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**SBA**

# Understanding Cash Flow



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## Summary

The prime objective for any business is to survive. That means a firm must have enough cash to meet its obligations. This publication shows the owner-manager how to plan for the movement of cash through the business and thus plan for future requirements.

## Introduction

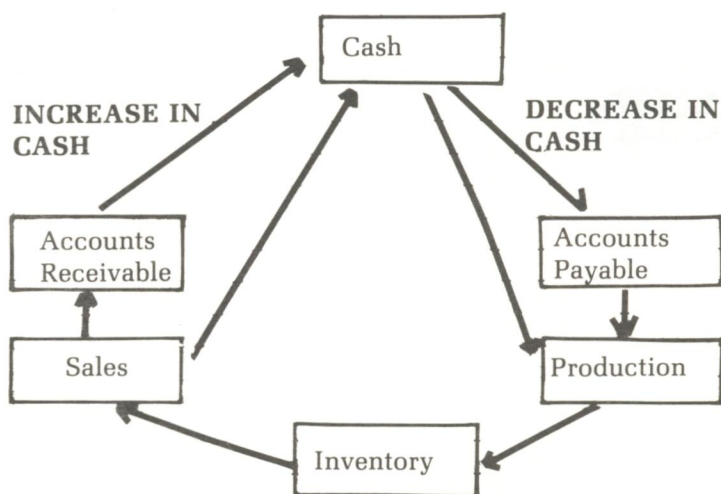
All businesses, no matter how small or large, function on cash. Many businesses become insolvent because they do not have enough cash to meet their short term obligations; bills must be paid in cash, not profits. Sufficient cash is, therefore, one of the keys to maintaining a successful business. Thus, you must understand how cash moves or flows through the business and how planning can remove some of the uncertainties about future requirements.

## Cash Flow

**Cash Cycle.** In any business there is a continual cycle of events which may increase or decrease the cash balance. The following diagram is used to illustrate this flow of cash.

Cash is decreased in the acquisition of materials and services to produce the finished goods. It is reduced in paying off the amounts owed to suppliers; that is, accounts payable. Then, inventory is sold and these sales generate cash and accounts receivable; that is, money owed from customers. When customers pay, accounts receivable is reduced and the cash account increases. However, the cash flows are not necessarily related to the sales in that period because customers may pay in the next period.

The small business manager must continually be alert to changes in working capital accounts, the cause of these changes, and the implications of these changes for the financial health of the company.



**Net Working Capital.** Current assets are those resources of cash and those assets which can be converted to cash within one year or a normal business cycle. These include cash, marketable securities, accounts receivable, inventories, etc. Current liabilities are obligations which become due within one year or a normal business cycle. These include accounts payable, notes payable, accrued expenses payable, etc. You may want to consider current assets as the source of funds which reduce current liabilities.

One way to measure the flow of cash and the firm's ability to maintain its cash or liquid assets is to compute *working capital*. It is the difference between current assets and current liabilities. The change in this value from period to period is called *net working capital*. For example,

	<u>19 × 1</u>	<u>19 × 2</u>
Current Assets,	\$110,000	\$200,000
less Current Liabilities	<u>- 70,000</u>	<u>- 112,000</u>
Working Capital	<u>40,000</u>	<u>88,000</u>
Net Working Capital Increase (Decrease)		<u><u>\$48,000</u></u>

Net working capital increased during the year, but we don't know how. It could have been all in cash or all in inventory. Or, it may have resulted from a reduction in accounts payable.

**Cash Flow Statement.** While net working capital shows only the changes in the current position, a "flow" statement can be developed to explain the changes that have occurred in any account during any time period. The cash flow statement is an analysis of the cash inflows and outflows.

The ability to forecast cash requirements is indeed a means of becoming a more efficient manager. If you can determine the cash requirements for any period, you can establish a bank loan in advance, or you can reduce other current asset accounts so that the cash will be made available. Also, when you have excess cash, you can put this cash into productive use to earn a return.

The change in the cash account can be readily determined if you know net working capital and the changes in current liabilities and current assets other than cash.

Let:  
 NWC be net working capital  
 CA be the change in current assets other than cash  
 CL change in current liabilities  
 cash be the change in cash

Because net working capital is the difference between the change in current assets and current liabilities,

$$\begin{aligned} \text{NWC} &= \text{CA} + \text{cash} - \text{CL} \\ \text{cash} &= \text{NWC} - \text{CA} + \text{CL} \end{aligned}$$

This relationship states that if we know net working capital (NWC), the change in current liabilities (CL), and the change in current assets less cash (CA less cash), we can calculate the change in cash. The change in cash is then added to the beginning balance of cash to determine the ending balance.

Suppose you forecast that sales will increase \$50,000 and the following will correspondingly change:

Receivables	increase by \$25,000
Inventory	increase by \$70,000
Accounts Payable	increase by \$30,000
Notes Payable	increase by \$10,000

Using net working capital of \$48,000, what is the projected change in cash?

$$\begin{aligned} \text{cash} &= \text{NWC} - \text{CA} + \text{CL} \\ &= 48,000 - 25,000 - 70,000 + 30,000 + 10,000 \\ &= -7,000 \end{aligned}$$

Conclusion: Over this time period, under the condition of increasing sales volume, cash decreases by \$7,000. Is there enough cash to cover this decrease? This will depend upon the beginning cash balance.

*Sources and Application of Funds.* At any given level of sales, it is easier to forecast the required inventory, ac-

counts payable, receivables, etc., than net working capital. To forecast this net working capital account, you must trace the sources and application of funds. Sources of funds increase working capital. Applications of funds decrease working capital. The difference between the sources and applications of funds is the net working capital.

The following calculation is based on the fact that the balance sheet is indeed in "balance." That is, total assets equal total liabilities plus stockholders' equity.

$$\text{current assets} + \text{noncurrent assets} = \text{current liabilities} + \text{long-term liabilities} + \text{equity}$$

Rearranging this equation:

$$\text{current assets} - \text{current liabilities} = \text{long-term liabilities} + \text{equity} - \text{noncurrent assets}$$

Because the left-hand side of the equation is working capital, the right-hand side must also equal working capital. A change to either side is the net working capital. If long-term liabilities and equity increase or noncurrent assets decrease, net working capital increases. This change would be a source of funds. If noncurrent assets increase or long-term liabilities and equity decrease, net working capital decreases. This change would be an application of funds.

Typical sources of funds or net working capital are:

Funds provided by operations

Disposal of fixed assets

Issuance of stock

Borrowing from a long term source

To obtain the item, "funds provided by operations," subtract all expense items requiring funds from all revenues that were sources of funds. You can also obtain this result in an easier manner: add back expenses which did not result in inflows or outflows of funds to reported net income.

The most common nonfund expense is depreciation, the allocation of the cost of an asset as an expense over the life of the asset against the future revenues produced. Adjusting net income with depreciation is much simpler than computing revenues and expenses which require funds. Again, depreciation is not a source of funds.

The typical applications of funds or net working capital are:

- Purchase of fixed assets
- Payment of dividends
- Retirement of long-term liabilities
- Repurchase of equity.

The following is an example of how sources and applications of funds may be used to determine net working capital.

### Statement of Sources & Applications of Funds

Sources of Funds:	
From Operation	
Net Income	\$10,000
Add Back Depreciation (noncash item)	<u>15,000</u>
	25,000
Issuance of Debt	175,000
Issuance of Stock	<u>3,000</u>
	<u>\$203,000</u>
Applications of Funds:	
Purchase of Plant	140,000
Cash Dividends	<u>15,000</u>
	155,000
Net Working Capital Increase (Decrease)	<u><u>\$48,000</u></u>

**Statement of Changes in Financial Position.** This statement combines two statements previously discussed: the statement of sources and application of funds and the changes in working capital accounts. This statement can be converted into a cash flow statement by solving for cash as the unknown, as shown below.

### Cash Flow Statement

Sources of Funds		\$203,000
Applications of Funds		<u>155,000</u>
Net Working Capital		\$ 48,000
Less:		
Increase in Receivables	25,000	
Increase in Inventory	<u>70,000</u>	- 95,000
		- 47,000
Plus:		
Increase in Accounts Payable	30,000	
Increase in Notes Payable	<u>10,000</u>	40,000
Cash Flow		<u><u>\$ - 7,000</u></u>

## Planning For Cash Flow

Cash flow can be used not only to determine how cash flowed through the business but also as an aid to determine the excess or shortage of cash. Suppose your analysis of cash flow forecasts a potential cash deficiency. You may then do a number of things, such as:

Increase borrowings: loans, stock issuance, etc.

Reduce current asset accounts: reduce receivables, inventory, etc.

Reduce noncurrent assets: postpone expanding the facility, sell off some fixed assets, etc.

By using a cash flow statement you can determine if sufficient funds are available from financing activities, show funds generated from all sources, and show how these funds were applied. Using and adjusting the information gained from this cash flow analysis will help you to know in advance if there will be enough cash to pay

Suppliers' bills

Bank loans

Interest

Dividends.

Careful planning will insure a sufficient amount of cash to meet future obligations on schedule which is essential for the "successful" business.

## Planning Aid

The following example is presented to help you develop a cash flow analysis. Of course, all names are fictitious.

During the next month, Irene Smith, owner-manager of Imagine Manufacturing, expects sales to increase to \$10,000. Based on past experience, she made this forecast:

Net income to be 9% of sales	\$ 900
Income taxes to be 3.2% of sales	320
Accounts receivable to increase	5,000
Inventory to increase	2,000
Accounts payable to increase	3,000

Her beginning cash balance is \$3,000 and she plans to purchase a piece of equipment for \$1,500. What is her cash flow?

### Cash Flow Analysis

Sources of Funds:	
Net Income	\$ 900
Add Back Depreciation	<u>1,000</u>
	<u>1,900</u>
Application of Funds:	
Addition to Fixed Assets	\$1,500
Payment of Taxes	<u>320</u>
	<u>1,820</u>
Net Working Capital Increase (Decrease)	<u>\$ 80</u>
Working Capital Accounts:	
Less Change in	
Inventory	\$ - 2,000
Accounts Receivable	- 5,000
Plus Change in	
Accounts Payable	<u>3,000</u>
Cash Flow	<u>\$ - 3,920</u>
Plus Beginning Cash Balance	<u>3,000</u>
Equals Ending Cash Balance	<u>\$ - 920</u>

Assuming Irene's forecast is correct, she has a cash need of \$920 next month. If she cannot borrow the additional funds, she must either reduce sales, which may reduce profits, or find another source of cash. She can now use her cash flow analysis to try to determine a source of funds or a reduction in the application of funds. An easy solution is to postpone the purchase of the equipment. This would increase her cash flow by \$1,500, more than enough for a positive cash balance at the end of next month.

## Analyzing Your Records for Potential Cash Resources

In addition to the cash flow technique described in the previous section, it is important to know how to analyze your records in order to develop a more efficient business. By eliminating unnecessary cost through increased operating efficiency, the business' cash flow will improve.

## Analyzing Your Expenses

Sometimes you cannot cut an expense item. But you can get more from it and thus increase your profits. In analyzing your expenses, you should use percentages rather than actual dollar amounts.

For example, if you increase sales and keep the dollar amount of an expense the same, you have decreased that expense as a percentage of sales. When you decrease your cost percentage, you increase your percentage of profit.

On the other hand, if your sales volume remains the same, you can increase the percentage of profit by reducing a specific item of expense. Your goal, of course, is to do both: to decrease specific expenses and increase their productive worth at the same time.

Before you can determine whether cutting expenses will increase profits, you need information about your operation. This information can be obtained only if you have an adequate recordkeeping system. Such records will provide the figures to prepare a profit and loss statement (preferably monthly for most retail businesses), a cash budget, break-even calculations, and evaluations of your operating ratios compared with those of similar types of business.

**Break-even.** One useful method for making expense comparisons is break-even analysis. Break-even is the point at which gross profit equals expenses. In a business year, it is the time at which your sales volume has become sufficient to enable your over-all operation to start showing a profit. The two condensed profit and loss statements, in the accompanying example, illustrate the point. In statement "A," the sales volume is at the break-even point and no profit is made. In Statement "B" for the same store, the sales volume is beyond the break-even point and a profit is shown. In the two statements, the percentage factors are the same except for fixed expenses, total expenses, and operating profit.

	A		B	
	Break-Even Amount	Percent of Sales	Profit Amount	Percent of Sales
Sales . . . . .	\$500,000	100	\$600,000	100
Cost of Sales . . . . .	<u>300,000</u>	<u>60</u>	<u>360,000</u>	<u>60</u>
Gross Profit . . . . .	<u>200,000</u>	<u>40</u>	<u>240,000</u>	<u>40</u>
Operating Expenses				
Fixed . . . . .	150,000	30	150,000	25
Variable . . . . .	<u>50,000</u>	<u>10</u>	<u>60,000</u>	<u>10</u>
Total . . . . .	<u>200,000</u>	<u>40</u>	<u>210,000</u>	<u>35</u>
Operating Profit . . . . .	\$ NONE	0	\$ 30,000	5

As shown in the example, once your sales volume reaches the break-even point, your fixed expenses are covered. Beyond the break-even point, every dollar of sales should earn you an equivalent additional profit percentage.

It is important to remember that once sales pass the break-even point, the fixed expenses percentage goes down as the sales volume goes up. Also the operating

profit percentage increases at the same rate as the percentage rate for fixed expenses decreases—provided, of course, that variable expenses are kept in line. In the illustration, fixed expenses in Statement “B” decreased by 5 percent and operating profit increased by 5 percent. (For a more detailed discussion, see MA 1.019, *Breakeven Analysis: A Decision-Making Tool*.)

## Locating Reducible Expenses

Your profit and loss (or income) statement provides a summary of expense information and is the focal point in locating expenses that can be cut. Therefore, the information should be as current as possible. As a report of what *has already been* spent, a P and L statement alerts you to expense items that bear watching in the present business period. If you get a P and L statement only at the end of the year, you should have one prepared more often. At the end of each quarter might be often enough for some firms. Ideally, you get the most recent information from a monthly and P and L.

Regardless of the frequency, for the most information, two P and L statements should be prepared. One statement should report the sales, expenses, profit and/or loss of your operations cumulatively for the current business year to date. The other should report on the same items for the last complete month or quarter. Each of the statements should also carry the following information: (1) this year's figures and each item as a percentage of sales, (2) last year's figures and the percentages, (3) the difference between last year and this year—over or under, (4) budgeted figures and the respective percentages, (5) the difference between this year and the budgeted figures—over and under, (6) average percentages for your line of business (industry operating ratio) when available, and (7) the difference between your annual percentages and the industry ratios—under or over.

This information allows you to locate expense variation in three ways: (1) by comparing this year to last year, (2) by comparing expenses to your own budgeted figures, and (3) by comparing your percentages to the operating ratios for your line of business.

The important basis for comparison is the percentage figure. It represents a common denominator for all three methods. When you have indicated the percentage variations, you should then study the dollar amounts to determine what kind of corrective action is needed.

Because your cost cutting will come largely from variable expenses, you should make sure that they are flagged on your P and L statements. Variable expenses are those which fluctuate with the increase or decrease of sales volume. Some of them are advertising, delivery, wrap-

ping supplies, sales salaries, commissions, and payroll taxes. Fixed expenses are those which stay the same regardless of sales volume. Among them are: your salary, salaries for permanent non-selling employees (for example, the bookkeeper), depreciation, rent, and utilities.

## Checking Accounts Receivable and Inventory

**Accounts receivable** represent the extension of credit to support sales. In many lines of business, the types and terms of credit granted by the firm are set by established competitive practices. As an investment, the accounts receivable should contribute to overall Return on Investment (ROI).

Excessive investment in accounts receivable can hurt ROI by tying up funds unnecessarily. One good way to judge the extent of accounts receivable is to compare your average collection period with that of rivals or the industry average. If your average collection period is much higher than your competitors' or the industry norm, your accounts receivable may be excessive.

If they are excessive, it may be that you are not keeping tight control of late payers. You can check this by developing an aging schedule. The aging schedule shows the distribution of accounts receivable with respect to being on time or late.

Failure to closely monitor late payments ties up investment and weakens profits. The more overdue accounts become, the greater is the danger that they will be uncollectable and will have to be written off against profits.

If the aging schedule does not reveal excessive late accounts, your average collection period may be out of line simply because your credit policy is more liberal than most. If so, it should translate into more competitive sales and greater profits; otherwise, you should rethink your credit program.

**Inventory** also ties up cash. Excessive inventory will reduce your Return on Investment. One way to determine whether your inventory level is excessive is to compare your inventory turnover ratio with the industry norm. If your inventory turnover is much lower than the industry average, your ROI will suffer.

If inventory is much higher than it should be for your level of sales, it may be that you are holding items that are obsolete or that simply do not move fast enough to justify their cost. You may also be speculating on price increases. Or perhaps for competitive reasons you think a full line of

inventory items is essential, even if some items are in very low demand. In any case, you should reevaluate your policy and make sure that the gains outweigh the costs of the higher investment.

You must also consider the cost of inventory. There are two basic types of inventory costs: carrying costs and ordering costs.

Carrying costs are the costs associated with inventory storage, handling, and insurance. Ordering costs are the clerical and administrative costs incurred when an order is placed for an item in inventory. If you expect to use 10,000 widgets over the next thirty days, you could simply buy 10,000 now and carry them in inventory until they are all used up. Or you could buy 3,333 units every ten days. The more frequently you place orders for inventory, the less inventory you have to keep on hand and the less carrying costs you have. But more frequent orders also result in greater ordering costs.

## Taking Action

When you have located a problem area, the next step obviously is to reduce that cost so as to increase your profit. A key to the effectiveness of your cost-cutting action is the worth of the various expenditures.

As long as you know the worth of your expenditures, you can profit by making small improvements in expenses. Keep an open eye and an open mind. It is better to do a spot analysis once a month than to wait several months and then do a detailed study.

Take action as soon as possible. You can refine your cost-cutting action as you go along.

Be persistent. Sometimes results may be slower than you might like. Keep in mind that only persistent analysis of your records and constant action can keep expenses from eating up profit.

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