the loss.

Yes, monitor your accounts receivable, but do much more than that. Be able to project the impact on your business if the customer behind each overdue receivable is no longer part of your business. Better yet, try to identify customers with problems *before* their accounts become overdue and their orders decline or cease entirely.

Here are some common signs of problems that other businesses have used in setting up an early-warning system on customers. *The trouble signs:*

- When contacted regarding payment, the customer complains that the product or service which was delivered weeks earlier doesn't meet specifications.
- You get inquiries from other suppliers and lenders about this customer and questions on his or her credit history.
- The average order size placed with you by this customer declines sharply.
- Your salespeople report that the customer has fewer employees, a key executive has left, the facilities need repair work, and/or phone calls are not being returned.

- Customer has switched banks.

- You get post-dated checks or checks missing a signature.

- The invoice is said to be lost or in error. ("Please send another one."). Or, you are told that payment was mailed. ("Let's wait a week to see if the check clears and then I'll issue another one.")

- The customer's bookkeeper doesn't return your calls. Worse, he or she is no longer employed by your customer.

- You get a partial payment on due-in-full invoices.

- The customer formerly took discounts for payment within 10 days, but doesn't anymore.

- The customer's major customer is in financial trouble.

A bad receivable means more than lost cash. It also means one less customer and lower sales and profits for your company. □

Part Two — Six Pricing Examples

Pricing Your Products To Increase Sales and Profits

- Steps in Pricing an Order
- Contribution Profit Analysis
- Basics of Breakeven Analysis
- Adjusting Fixed and Variable Costs
- Pricing Volume Orders
- The Make-or-Buy Decision

Cost/Pricing Tools to Maximize Sales and Profits

Six Cost/Pricing Decisions

1. Basic new product analysis.
2. Introducing a new product.
3. Adjusting fixed and variable costs.
4. Expanding your marketing.
5. Pricing volume orders.
6. The make-or-buy decision.

Using the calculations in this Part Two will help you make better pricing and expansion decisions.

Back to the fundamentals and using those fundamentals to increase your company's sales and profits. Computers have their place, but many times you can't beat hand-written cost and pricing analysis to identify key cost components in a new or existing product and to use that cost information to project sales and profitability.

Here are six examples to help you do just that. *The applications of such an analysis are many* — use it in pricing a new product or volume orders, increasing advertising expenditures, adding salespeople, expanding the company's facilities, or making the purchase-or-make decision.

Work through the questions and mathematics; instinctively, you may already be using such an approach, but this will be a good exercise to make sure you're not overlooking any cost components or pricing opportunities.

Steps in Pricing an Order

- **Step #1.** Obtain all relevant cost and pricing data, including the company's current fixed and variable costs.

- **Step #2.** Analyze your pricing and orders (both small and large orders). Include incremental (additional) costs associated with each order. Be sure to adjust for any additional fixed costs.

- **Step #3.** Determine the minimum selling price and potential profit by preparing a condensed profit and loss statement *only* on the new order(s).

There are critical pricing and expansion decisions faced at one time or another by every business executive. As a start, we will review two simple tools that can make these decisions much easier — and a successful outcome a lot more probable. The tools are *breakeven analysis* and *contribution profit analysis.* The combination of both pricing tools can be used to maximize sales and assure profits in all types of businesses, including service businesses.

Breakeven analysis will help you decide what sales and expense balance is needed to show a zero profit and loss. Obviously, that breakeven point is a starting point in any analysis of the affordability and potential profitability of any business venture. *Contribution profit analysis* shows you how to analyze sales and costs to make more money.

Some Basic Terms to Know

Breakeven in sales is determined by this formula:

$$\text{Breakeven} = \frac{\text{Fixed Costs + Zero Profit}}{\text{Contribution Margin}}$$

Fixed Costs: Production and operational costs that remain the same in dollar amount even when the number of units produced varies. *Example:* Rent.

Variable Costs: Costs that change in dollar amount as quantities (units) increase or decrease. *Example:* Materials used and sales commissions.

Contribution Profit Margin: Percentage of sales dollar that is needed to cover fixed costs. The formula is sales less variable costs divided by sales. *Example:* $18 selling price less $10 variable cost equals $8 contribution profit; $8 divided by $18 equals 44% contribution profit margin.

With breakeven and contribution profit analysis, you can compute how much *incremental* sales are needed to cover *incremental* costs. Then, you can determine what you can expect as a profit if you increase sales or the number of units by a given volume or quantity.

Problem #1: New Product Analysis

You have a good idea for a new product. *The main question:* Based on the projected costs, can you make a profit? Let's assume the following data:

- Fixed costs are $100,000.
- The product has a 40% contribution profit margin (or conversely, a 60% variable cost).

Based on that data, what volume of sales is needed to break even? Using the breakeven formula on the top of this page:

$$\text{Breakeven} = \frac{\$100{,}000 + \text{Zero Profit}}{40\%}$$

Breakeven = $250,000 Sales

A further increase in sales by $300,000 would increase profits by $120,000 ($300,000 sales times 40% contribution margin). It's that simple; the profit is $120,000 since all the fixed costs were covered by the first $250,000 in sales. Below is an illustration of what happens when sales increase above the breakeven point of $250,000:

	$250,000 in Sales	$550,000 in Sales
Sales	$250,000	$550,000
Less: Variable Costs (60%)	150,000	330,000
Contribution Profit (40%)	$100,000	$220,000
Less: Fixed Costs	100,000	100,000
Profit	$ 0	$120,000

This basic cost-volume-profit analysis can be used to determine whether or not a company should: (a) eliminate variable costs in favor of fixed costs, (b) increase certain fixed costs, or (c) increase variable costs. This will be discussed later in Problem #3.

Problem #2: Introducing a New Product

Let's review an already-established business that wants to introduce a new product (Q). Each unit of Q will sell for $6 with a variable cost of $4.20. In addition, your salespeople will receive a 10% commission on each unit sold and fixed costs on the new product will be $36,000.

Question. What is the breakeven point in sales dollars and units? Using the breakeven formula presented earlier, you can calculate the following:

Sales	$6.00
Variable Costs:	
Production ($4.20)	
10% Commission ($0.60)	-4.80
Contribution Profit	$1.20
Contribution Profit Margin	20%

Thus, your breakeven in sales and units is:

$$BE = \frac{\$36{,}000 + \text{Zero Profit}}{.20}$$

BE = $180,000 in Sales

BE = $180,000 divided by $6 per Unit

BE = 30,000 in Units

Problem #3: Adjusting Fixed and Variable Costs

Questions. What would happen if you eliminated the 10% sales commission in the example above and replaced it with a fixed salary of $30,000 for a new salesperson? Would this be a desirable change and what would be the impact on your breakeven? What you are doing here is determining the bottom-line impact on profits of adjusting your various cost components.

In this Problem #3, fixed expenses would increase to $66,000 ($36,000 plus $30,000 for the new salesperson) and the contribution margin would now be 30% ($6.00 selling price less $4.20 variable production costs equals $1.80; $1.80 divided by $6.00 equals 30%). Based on this input, the breakeven is now:

$$BE = \frac{\$66{,}000 + \text{Zero Profit}}{.30}$$

BE = $220,000 in Sales

BE = $220,000 divided by $6 Selling Price

BE = 36,667 in Units

Because of the increase in the fixed expenses to $66,000, the number of units sold to reach breakeven has to increase by 6,667 (36,667 *less* the breakeven of 30,000 units on the prior page). Although the contribution margin increased 10 percentage points (from 20% to 30%), this increase was not enough to cover the $30,000 increase in fixed expenses.

Bottom line: Additional units of 6,667 need to be sold to justify hiring the new salesperson.

Problem #4: Expanding Your Marketing

Question. Again, you're deciding if an additional investment in a product or activity is justified by its profit potential. You think sales of Product Q would increase to $600,000 if you started advertising it more heavily. Again, using the same cost data presented in Problem #2 (i.e., profit contribution of 20% and fixed costs of $36,000), by what amount can advertising costs (noted as Y) be increased while still earning a desired profit of 10% on sales? *Note:* The total sales desired is $600,000, which is 100,000 units times $6.

Your Desired Sales with a 10% Profit Margin =

(1) $$\frac{\text{Fixed Costs + Y + Desired Profit}}{\text{Contribution Profit Margin}}$$

(2) $$\$600{,}000 = \frac{\$36{,}000 + Y + 10\%}{.20}$$

(3) $$\$600{,}000 = \frac{\$36{,}000 + Y + \$60{,}000}{.20}$$

(4) $120,000 ($600,000 ÷ .20) = $96,000 + Y

(5) Y = $24,000

Advertising expenditures could be increased by $24,000 to reach your desired sales of $600,000 and still maintain your profit margin of 10%. If the sales are attained, here is your income statement.

Product Q
Income Statement

Sales (100,000 Units x $6)		$600,000
Less: Variable Expenses		
Production ($4.20 per Unit)	$420,000	
10% Commission ($0.60 per Unit)	60,000	-480,000
Contribution Profit (20%)		$120,000
Less: Fixed Expenses		-36,000
Less: Increase in Advertising Costs		-24,000
Profits (10%)		$ 60,000

Problem #5: Pricing Volume Orders

Now, what if you'd like to manufacture your basic product (Q) with a special attachment for a new customer? The new customer will purchase 30,000 units if the price is right.

Question. What is the lowest price that can be charged to the new customer for this product using the $4.80 variable costs (page 20) presented in Problem #2, and what is the additional cost related to the new product?

Answer. To manufacture the same product with the special attachment will cost $18,000 in additional fixed administrative/production costs, and 20 cents per unit for the attachment. Your factory has a capacity of 400,000 units per year. In addition, you will not have to pay the usual 10% sales commission since this customer approached the company directly. Based on this new cost data, the following can be computed:

Basic Cost Data

Selling Price per Unit (100%)	$6.00
Variable Costs per Unit (70%)	-4.20
Contribution Profit (30%)	$1.80

Analysis of New Order

Incremental Costs:	
30,000 Units x ($4.20 + $0.20)*	$132,000
Increased Fixed Expenses	18,000
Total Incremental Costs	$150,000
Incremental Costs per Unit	$5.00

* Variable costs of $4.20 plus additional costs of $0.20 for attachment.

Thus, the *minimum* selling price you need to charge to cover your costs is $5 per unit, which is 16 2/3% below your current selling price of $6 for the product *without* the attachment. *Note:* If you want your usual 10% profit margin, the minimum selling price would be $5.55 ($5.00 divided by 90%, which would give you a profit of $0.55 per unit).

An easier way to compute. *Analyze "differences."* The new order will cost you $6,000 additional variable costs (30,000 times $0.20) plus $18,000 additional fixed costs. The total of $24,000 divided by 30,000 units equals $0.80 per unit. This $0.80 per unit cost, when added to your base variable cost of $4.20, equals $5.00 total added costs per unit, which is your breakeven or minimum selling price.

Problem #6: The Make-or-Buy Decision

Your company is now selling 200,000 units of Product Q.

A special component for each unit is being purchased from an outside supplier, which currently costs you $0.30 per unit ($60,000 annually). If you manufacture the part yourself, your fixed costs will increase by $27,000 ($15,000 is for new equipment) and your variable costs per unit to manufacture the product will be $0.15.

Question #1. How many units must you sell to break even?

Answer. Since the supplier is now charging you $0.30 per unit and your variable cost per unit will be $0.15, the contribution margin is 50% and the contribution profit is $0.15 (current cost of $0.30 less $0.15 variable cost). Thus, your breakeven to manufacture the part yourself is:

$$\text{Breakeven} = \frac{\text{Incremental Fixed Costs}}{\text{Incremental Profit Contribution}}$$

$$= \$27{,}000 \text{ divided by } \$0.15 \ (\$0.30 - \$0.15)$$

$$= 180{,}000 \text{ Units}$$

Question #2. What is your profit at the 250,000-unit level, which is 70,000 units above your breakeven level of 180,000 units?

Answer. The profit is computed as follows: (units needed less breakeven unit figure) times your incremental profit contribution of $0.15 per unit.

$$\begin{aligned} \text{Profit} &= (250{,}000 - 180{,}000) \times \$0.15 \\ &= 70{,}000 \times \$0.15 \\ &= \$10{,}500 \end{aligned}$$

The additional profit of $10,500 you would make at the 250,000-level does not necessarily mean you should make the component yourself. There are other considerations, including the fact that:

- you may now have a good source of supply who is responsible for on-time delivery and quality work, and

- the increase in fixed expenses of $27,000 associated with making the product in-house can be used in other ways to increase sales and profits, e.g., the increased advertising expenditures in Problem #4 on page 21.

Other considerations: Production in other areas of the company may be slow and you're looking for work to keep employees busy and avoid lay-offs. Also, your current supplier's quality standards may have slipped recently or late deliveries have upset your production schedules.

Observation: As your use of the components increases above the breakeven point, of course, your "profit" from bringing their production in-house does also. Let's see what happens when you use (manufacture and sell) 400,000 components a year (rather than 200,000).

Profit = (400,000 - 180,000 Breakeven) x $0.15
= 220,000 x $0.15
= $33,000 in Additional Profit

Summary: Get used to using pricing and contribution margin analysis routinely. It has many other applications. It will provide valuable information when: (a) deciding on the pricing of existing and new products, (b) changing your company's cost structure, (c) expanding your market by acquisition, (d) quoting a price for large-volume orders, (e) making the produce-or-buy decision, and (f) justifying the hiring of additional salespeople or use of manufacturers' reps to increase sales.

The calculations will help you to see quickly which expansions and pricing decisions are completely impractical; that way, you can spend more time devising strategies that are more certain to increase your sales and profits. □

Part Three — Cash Flow Analysis

Case Study:
How to Analyze and Value a Company's Projected Income and Cash Flow

- *When* to Use the Cash Flow Method
- *How* to Use the Cash Flow Method
- Present Value Analysis and Factors
- Projecting Income and Net Cash Flow
- *Case Study:* Johnson Tool Corp.
- Rate of Return Components

Cash Flow Analysis Helps Determine Correct Value

How to Analyze and Value a Company's Projected Income and Cash Flow

There are many business decisions made *today* which involve receiving or outlaying cash in the future.

- You want to open a new sales territory. Your treasurer estimates $80,000 will be spent to break even in year one. Profits will be $30,000 in year two, and will grow at 15% a year through year five. Is the investment worth it, i.e., what is the annual return on that $80,000 investment?

- You are selling your business for $600,000 cash today and $400,000 via an installment where cash inflow to you (plus interest income) can be projected. What is *today's* value of the future payments to you?

- You are on the buy side; a small company is up for sale. You want to structure the purchase price on an installment-sale basis. What is the value today of the future cash inflow from that business?

- New equipment is being purchased for $60,000, which will save $20,000 a year for the next five years. What is *today's* value of the potential savings?

The answers to these questions lie in projecting cash flow and in present value analysis, a method of calculating the real value *(in today's dollars)* of money paid out or received in the future. This Case Study illustrates the *Cash Flow Method* of valuing a projected income stream. If you aren't in a position to apply the concepts now, work through the numbers anyway. You will be able to apply the case study the next time you are considering any investment made *today* that will bring in cash tomorrow.

Definitions: Typically, a company's cash flow is defined as its net income *plus* depreciation and amortization expenses. Depreciation is the future writeoff of previously spent cash, e.g., prior equipment purchases. Amortization expense applies to the writeoff of non-fixed asset expenditures, such as start-up and product development costs, which also are capitalized on the balance sheet and written off over future years.

The *net cash flow* from any project or investment is simply a company's total projected cash inflow less all cash outflow; and it is usually determined on an annual basis.

When to Use the Cash Flow Method

In addition to the many applications on the prior page, the cash flow method of analyzing cash inflow and outflow is used in these special situations:

- When money is expended *today* in exchange for a future stream of *cash inflow.*

- In certain start-up and existing businesses where cash flow is more important than net income.

- When an activity is undertaken *solely* to fulfill a specific project or contract, e.g., the construction of a new plant which will save a company money in the long term.

In valuing a business, projecting and discounting a company's future cash flow and income is crucial. Also necessary is an analysis of the company's net book value at the end of the period being analyzed. *Net book value* is defined as a company's total assets *less* all liabilities, and it is also referred to as net worth or stockholders' equity account.

How to Use the Cash Flow Method

To use the cash flow method, the following information must be obtained. We'll assume the valuation period is for five years. Here are the steps:

1. Project the cash inflow and outflow (the net cash flow) over the five years being valued.

2. Estimate the value of the company's assets and liabilities at the end of the fifth year. Then compute the company's projected net book value (assets *less* liabilities).

3. Decide on the present value (or discount) rate that is to be applied to the cash flows over the five-year period.

Present Value Analysis

The present value rate specifies the annual return an investment must earn each year, taking into consideration other investment *alternatives* and the *risks* associated with the investment. It is expressed in factors and specifies the *present value* (the value today) of a future stream of income or cash flow. For Present Value Rates and Rate of Return Components, please see page 33.

Example: If you want a 15% annual return on your investment in a business you

want to acquire, the value today (i.e., your purchase price) must reflect a 15% annual return from that company's net cash flow stream for the full five-year period being analyzed. In other words, if you invest $1,000 *today,* at the end of five years you want the investment to be worth $2,011. *Editor's note:* The formula is $1,000 times $(1 + 0.15)^5$. The exponent of *5* is simply the number of years you are compounding the annual return of 15%.

Another way to look at this 15% annual return is to determine how much must be invested *today* so that it will grow to a certain amount by the end of five years. The amount to be invested *today* (for that 15% return) is called the discounted or present value amount. For example, using a 15% present value rate, let's look at the value of $1,000 today over each of the next five years.

Year	Present Value Factor for 15% Rate of Return	Value of $1,000 Today
Today	1.000	$1,000
1	0.870	$ 870
2	0.756	$ 756
3	0.658	$ 658
4	0.572	$ 572
5	0.497	$ 497

As this table illustrates, if you invest $870 for one year at 15%, you will have $1,000 at the end of that year ($870 x 0.15 = $130; $870 + $130 = $1,000). Similarly, if you invest $497 *today* and earn 15% annually for five years, you will have $1,000 at the end of the fifth year.

In the cash flow method of valuing a business, present value factors are used since you want to determine today's value of a company's future cash flow stream over the five years being analyzed. Now to our Case Study.

Case Study: Johnson Tool Corp.
What Is This Business Worth?

Let's look at *Johnson Tool Corp.,* a supplier of customized tools and dies, and a company you wish to acquire. We will do the following to estimate the Cash Flow Value of this business.

1. Present *Johnson Tool* and its *net* cash flow projections for five years.
2. Use a present value rate of 24% on the projected *net* cash flow and value of this business.
3. Determine the **price** to pay for this business.

You have an opportunity to buy *Johnson Tool,* a small division of a large company. Since you are already in this line of business, you can accurately forecast the company's growth. Right now it's not profitable, but with your expertise, you expect the business can generate $380,000 net cash flow over five years *and* have a net book value (net worth) of $400,000 at the end of those five years. The $380,000 net cash flow is *after* all cash outlays.

Question. Based on your analysis of the risks, you want to earn a minimum annual return of 24% on your investment (purchase price). How much should you pay for the division to yield that 24% annual return?

Here are the facts: Your projected annual net cash flow of $380,000 (the excess of all cash inflow over all cash outflow) looks like this:

(In Thousands)

	Projections				
	2017	2018	2019	2020	2021
Net Cash Flow	$ 0	$40	$80	$110	$150

Answer. Since you want an annual return of 24% on your money, simply compute *today's* value of the projected net cash flow stream and the projected $400,000 net book value of *Johnson Tool* at the end of year five. Referring to the Present Value Rates on page 33, you can obtain the following present value factors based on your required minimum annual return of 24%.

Year	Present Value Factor for 24% Rate of Return
1	0.806
2	0.650
3	0.524
4	0.423
5	0.341

All that is needed now is to prepare a table showing the net cash flows for the five-year period. You then multiply the present value factors above (for a 24% annual return) by the net cash flow for each year.

Year	Net Cash Flow		Present Value Factor — 24%	Today's Value
2017	$ 0		0.806	$ 0
2018	40,000		0.650	26,000
2019	80,000		0.524	41,920
2020	110,000		0.423	46,530
2021	550,000	*	0.341	187,550
Totals	$780,000		**Value**	**$302,000**
			Difference	**$478,000**

* Includes $150,000 net cash flow in year five *and* $400,000 projected net book value at the end of year five.

Today's Value Is $302,000, Not $780,000

As computed, *today's* value of the projected net cash flow of $780,000 (including the projected $400,000 net book value) is *only* $302,000 in today's dollars. In other words, if *Johnson Tool* were purchased *today* for its net cash flow value of $302,000 and if the projected cash flows for the five years were generated (including the projected net book value of $400,000), you would realize a 24% annual rate of return on your $302,000 purchase price over the five-year period.

Another observation: Note the $478,000 difference between the total projected net cash flow of $780,000 and its value *today* (only $302,000). *That represents*

61% less value when expressed in today's dollars. This is the real justification for cash flow and present value analysis! It *must* be used for a proper *comparison* of dollars paid out *today* for dollars received in *future* years.

Preparing data for applying cash flow analysis may be time-consuming and involve some uncertainties. But at the least, you will have the numbers and the value *today* to make more informed investment and acquisition decisions.

Exhibit: Present Value Rates and Factors for $1, see next page. □

Exhibit 2

Present Value Rates and Factors for $1

Year	8%	10%	12%	14%	15%	16%	18%	20%	22%	24%	26%	28%	30%
1	0.926	0.909	0.893	0.877	0.870	0.862	0.847	0.833	0.820	0.806	0.794	0.781	0.769
2	0.857	0.826	0.797	0.769	0.756	0.743	0.718	0.694	0.672	0.650	0.630	0.610	0.592
3	0.794	0.751	0.712	0.675	0.658	0.641	0.609	0.579	0.551	0.524	0.500	0.477	0.455
4	0.735	0.683	0.636	0.592	0.572	0.552	0.516	0.482	0.451	0.423	0.397	0.373	0.350
5	0.681	0.621	0.567	0.519	0.497	0.476	0.437	0.402	0.370	0.341	0.315	0.291	0.269
6	0.630	0.564	0.507	0.456	0.432	0.410	0.370	0.335	0.303	0.275	0.250	0.227	0.207
7	0.583	0.513	0.452	0.400	0.376	0.354	0.314	0.279	0.249	0.222	0.198	0.178	0.159
8	0.540	0.467	0.404	0.351	0.327	0.305	0.266	0.233	0.204	0.179	0.157	0.139	0.123
9	0.500	0.424	0.361	0.308	0.284	0.263	0.226	0.194	0.167	0.144	0.125	0.108	0.094
10	0.463	0.386	0.322	0.270	0.247	0.227	0.191	0.162	0.137	0.116	0.099	0.085	0.073

Rate of Return Components

When deciding on which annual return or present value rate to use on projected cash inflow, e.g., a 10%, 15%, or even a 30% rate of return for higher risks and uncertainty, you must consider the following factors.

- Basic *returns* available in today's marketplace — i.e., alternative invest-ment opportunities, such as the yields on triple-A bonds and certificates of deposit.

- *Inflation* — the dollars you receive or pay years from now are *not* worth the same as dollars received or paid *today.*

- *Liquidity* — the ability to promptly convert the asset back into cash without any significant loss of principal. *Example:* A publicly held stock or bond can be sold the same day it is purchased. In contrast, an ownership position in a closely held business is *very* illiquid; it can't be readily converted to cash.

- *Risks* involved in obtaining the cash inflow — the greater the risk, the higher the annual return needed and thus the higher the present value rate used.

Use the factors above when setting the rate of return and present value rate when valuing a business or any projected income stream. □

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