

CASH MANAGEMENT

I N T R O D U C T I O N

This chapter continues the discussion of cash flows. It illustrates the fact that net income shown on an income statement does not imply that there is an equivalent amount of cash in the bank.

This chapter also demonstrates the method of compiling a cash budget from cash receipts and cash disbursements. Negative cash flow may result at times. Various other nonrecurring transactions that could affect the preparation of a cash budget are also discussed.

The subject of cash conservation

and working capital management is covered. Included are such items as cash on hand and in the bank, use of bank float, concentration banking, use of two bank accounts, accounts receivable, use of lockboxes, aging of accounts, marketable securities, inventories, and accounts payable.

Finally, we tackle the topic of long-range cash flow (as opposed to short-term cash budgeting), including the use of CVP analysis (taking income tax into consideration) to convert required cash flow to a sales revenue figure.

C H A P T E R O B J E C T I V E S

After studying this chapter, the reader should be able to

- 1 Explain why cash planning is necessary, and state the two main purposes of cash budgeting.
- 2 Explain why net income on an income statement is not necessarily indicative of the amount of cash on hand.
- 3 List items that would appear under cash receipts and cash disbursements on a cash budget, and with appropriate information prepare a cash budget.

- 4 Define bank float and discuss the concept of concentration banking.
 - 5 Explain some of the procedures that can be used to minimize outstanding accounts receivable at any given time, including the use of a lockbox.
 - 6 Prepare a schedule of aging of accounts receivable.
 - 7 Discuss the importance of marketable securities with reference to surplus cash funds.
 - 8 Explain long-term cash flow budgeting, and use CVP to calculate the revenue required to provide a desired cash flow amount.
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CASH MANAGEMENT

Simply stated, cash management is the management of money so that bills and debts are paid when they are due. Money does not always come into a business at the same rate as it goes out. At times there will be excess cash on hand; at other times there will be shortages of cash. Both these events must be anticipated so that surpluses can be used to advantage and shortages can be covered. In this way, the cash balance will be kept at its optimum level.

Although the statement of cash flows discussed in Chapter 10 allows an analysis of inflows and outflows of cash on an annual basis, this chapter mainly discusses inflows and outflows of cash on a monthly basis.

THE CYCLE OF CASH FLOW

The cycle of cash flow through an enterprise is illustrated in Exhibit 11.1. This shows that cash management is not just a problem of making sure that the balance of cash in the bank is correct and that the cashiers have the right amount of money on hand. Rather, it is management of all working capital accounts—cash, inventories, accounts receivable, plus the management of accounts payable and loan payments—and of discretionary spending items, such as purchase of new capital assets and payment of dividends if cash is available.

Control over these various items of cash receipts and cash disbursements can be managed by preparing **cash budgets**. The importance of cash planning, or cash budgets, can best be explained by showing that the net income that a company has on its income statement (the excess of sales revenue over expenditure) is not necessarily indicative of the amount of cash the company has on hand.

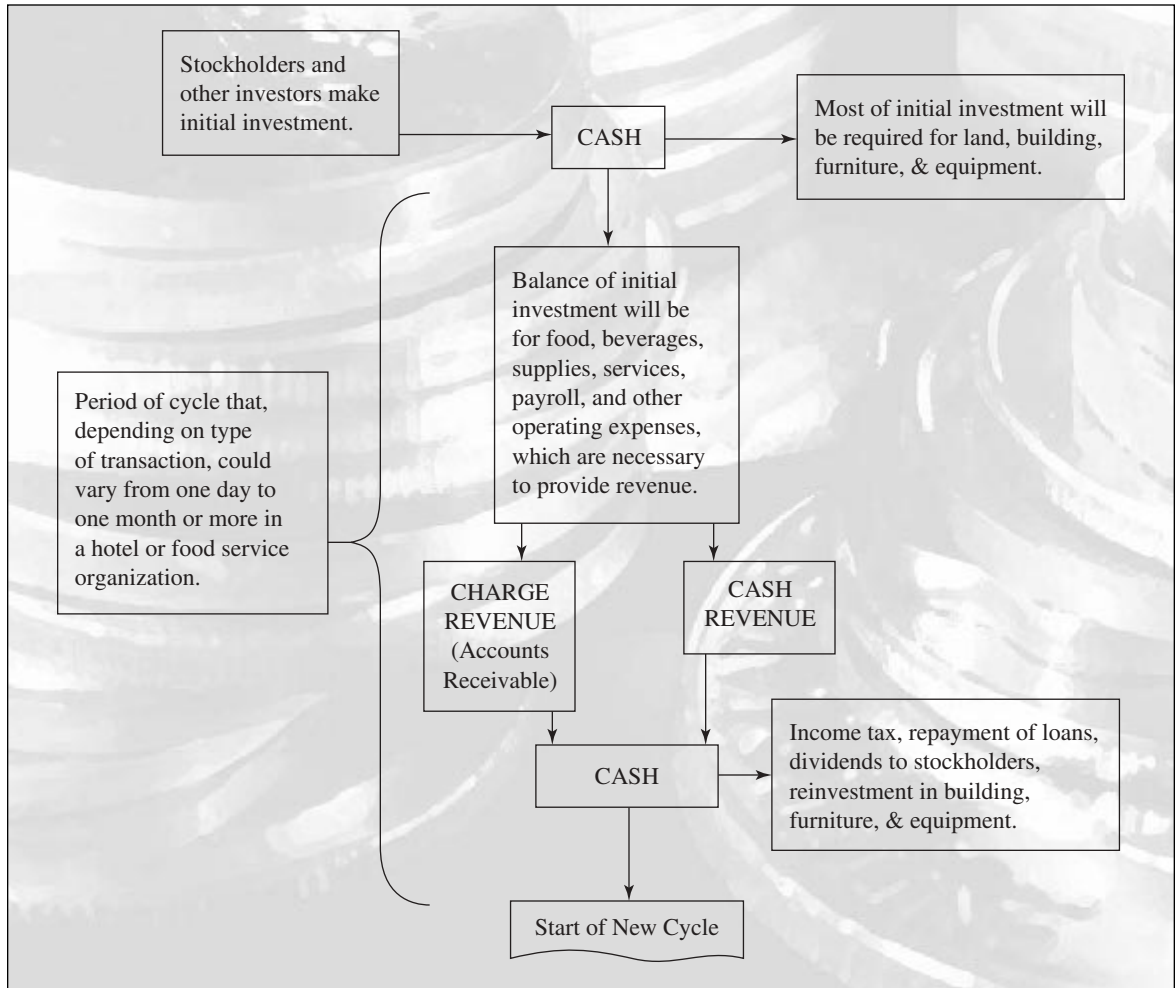
**EXHIBIT 11.1**

Illustration of the Cash Flow Cycle

Net Income Is Not Cash

Let us consider a simple illustration. An entrepreneur has an opportunity to take over a fully equipped and furnished restaurant for a rental cost of \$4,000 a month. The entrepreneur decides that a cash savings of \$20,000 should be sufficient working capital to start the business, after which the cash from sales revenue should keep the business going and allow a withdrawal of \$2,500 a month as a salary. Prior to opening, the proprietor's balance sheet would look like this:

Assets		Liabilities and Equity	
Cash	<u>\$20,000</u>	Owner's Capital	<u>\$20,000</u>

Before the owner can sell any food, some of the available cash was used for the purchase of \$6,000 of food inventory. Now the balance sheet looks like this:

Assets		Liabilities and Equity	
Cash	\$14,000	Owner's Capital	\$20,000
Inventory	<u>6,000</u>		
Total Assets	<u>\$20,000</u>	Owner's Capital	<u>\$20,000</u>

During the first month the restaurant had the operating results shown in Exhibit 11.2; total sales revenue of \$60,000, total expenses of \$56,000, and a net income of \$4,000. As a result, one might expect to see the bank account increased by \$4,000; but in our case this is not so, although sales revenue was \$60,000. To achieve the wanted level of sales revenue, the owner permitted some customers to sign their bills, send them invoices at the end of the month, and then collect the cash in month 2. In addition, the owner decided to honor national credit cards. As a result, at the end of the month there was \$18,000 of accounts receivable and the cash income was only \$42,000.

As far as expenses are concerned, the owner used the inventory that had already been paid for before opening and purchasing \$15,000 in additional food to pay food costs.

Sales revenue		\$60,000
Food cost		(21,000)
Gross margin		\$39,000
Owner's salary*	\$ 2,500	
Other wages	19,500	
Supplies and other expenses	9,000	
Rent expense	<u>4,000</u>	
Total expenses		(35,000)
Net income		<u>\$ 4,000</u>

*Since this operation is a proprietorship, the salary would not normally be an expense but would be taken as withdrawals from capital. However, for simplicity, we will assume it is an expense in this example.

EXHIBIT 11.2

Illustrative Income Statement

The actual cash outlays during the first month were for the additional inventory, the owner's salary, wages, supplies, other expenses, and rent. None of these items were obtainable on credit, so the net cash expenditures totaled \$50,000. In summary:

Cash receipts	\$42,000
Cash disbursements	(50,000)
Net change in the bank balance	<u>(\$ 8,000)</u>

However, since the food inventory has been used, it has to be replaced, and this will require \$6,000 cash. Therefore, since at the beginning of the month there was a cash balance (see earlier balance sheet) of \$14,000, the month-end cash balance will be

Bank balance beginning of the month	\$14,000
Change in bank balance from operations	(8,000)
Reduction in bank balance for replacement of inventory	(6,000)
Bank balance end of month	<u>0</u>

The month-end balance sheet will now be

Assets		Liabilities and Owner's Equity	
Cash	\$ 0	Owner's capital	\$20,000
Accounts receivable	18,000	Net income	4,000
Inventory	6,000		
Total assets	<u>\$24,000</u>	Net owner's capital	<u>\$24,000</u>

The balance sheet shows us that despite the positive net income for the first month, there is no cash in the bank to pay any other immediate expenses. Although this illustration is simplified, it is not untypical of what happens to new businesses, and it indicates the danger of assuming that any net income on the income statement is going to be in the form of cash. In this case, the net income of \$4,000 was not cash. In fact, the \$4,000 of net income and the \$14,000 of cash the owner started with at the beginning of the month, are now tied up in the accounts receivable of \$18,000.

The same principle applies in an ongoing concern. The net income on the income statement is not generally synonymous with cash. The timing of the cash inflows coming in from sales revenue may not parallel the timing of cash outflows being paid out for operating expenses. To prevent this difficulty; to see whether a business is going to have excesses or shortages of cash, a cash

budget prepared in advance month by month for a year, or at least every quarter, is a useful management tool.

INCOME AND EXPENSE CASH BUDGETS

The starting point in cash budgeting is the forecasted operating income statement showing the budgeted sales revenues and expense expenditures by month for as long a period as is required. In our case, a three-month period will be used, and budgeted income statements for a restaurant will be completed for the months of April, May, and June, as shown in Exhibit 11.3.

To prepare our cash budget, we need the following additional information:

1. Accounting records show that each month, approximately 60 percent of the sales revenue is cash, 35 percent is on credit cards, and 5 percent is on accounts receivable. Credit card receivables collected in the month of sales averages 86 percent and the remaining 14 percent of credit card receivables are collected in the following month. Accounts receivable sales are collected in the month following the sales. If this restaurant were a new business, the breakdown between cash and credit sales revenue would have to be estimated.
2. March sales revenue was \$28,000. This information is needed to calculate the amount of cash that is going to be collected in April from sales made in March.

	<i>April</i>	<i>May</i>	<i>June</i>
Sales revenue	\$30,000	\$35,000	\$40,000
Food cost	(12,000)	(14,000)	(16,000)
Gross profit	\$18,000	\$21,000	\$24,000
Payroll and related expense	\$9,000	\$10,500	\$12,000
Supplies and other expense	1,500	1,750	2,000
Utilities expense	500	750	1,000
Rent expense	1,000	1,000	1,000
Advertising	500 (12,500)	500 (14,500)	500 (16,500)
Income before depreciation	\$ 5,500	\$ 6,500	\$ 7,500
Depreciation	(2,000)	(2,000)	(2,000)
Net Income	<u>\$ 3,500</u>	<u>\$ 4,500</u>	<u>\$ 5,500</u>

EXHIBIT 11.3

Illustration of Budgeted Income and Expenses

3. Purchases of food inventory are paid 25 percent by cash and 75 percent on accounts payable. The 75 percent of purchases on accounts payable is paid the month following purchase.
4. March food purchases were \$11,000. Again, we need this information so that we can calculate the amount to be paid for in cash during April.
5. Payroll, supplies, utilities, and rent are paid 100 percent cash each month.
6. Advertising of \$6,000 was prepaid in January for the entire year. To show the consumption of the prepaid, prepaid advertising will be expensed at \$500 per month over the full year.
7. The cash balance on April 1 is \$10,200.
8. The owner repaid \$2,500 of the bank loan during April.

PREPARING THE CASH BUDGET

We can now use the budgeted income statements in Exhibit 11.3, and the previous information to calculate the figures for our three-month cash budget beginning in April. The month of April is illustrated to demonstrate the procedure.

Cash Receipts

Current month cash sales revenue [$\$30,000 \times 60\%$]	=	\$18,000
Current month credit card receivables, collections [$\$30,000 \times 35\% \times 86\%$]	=	9,030
Previous month credit card receivables, collections [$\$28,000 \times 35\% \times 14\%$]	=	1,372
Previous month accounts receivable, collections [$\$28,000 \times 5\%$]	=	1,400

Cash Disbursements

Current month cash food inventory purchases, $\$12,000 \times 25\% = \$3,000$	
Accounts payable food purchases, previous month, $\$11,000 \times 75\%$	= 8,250
Payroll and related expenses, 100% cash	= 9,000
Supplies and other expense, 100% cash	= 1,500
Utilities expense, 100% cash	= 500
Rent expense, 100% cash	= 1,000
Repaid bank loan	= 2,500

Prepaid advertising of \$6,000 was a cash disbursement in January and depreciation is a noncash expense. It reduces the book value of related depreciable assets.

The completed cash budget for April would then appear as shown in Exhibit 11.4.

<i>Beginning Cash Balance</i>	\$10,200
<i>Cash Receipts</i>	
Current month cash sales revenue	\$18,000
Current month credit card receivables, collections	9,030
Previous month credit card receivables, collections	1,372
Previous month accounts receivables, collections	1,400
<i>Total cash available</i>	<u>\$40,002</u>
<i>Cash Disbursements</i>	
Cash food purchases	\$ 3,000
Accounts payable	8,250
Payroll and related expenses	9,000
Supplies and other expenses	1,500
Utilities expense	500
Rent expense	1,000
<i>Cash disbursements, Operating activities</i>	<u>\$23,250</u>
<i>Loan repayment, Financing activities</i>	<u>2,500</u>
<i>Total Cash Disbursements</i>	<u>\$25,750</u>
<i>Ending Cash Balance</i>	<u>\$14,252</u>

EXHIBIT 11.4

Illustration of Monthly Cash Budget

The closing cash balance each month is calculated as follows:

$$\text{Beginning balance} + \text{Receipts} - \text{Disbursements} = \text{Closing cash balance}$$

Each month, the closing cash balance becomes the beginning cash balance of the next month. The completed cash budget for the three-month period is shown in Exhibit 11.5. From Exhibit 11.5, it can be seen that the cash account is expected to increase from the \$10,200 on April 1 to \$26,262 over the next three months. Continuing the cash budget over the following quarter would show whether the cash balance is going to continue to increase or begin to decline.

Exhibit 11.5 shows that this operation has a good surplus of cash as long as budget projections are reasonably accurate. This cash surplus should not be left to accumulate at no or low interest in a bank account. In this particular case, management might decide to take \$15,000 or \$20,000 out of the bank and invest it in high-interest, low-risk, short-term (30-, 60-, or 90-day) marketable securities. Without preparing a cash budget, it would be difficult for management to know that it was going to have surplus funds on hand that could be used to

	<i>April</i>	<i>May</i>	<i>June</i>
<i>Beginning Cash Balance</i>	\$10,200	\$14,252	\$19,757
<i>Cash receipts</i>			
Current month cash sales revenue	\$18,000	\$21,000	\$24,000
Current month credit card receivables, collections	9,030	10,535	12,040
Previous month credit card receivables, collections	1,372	1,470	1,715
Previous month accounts receivables, collections	1,400	1,500	1,750
<i>Total Cash</i>	<u>\$40,002</u>	<u>\$48,757</u>	<u>\$59,262</u>
<i>Cash Disbursements</i>			
Cash food purchases	\$ 3,000	\$ 3,500	\$ 4,000
Accounts payable	8,250	9,000	10,500
Payroll and related expense	9,000	10,500	12,000
Supplies and other expense	1,500	1,750	2,000
Utilities expense	500	750	1,000
Rent expense	1,000	1,000	1,000
<i>Cash disbursements, Operating activities</i>	<u>\$23,250</u>	<u>\$26,500</u>	<u>\$30,500</u>
<i>Loan repayment, Financing activities</i>	<u>2,500</u>	<u>2,500</u>	<u>2,500</u>
<i>Total Cash Disbursements</i>	<u>\$25,750</u>	<u>\$29,000</u>	<u>\$33,000</u>
<i>Ending Cash Balance</i>	<u>\$14,252</u>	<u>\$19,757</u>	<u>\$26,262</u>

EXHIBIT 11.5

Illustration of Three-Month Cash Budget

increase net income and subsequently cash receipts. If the cash were taken out of the bank account and invested, the cash budget would have to show this (listed in the financing section); when the marketable securities were cashed in, the amount would be recorded on the cash budget as a receipt in the operating (or financing) section, along with interest earned.

As the budget period goes by, the cash budget for the remaining months in that period may need to be adjusted to reflect any changed conditions.

NEGATIVE CASH BUDGET

On occasion some companies, particularly seasonal operations, may find that for some months in the year their disbursements exceed receipts to the point that they have negative cash available. Exhibit 11.6 illustrates such a situation. The operation will be short of cash by an estimated \$1,000 in each of months 4 and 5. However, having prepared a cash budget ahead of time, the company has anticipated the cash shortage and can plan to cover it using a short-term bank loan or by loans from stockholders or owners.

	<i>Month 1</i>	<i>Month 2</i>	<i>Month 3</i>	<i>Month 4</i>	<i>Month 5</i>	<i>Month 6</i>
Beginning balance	\$ 5,000	\$ 8,000	\$ 9,000	\$ 4,000	(\$ 1,000)	(\$ 1,000)
Receipts	<u>66,000</u>	<u>72,000</u>	<u>60,000</u>	<u>50,000</u>	<u>48,000</u>	<u>60,000</u>
Total	\$71,000	\$80,000	\$69,000	\$54,000	\$47,000	\$59,000
Disbursements	(63,000)	(71,000)	(65,000)	(55,000)	(48,000)	(55,000)
Ending balance	<u>\$ 8,000</u>	<u>\$ 9,000</u>	<u>\$ 4,000</u>	<u>(\$ 1,000)</u>	<u>(\$ 1,000)</u>	<u>\$ 4,000</u>

EXHIBIT 11.6

Illustration of Negative Cash Flow

OTHER TRANSACTIONS AFFECTING CASH BUDGET: THE FINANCING SECTION

The **financing section** of the cash budget is used to record all cash receipts and disbursements that are not part of the day-to-day activities of the business.

Just as a cash investment (because of surplus cash) must be recorded on the cash budget, so must cash loans (from banks or stockholders, for example, to cover short-term requirements) be shown as receipts. Repayments of such loans are recorded as disbursements. These transactions are recorded in the financing section of the cash budget.

A number of other possible transactions could occur that must be recorded on the cash budget. For example, if any new long-term loans were negotiated, the cash received during a cash budget period must be shown as a receipt in the financing section, as would cash received from any new issues of stock. If any fixed assets were sold for cash, this would also affect the financing section of the cash budget.

On the other hand, any repayments of principal amount of loans, redemption of stock for cash, or purchases of new fixed assets would require disbursements in the financing section of the cash budget.

Finally, any cash dividends paid would further reduce cash on hand, and, therefore, requires an entry in the financing section.

The cash budget, particularly if prepared for a year ahead, cannot only help management make decisions about investing excess funds and arranging to borrow funds to cover shortages, but also aids in making discretionary decisions concerning such factors as major renovations, replacement of fixed assets, and payment of dividends. The cash budget shows management how much cash is available for these discretionary items.

A cash budget, if carefully prepared, permits management to plan ahead to do or not do certain things, depending on cash availability. If decisions are made and plans are prepared for major spending items without preparing a cash budget, sudden shortages of cash may develop. These shortages may not be able to be covered quickly with loans because no plans had been made to arrange for

loans. As well, if the operation cannot arrange additional financing, the cash budget helps managers plan to change payment and collection schedules to cover the cash shortage. If the cash shortage cannot be covered, the operation could go bankrupt.

CASH CONSERVATION AND WORKING CAPITAL MANAGEMENT

The preparation of a cash budget is an important ingredient to the short-term survival and ultimate success of a business. However, there are certain practices that any hospitality operator should institute as a matter of good business sense to conserve cash, earn interest on it (one possibility), and thus maximize net income. Some of these more common practices of **cash management** are discussed.

CASH ON HAND

Cash on hand, as distinguished from cash in the bank, is the amount of money in circulation in an operation. Cashiers use this cash for change-making purposes, petty cash, or just general cash in the organization's safe. The amount of cash on hand should be sufficient for normal day-to-day operations only. Any surplus, idle cash should be deposited in savings accounts so it can earn interest. Preferably, each day's net cash receipts should be deposited in the bank as soon as possible on the following day.

CASH IN BANK

Cash in the bank in the current operating account should be sufficient to pay only the employee payroll and current accounts payable due. Any excess funds should be invested in short-term securities (making sure there is a good balance between maximizing the interest rate, security, and liquidity of the investment) or in savings or other special accounts that earn interest. The typical hospitality industry enterprise will probably determine an appropriate level of cash to be held after considering the following:

- Anticipated cash flows indicated by the cash budget.
- Unanticipated events causing deviations from the cash budget.
- Ability to borrow money for emergencies above the minimal cash requirements, plus any precautionary amounts.
- Desire of management to always have more than sufficient cash on hand rather than maintaining a minimum cash level. A minimum cash level

may aid in increasing net income, but at the same time it will increase risk.

- Efficiency of the cash management system. The more efficient a business's system is, the more surplus cash will be available for investment and increased profits.
- Historical evidence and past experience, which can be a guide to establishing satisfactory levels of cash.

USE OF FLOATS

A **bank float** is the difference between the bank balance shown on a company's records and the balance of actual cash in the bank. There is a difference because checks a company writes are deducted from its record of the bank balance at that time. However, there is a delay between that time (due to mailing and the handling of the check by the recipient and then by his bank) and the time that the check is received by the company's bank and deducted from its records. If a company can estimate the amount of this float and the time involved, it can then invest the amount for that period and increase its net income.

CONCENTRATION BANKING

Concentration banking (also known as **integrated banking**) might be appropriate for chain-operated hotels or restaurants. It is a method of accelerating the flow of funds from the individual units in the chain to the company's head office bank account. The individual units will still have accounts at the bank's local branch in the city where the unit is operated, but arrangements will be made with the local bank to transfer any surplus above a predetermined level in the account to the head office's bank immediately.

Disbursements for supplies and payroll would be made from the head office account on behalf of the individual units. Only sufficient cash to take care of normal day-to-day disbursements would be held in the local account. Any surplus would be invested in such items as marketable securities (to be discussed later in this chapter). A concentration banking system results in more effective cash management for the entire chain. For example, there might be a temptation for a local unit manager to pay invoices before their due date to keep local suppliers happy. Also, if an individual unit requires cash, the head office can provide it so the local unit manager does not have to negotiate a loan with the local banker at less favorable terms.

In concentration banking, it is important to minimize the cost of funds' transfers. In certain situations, daily transfers from the individual units to the head

office account might not be the most appropriate action. To determine how frequently transfers should be made, the following equation may be used:

$$\text{Transfer frequency} = \frac{2 \times \text{Average bank balance}}{\text{Average daily deposit}}$$

For example, if a restaurant unit were to require an average bank balance of \$20,000, and if its average daily deposit was \$5,000, the transfer frequency would be

$$\frac{2 \times \$20,000}{\$5,000} = \frac{\$40,000}{\$5,000} = \underline{8 \text{ days}}$$

This means that at the beginning of each eight-day period, the balance in the unit's bank account will be zero. At the end of eight days it will have accumulated to \$40,000, at which time the full \$40,000 is transferred, reducing the balance again to zero. Nine transfers are eliminated, thus minimizing transfer costs. In general, the only time that a daily transfer would be profitable for an operation would be if the average bank balance required were less than half the average daily deposit.

TWO BANK ACCOUNTS

In addition to concentration banking, large chain operations can also benefit from the float effect by having one bank account on the East Coast and the other on the West Coast. Collections from the Pacific-side operations would be deposited in the West Coast bank; payments on behalf of these operations would be made from the East Coast bank. The reverse situation would exist for Atlantic-side operations.

ACCOUNTS RECEIVABLE

Attention to accounts receivable should be focused on two areas: ensuring that invoices are mailed out promptly and following up on delinquent accounts to have them collected. Money tied up in accounts receivable is money not earning a return. Extension of credit to customers is an acknowledged form of business transaction, but it should not be extended to the point of allowing payments to lag two or three months behind the mailing of invoices. In hotels, a special

situation arises. Accounts receivable in hotels are made up of city ledger accounts and house accounts. City ledger accounts include banquet and convention business, regular credit card charges for individuals using the hotel's food and beverage facilities, and the accounts of people who were staying in the hotel but who have checked out and charged their bills. Normal collection procedures prevail for collecting such accounts. The house accounts are for those registered in the hotel that have not yet checked out. In some cases, such accounts can build up to large amounts in a very short time. A good policy is to establish a ceiling to which the dollar amount of an individual account may rise. Once this ceiling is reached, the night auditor can be instructed to advise the credit manager, or general manager in a smaller hotel, who must then decide whether any action should be taken to request payment, or partial payment, of the account, or to discuss a credit arrangement with the guest. Where guests stay for longer periods without necessarily running up large accounts, a good policy is to give the guest a copy of the bill at least once a week. This serves two purposes. It allows the guest to confirm or question the accuracy of the account, and it suggests that payment should be made or arrangements for credit established.

AGE OF ACCOUNTS RECEIVABLE CHARTS

One of the ways to keep an eye on the accounts receivable is to periodically (possibly once a month) prepare a chart showing the age of the accounts outstanding. Exhibit 11.7 illustrates such a chart and shows that the accounts receivable outstanding situation has not improved from March to April. In March, 79.5 percent of total receivables were less than 30 days old. In April, only 74.2 percent were less than 30 days outstanding. Similarly, the relative percentages in the 31- to 60-day category have worsened from March to April. As well, in the 61- to 90-day bracket, 11.3 percent of receivables are outstanding in April, against only 3.2 percent in March. This particular aging chart shows that our accounts receivable are getting older. If this trend continued, collection procedures would need to be improved. If, after all possible collection procedures have been explored, an account is deemed to be uncollectable (a bad debt), it

<i>Age</i>	<i>March 31</i>		<i>April 30</i>	
0–30 days	\$59,000	79.5%	\$56,400	74.2%
31–60 days	11,800	15.9%	8,800	11.6%
61–90 days	2,400	3.2%	8,600	11.3%
Over 90 days	1,050	1.4%	2,200	2.9%
Totals	<u>\$74,250</u>	<u>100.0%</u>	<u>\$38,000</u>	<u>100.0%</u>

EXHIBIT 11.7

Analysis (Aging) of Accounts Receivable

would then be removed from accounts receivable. The manager or owner should make the decision as to whether an account is not collectable in a small operation. In a larger operation, the credit manager or comptroller would make the decision if an account is collectable.

LOCKBOXES

The collection of accounts receivable can also be made more efficient by the use of a lockbox. **Lockboxes** are most appropriate for chain operations. When they are used, customers are directed to mail their checks in payment of accounts to a designated post office mailbox. The hospitality establishment's bank picks up the mail and deposits the receivables' payments into the hospitality operation's bank account and subsequently notifies the establishment of the necessary detail for it to record payments in its accounts receivable. The main advantages of the lockbox system are that the individual units in the chain are freed from receiving and depositing payment checks and that the collection process is speeded up by one or more days.

There is a cost attached to using a lockbox. To determine whether the added efficiency is profitable, the cost should be compared with the increased income from the cash released for investment elsewhere. If income exceeds cost, the system is profitable; if the reverse is the case, it is not.

Alternatively, it may be useful to calculate the minimum level of the average accounts receivable payment that would make a lockbox system profitable. Suppose that the bank charges 20 cents for each payment check handled and that the opportunity cost of the interest the hospitality operation could earn by investing freed-up cash in alternative investments such as marketable securities is 9 percent. By using a lockbox, the collection of accounts receivable is speeded up by two days. An equation for determining the minimum level of accounts receivable that would make the lockbox system profitable is:

$$\frac{\text{Bank charge per item}}{\text{Opportunity cost percentage per day} \times \text{Time savings in days}}$$

Using our figures, the minimum accounts receivable amount is

$$\frac{\$0.20}{(9\% / 365) \times 2} = \frac{\$0.20}{0.00024666 \times 2} = \frac{\$0.20}{0.0004932} = \underline{\underline{\$405.52}}$$

Given these assumptions, this means that with a lockbox system, payments in excess of \$405 on accounts receivable would be profitable and payments less than \$405 would not be profitable. A decision could be made to use a lockbox if the average payment exceeded \$405. Alternatively, a more profitable approach might be to handle accounts receivable according to size. For example, when the accounts are mailed out, those in excess of \$405 would carry instructions to

use the lockbox mailing address, and those less than \$405 would be handled in the regular manner.

MARKETABLE SECURITIES

Generally, any surplus cash not needed for immediate and precautionary purposes should be invested in some type of security. Investments could be for as short a period as one day, but are usually for longer periods, although seldom more than a year. If surplus cash were available for periods of a year or more, it might then be wise to seek out long-term investments, such as building a new property or expanding an existing one, because the return on those investments over the long run could be expected to be greater than for investment in short-term securities.

Most hospitality industry enterprises, particularly those that rely for much or all of their trade on seasonal tourists, have peaks and valleys in their cash flows. Surplus cash from peak-season flows should be invested in short-term securities until it is necessary to liquidate them to take care of low, or negative, cash flows during the off-season. Sometimes it is necessary to build up surplus cash to take care of periodic lump-sum payments, such as quarterly tax or dividend payments. These built-up amounts could be invested in marketable securities until they were needed for payment of these liabilities.

In times of high interest rates, many companies find it profitable to invest all cash in excess of day-to-day needs in the most liquid of marketable securities, those that can be converted into cash quickly if an unanticipated event requiring cash occurs. In this way, little if any precautionary cash will be carried.

Two important factors need to be considered when investing in marketable securities: risk and maintaining liquidity. A low risk generally goes hand in hand with a low interest rate. A more risky investment would have to offer a higher interest rate to attract investors. Government securities have very low risk and usually guarantee that the security can be cashed in at full face value at any time. Their interest rate, however, is also relatively low. On the other hand, investments in long-term corporate bonds may offer a higher interest rate. This type of security is, however, subject to economic factors that make their buy-sell price more volatile. This volatility increases the risk and can reduce the profitability of investing in them if they have to be liquidated, or converted into cash, at an inconvenient time.

Short-term, liquid marketable securities include such items as government treasury bills, bankers' acceptances, short-term notes, bank deposit receipts, and corporate or finance company paper. Long-term, less liquid investments include corporate bonds, preferred and common stock, equipment trust certificates, and municipal securities.

INVENTORIES

Keeping inventory low is an excellent way to conserve cash. One way to determine if the inventory level is correct is the inventory turnover ratio. The inventory turnover ratio was introduced in Chapter 4 when we discussed ratio analysis.

The inventory turnover should be calculated monthly. If the turnover rate at the end of any month is out of line, corrective action can be taken then.

Assuming we had the following figures:

Beginning of the month inventory	\$ 7,000
End of the month inventory	8,000
Purchases during month	24,500

Our calculation of the inventory turnover rate is

$$\frac{\text{Food cost of sales for the month}}{\text{Average food inventory during the month}} = \text{Times per month}$$

$$\frac{\$7,000 + \$24,500 - \$8,000}{(\$7,000 + \$8,000) / 2} = \frac{\$23,500}{\$7,500} = \underline{\underline{3.1 \text{ times}}}$$

Traditionally, the food industry food inventory turnover ranges between two and four times a month. However, keeping it close to and even over four is feasible for most operations. On one hand, at this level, the danger of running out of food items is minimal; on the other hand, there is not an over investment in inventory tying up money that could otherwise be put to use earning interest income. However, despite this range of two to four times a month, there may be exceptions. Perhaps of more importance to an organization is not what its actual turnover rate is, but whether there is a change in this turnover rate over time, and what the cause of the change is. For example, let us assume that the earlier figures of \$23,500 for food cost of sales and \$7,500 for average inventory, giving a turnover rate of 3.1, were typical of the monthly figures for this operation. If management noticed that the figure for turnover changed to two, this would mean that more money was being invested in inventory and not producing a return.

$$\frac{\$23,500}{\$11,750} = \underline{\underline{2 \text{ times}}}$$

Alternatively, a change in the turnover rate to four could mean that too little was invested in inventory and that some customers may not be able to get certain items listed on the menu.

$$\frac{\$23,500}{\$5,875} = \underline{\underline{4 \text{ times}}}$$

In some establishments, the turnover rate may be extremely low (less than two). For example, a resort property in a remote location may only be able to get deliveries once a month and is, thus, forced to carry a large inventory. However, a drive-in restaurant that receives daily delivery of its food items from a central commissary and carries little inventory overnight could conceivably have a turnover rate as high as 30 times a month. Each organization should establish its own standards for turnover and then watch for deviations from those standards.

Beverage inventory turnover is calculated using the same formula, but it substitutes beverage inventories and beverage purchases for food. The normal monthly turnover rate for beverages is from one to four times a month. The volume of beverage business and type of products offered will dictate each operation's beverage inventory turnover.

ACCOUNTS PAYABLE, ACCRUED EXPENSES, AND OTHER CURRENT LIABILITIES

The objective here, to conserve cash in the organization, is to delay payment until payment is required. However, this does not mean delaying payment until it is delinquent. A company with a reputation for delinquency may find it has difficulty obtaining food, beverages, supplies, and services on anything other than a cash basis. If a **discount** for prompt payments is offered, the advantages of this should be considered. For example, a common discount rate is 2 percent off the invoice total if it is paid within 10 days, otherwise it is payable without the discount within 30 days. On a \$1,000 purchase paid within 10 days, this would save \$20. This might not seem to be a lot of money, but multiplied many times over on all similar purchases made during a year, it could amount to a large sum. However, in the example cited, the company might have to borrow the money (\$980) to make the payment within 10 days. Let us assume the money was borrowed for 20 days at an 8 percent interest rate. The interest expense on this borrowed money would be

$$\frac{\$980 \times 20 \text{ days} \times 8\%}{365 \text{ days}} = \frac{\$1,568}{365} = \underline{\underline{\$4.30}}$$

It would still be advantageous to borrow the money since the difference between the discount saving of \$20.00 and the interest expense of \$4.30 is \$15.70.

OTHER ITEMS

There are other methods of operating with the objective of conserving cash in the business. One example is leasing, rather than purchasing, an asset to take advantage of a tax saving. This and other more long-range techniques are covered in Chapter 12.

LONG-RANGE CASH FLOW

The **long-range cash flow** budget differs somewhat from day-to-day cash budgeting. The long-range cash flow projections ignore any changes within working capital and assume that the current asset and liability amounts remain relatively constant over the long run. The long-range cash flow budget is usually prepared for yearly periods up to five years ahead.

The starting point in the preparation of a long-range cash flow budget is the annual net income figure. Depreciation is added back to determine cash inflow. Principal payments on long-term borrowings, payment of cash dividends, and equipment purchases make up normal cash outflow. A simple cash flow budget for five years appears in Exhibit 11.8.

The long-term cash flow budget serves the following purposes:

- It allows the manager to see whether there will be cash available to meet long-term mortgage, bond, or other loan commitments.
- It indicates a possible need to arrange additional long-term borrowings or the need to issue additional stock to raise cash.
- It allows for planning replacement of or additions to long-term assets (note that if any long-term assets were bought or sold, the cash disbursed or received would be included in the cash flow projections).

	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>	<i>Year 5</i>
Net income after tax	\$10,000	\$21,500	\$30,000	\$ 35,500	\$ 40,000
Add back depreciation expense	<u>80,000</u>	<u>72,000</u>	<u>65,000</u>	<u>59,000</u>	<u>55,000</u>
	90,000	93,500	95,000	94,500	95,000
Deduct long-term loan payments	(60,000)	(63,000)	(65,000)	(67,000)	(68,000)
Net cash flow	<u>\$30,000</u>	<u>\$30,500</u>	<u>\$30,000</u>	<u>\$ 27,500</u>	<u>\$ 27,000</u>
Accumulated cash flow		<u>\$60,500</u>	<u>\$90,500</u>	<u>\$118,000</u>	<u>\$145,000</u>

EXHIBIT 11.8

Illustration of Long-Range Accumulated Cash Flow

- It permits the planning of a dividend payment policy, since it shows whether there will be surplus cash available for dividends.

CASH FLOW AND CVP

CVP analysis (discussed in Chapter 8) can also be applied to cash flow. It can answer the question: How much sales revenue is needed to produce various levels of cash flow? For example, suppose the management of the operation illustrated in Exhibit 11.8 wanted a cash flow of \$38,000 in year one, rather than the \$30,000 illustrated. What would this require in terms of total sales revenue?

First, the desired cash flow has to be converted to an after-tax profit figure by adding to the desired cash flow the long-term loan payments and deducting depreciation, as in Exhibit 11.8:

$$\begin{array}{ccccccc} \text{Required} & = & \text{Required} & + & \text{Depreciation} & - & \text{Loan} \\ \text{cash} & & \text{net income} & & \text{expense} & & \text{payment} \end{array}$$

This equation can be rearranged so the required net income is isolated and provides the information we need.

$$\begin{array}{ccccccc} \text{Required} & + & \text{Loan} & - & \text{Depreciation} & = & \text{Required} \\ \text{cash} & & \text{payment} & & \text{expense} & & \text{net income} \\ \$38,000 & + & \$60,000 & - & \$80,000 & = & \underline{\underline{\$18,000}} \end{array}$$

The after-tax figure then has to be converted to a before-tax amount by the following equation:

$$\text{Operating income} = \frac{\text{After-tax profit}}{1 - \text{Tax rate}}$$

If the company's tax rate were 25 percent, this would be:

$$\frac{\$18,000}{1 - 25\%} = \frac{\$18,000}{75\%} = \underline{\underline{\$24,000}}$$

The following CVP equation can then be used to convert the operating income before-tax desired to a sales revenue figure:

$$\frac{\text{Fixed costs} + \text{Operating income (before tax)}}{\text{Contribution margin}}$$

If fixed costs (including depreciation) were \$180,000, and contribution margin were 60 percent sales, revenue required would be:

$$\frac{\$180,000 + \$24,000}{60\%} = \frac{\$204,000}{60\%} = \underline{\underline{\$340,000}}$$

This is proved as follows:

Sales revenue		\$340,000
Variable costs 40% × \$340,000	\$136,000	
Fixed costs	<u>180,000</u>	(316,000)
Operating income		\$ 24,000
Tax @ 25%		(6,000)
Net income		\$ 18,000
Add depreciation		<u>80,000</u>
Cash available		\$ 98,000
Deduct loan payments		(60,000)
Net cash flow		<u><u>\$ 38,000</u></u>

COMPUTER APPLICATIONS

If operations budgets are computerized using a spreadsheet, the same spreadsheet can take the budgeted figures and produce a cash budget. This cash budget can be produced so rapidly it can indicate cash needs not only on a monthly basis but also on a weekly or even daily basis. This is particularly true when things like the ratio of cash to charge sales remains relatively constant. Because a computerized budget can be constantly updated, it allows management to readily anticipate cash surpluses so the excess cash can be invested or to allow the surpluses to be used for discretionary expenditures.

A spreadsheet program can also handle all the necessary calculations for preparing a long-range cash flow budget as illustrated in Exhibit 11.8.

S U M M A R Y

Excesses and deficiencies of cash can occur in any business. This is particularly true of the cyclical hospitality industry. Therefore, cash management becomes most important.

Net income and cash are not synonymous. An organization may have a net income but no cash available to pay bills. Alternatively, the income statement may show a loss, yet there will be cash available to pay dividends.

To foresee surpluses and shortages of cash, cash budgets for up to a year can be useful. The cash budget converts the budgeted income statements to a cash position. Sales revenue for a particular month is not always received in cash during that month. If some sales are made on a charge basis, that cash may not be received until 30 or more days later. Similarly, expenses recorded on the income statement do not always involve an outlay of cash during that month. Payments can often be deferred. Finally, there are some items of cash revenue (the sale of a fixed asset) or cash outlay (principal payments on a loan) that do not appear on an income statement. These items can be incorporated into the financing section of the cash budget so excess funds can be foreseen and used profitably by, for example, investing and so cash shortages can be forecast and covered by arranging, in advance, for short-term financing.

Cash management involves a process of cash conservation. This simply means that the good manager will control the amount of cash on hand, and in the bank, inventory levels, accounts receivable, and accounts payable so the most liquid cash position of the business can be maintained at all times.

Cash budgets require careful day-to-day observation of the various current asset and liability accounts to maximize the day-to-day cash position of the organization.

Long-range cash flow budgets differ somewhat from day-to-day cash budgets in that they ignore changes in the working capital accounts. Long-term cash flow budgets assume that the net income an enterprise makes will, over the long run, be converted into cash. Long-term cash flow budgets, prepared up to five years ahead, permit management to see whether long-term mortgage and other loan commitments can be met, or whether further mortgages and/or loans need to be arranged. They also allow management to make plans for capital asset purchases and replacements and to plan dividend payment policies.

DISCUSSION QUESTIONS

1. What is the meaning of cash management or cash planning?
2. What two main purposes are served by preparing a cash budget?
3. Why is net income shown on an income statement not necessarily the same as cash?
4. List two items that could appear on a cash budget under the receipts section.
5. List three items that could appear on a cash budget under the disbursements section.
6. List three items that could appear in the financing section of a cash budget.
7. Define the term bank float and explain how it can be used.
8. Explain concentration banking and give the equation for funds transfer frequency when concentration banking is used.

9. What two procedures will help ensure that the total accounts receivable amount is kept to a minimum?
10. Differentiate between city ledger accounts receivable and house accounts receivable in a hotel.
11. What two procedures can be instituted in a hotel to minimize the dollar amount of house accounts?
12. Explain the procedure of aging accounts receivable.
13. Explain how a lockbox is used to minimize funds outstanding in accounts receivable.
14. Discuss the use of marketable securities with reference to temporary surplus cash.
15. Explain why it is important to manage food or beverage inventory turnover.
16. Differentiate between an operating cash budget and a long-term cash flow budget.

ETHICS SITUATION

In reviewing actual cash flows for the past three months and the cash budgets for the next three, a hotel manager notices that the cash sales from the hotel's bar operation have been slowly declining each month. The manager suspects that not all cash sales are being recorded and that bar employees may be pocketing the cash. He has approached a private security firm to have one of its representatives pose as a customer at the bar and observe if his suspicions are in fact true. Discuss the ethics of this situation.

EXERCISES

- E11.1** The following information is available regarding sales revenue for March and April, year 2004: What is the vertical common-sized analysis (percentages) of all items based on sales revenue? Discuss any significant findings.

	<i>March</i>	<i>April</i>
Sales revenue	\$42,484	\$43,200
Cash sales	13,595	12,096
Credit card sales	26,340	29,376
Accounts receivable sales	2,549	1,728

- E11.2** The following information is available regarding sales revenue for March, April, and May, year 2004: Credit card sales are collected on the average of every three days and the amount remaining uncollected at the end of the month represents 8 percent of the month's credit card sales revenue. Accounts receivable sales are collected in the month following the sales. Using the following information regarding sales, calculate the cash inflow for the months of April and May, year 2004.

	<i>March</i>	<i>April</i>	<i>May</i>
Sales revenue	\$42,000	\$44,000	\$44,800
Cash sales [35% of sales]	14,700	15,400	15,680
Credit card sales [60% of sales]	25,200	26,400	26,880
Accounts receivable sales [5% of sales]	2,100	2,200	2,240

- E11.3** A restaurant reported the following information for the months of August, September, and October, year 2005. Of the cost of sales, 75 percent is paid in the current month and the remainder is paid in the following month. Of the operating expenses, 98% is paid in the current month and the remainder in the following month.

	<i>August</i>	<i>September</i>	<i>October</i>
Sales revenue	\$48,000	\$48,880	\$49,300
Cost of sales	(18,240)	(18,574)	(18,734)
Operating expenses	(24,480)	(24,929)	(25,143)
Operating income	<u>\$ 5,280</u>	<u>\$ 5,377</u>	<u>\$ 5,423</u>

Calculate the total cash payments for the months of September and October, Year 2005.

- E11.4** The following is income statement information of a restaurant for the first two months of operation. Of the sales revenue, 80 percent is collected in cash with the remainder collected in the following month. Of cost of sales, 75 percent is paid in the current month and the remainder is paid in the next month. Wages and operating expenses are paid in the month incurred. The January beginning cash balance was \$3,898. Using a cash budget format, calculate the ending cash balance for the month of February.

	<i>January</i>	<i>February</i>
Sales revenue	\$36,600	\$38,300
Cost of sales	(13,908)	(14,556)
Gross margin	\$22,692	\$23,744

	January	February
Wages expense	\$12,444	\$13,022
Other operating expenses	5,294	5,477
Depreciation expense	<u>800</u>	<u>800</u>
Total operating expenses	(18,538)	(19,299)
Operating income	<u>\$ 4,154</u>	<u>\$ 4,445</u>

E11.5 A restaurant has provided the following information regarding its food inventories for the month of March.

Beginning food inventories	\$18,300
Purchases during the current month	72,600
Ending food inventories, current month	12,200

- Calculate the food inventory turnover for the month.
- Calculate the days of inventory available for the month of March.

PROBLEMS

P11.1 You have the following information about a restaurant in year 2005:

Actual sales revenue	October	\$84,000
	November	80,000
Actual purchases (cost of sales)	October	32,000
	November	30,000

Sixty percent of sales revenue is cash; 40 percent is credit. Of the credit revenue, 70 percent is collected in the month following the sale and the remainder in the month after. Twenty percent of purchases are cash. The remaining 80 percent is paid in the month following purchase. The budgeted income statement for December, year 2005, is

Sales revenue		\$75,000
Cost of sales	\$29,000	
Wages expense	21,000	
Operating expenses	14,000	
Rent expense	5,500	
Depreciation expense	<u>2,500</u>	
Total expenses		(72,000)
Operating income		<u>\$ 3,000</u>

The wages and operating expenses included in the income statement will be paid in December, year 2005. Rent was prepaid in January for the entire year. Prepare a cash budget for the month of December, year 2005. Beginning cash on December 1 is \$3,300.

- P11.2** On December 31, 2004, a small motel has a bank balance of \$7,100. On that same date its balance sheet showed that it had a bank loan payable of \$73,900. The motel's budgeted income statement is as follows for 2005:

Sales revenue		\$403,900
Operating costs		(302,300)
		\$101,600
Other expenses:		
Management salary expense	\$23,000	
Building rent expense	18,500	
Insurance expense	2,400	
Interest expense	7,600	
Furniture depreciation expense	<u>9,700</u>	(61,200)
Operating income		\$ 40,400
Income tax		(10,100)
Net income		<u>\$ 30,300</u>

Sales are 70 percent cash and 30 percent credit. Sales for November and December of each year are as follows:

	2004	2005
November	\$32,500	\$33,500
December	\$34,500	\$35,000

The owner pays all expenses at the time they occur in order not to carry any accounts payable. However, the income tax for 2005 income will not be paid until March 2006. However, \$9,800 for 2004 was paid in March 2005.

The motel owner plans to buy new furniture in May 2005 at an estimated cost of \$15,600. By December 31, 2005, the bank loan payable will have been reduced to \$49,200. Calculate the motel's bank balance at December 31, 2005. Collections on credit revenue average 90 percent in the month following the sales and the remaining 10 percent in the month following.

P11.3 You have the following information about a restaurant:

	<i>Budgeted Cash Revenue</i>	<i>Budgeted Credit Revenue</i>
August	\$30,300	\$16,000
September	29,500	14,000
October	27,900	13,000
November	25,100	12,000
December	32,400	15,800

Collections on credit revenue average 90 percent in the month following the sales and the remaining 10 percent in the month following. Cost of sales (purchases) averages 38 percent of total sales revenue. Forty percent of cost of sales is on a cash basis, and 60 percent is paid in the month following purchase. Payroll costs (which are paid on a cash basis) are forecast to be \$13,100 for October; \$12,700 for November; and \$12,200 for December.

Other budgeted expenses according to the forecast income statements follow:

	<i>October</i>	<i>November</i>	<i>December</i>
Rent expense	\$2,500	\$2,500	\$2,500
Insurance expense	300	300	300
Utilities expense	500	450	550
Other operating costs	1,100	900	1,300
Depreciation (equipment)	4,600	4,600	4,600
Interest expense	400	400	400

Note that the rent, utilities, other operating costs, and interest are paid in cash each month as the expense is incurred. The insurance expense is paid in January each year in advance for the whole year (\$3,600). The restaurant financed its equipment and makes monthly payments on the balance owing (principal amount) of \$1,000. In December, the restaurant plans to sell off some old equipment and estimates it will receive \$1,500 from the sale. At the same time, it must spend \$5,400 on new equipment. If there is sufficient cash on hand, the owner plans to pay a bonus to the staff. This bonus will amount to \$3,600 and will be paid in December.

Prepare the restaurant's cash budget for each of the three months: October, November, and December. The beginning cash balance October 1 is \$2,410.

P11.4 You own a new restaurant that is due to open on June 1. The restaurant expects to take in \$1,500 a day in sales revenue and is open seven days

a week. Sales revenue is estimated to be 80 percent cash and 20 percent credit. The payments on credit sales are not expected until the end of the month following the sale.

Labor and food cost combined will be 75 percent of sales revenue. Both these expenses will be on a cash basis.

Other operating costs are estimated to be 10 percent of sales revenue. These costs will not have to be paid until the month following the incurrence of the cost.

Depreciation is \$2,000 a month. Rent is \$600 a month, payable in advance on the first of each month.

Principal payments on a loan you made to get into business are \$3,000 a month. The first payment is due on June 15. Interest expense of \$300 will be paid each month. You have only \$500 cash on hand on June 1. You will not be able to borrow any more money, and you have no income of your own other than the money generated by your new restaurant venture.

- a. Produce the budgeted income statement for the restaurant for the month of June.
- b. Prepare the restaurant's cash budget for the month of June.
- c. Comment about the results shown by these two statements, with particular reference to any possible financial difficulties you might have.

- P11.5** A small hotel provided you with the following information for a three-month period showing, at each month-end, the length of time its accounts receivable were outstanding at that time:

	<i>January</i>	<i>February</i>	<i>March</i>
0–30 days	\$21,100	\$21,500	\$22,100
31–60 days	4,900	7,500	8,500
61–90 days	1,000	900	1,400
over 90 days	500	400	600

During this period, the sales revenue was approximately the same for each of the three months. Carry out any further calculations necessary so that you can then comment about or discuss the results.

- P11.6** A motel chain uses a system of concentration banking. Calculate the transfer frequency for each of the following individual motels:

	<i>Average Bank Balance</i>	<i>Average Daily Deposit</i>
Motel A	\$3,200	\$1,600
Motel B	5,700	1,900
Motel C	6,500	6,500
Model D	2,600	5,800

- P11.7** For each of the following alternatives, calculate the minimum account receivable payment (to the closest dollar) that would make a lockbox system profitable:

	<i>Bank Charge per Item</i>	<i>Opportunity Cost</i>	<i>Days Saved</i>
a.	\$0.20	10%	2
b.	\$0.18	8%	3
c.	\$0.25	8.5%	4

- P11.8** A small motel with a small dining room has prepared the following estimates for the year 2005:

Sales revenue	
Rooms	\$350,000
Dining room	150,000
Labor cost	
Rooms	25% of rooms revenue
Dining room	40% of dining room revenue
Food cost	35% of dining room revenue
Other operating costs	
Rooms	5% of rooms revenue
Dining room	10% of dining room revenue
Other income	\$5,500
Indirect expenses	
Administrative and general	\$25,600
Marketing	15,400
Property operation and maintenance	16,700
Energy costs	12,500
Land rent	28,300
Interest	11,500
Depreciation	
Building	50,200
Furniture and equipment	24,800

In July of 2005, the owner plans to buy \$30,000 of new equipment (for cash), less a \$5,400 trade-in of used equipment.

During 2005, principal payments on a mortgage on the building will be \$30,300, and principal payments on a bank loan will be \$25,300.

The owner, who is also the only shareholder in the company, plans to pay herself dividends of \$40,000 during year 2005.

- Prepare a budgeted income statement for year 2005.
- Calculate the motel's cash flow for year 2005.

P11.9 From the information following for Cato's Catering, prepare a cash budget for six months commencing April 1:

	<i>Sales</i>		<i>Purchases</i>		<i>Other</i>	
	<i>Food</i>	<i>Beverage</i>	<i>Food</i>	<i>Beverage</i>	<i>Wages</i>	<i>Expenses</i>
February	\$30,000	\$ 9,000	\$12,000	\$4,400	\$12,000	\$10,300
March	31,000	9,600	12,500	4,800	12,400	10,400
April	34,000	10,800	13,600	5,400	13,000	10,800
May	35,600	12,600	14,000	6,400	13,800	11,200
June	46,000	13,800	14,600	6,800	15,000	11,600
July	50,000	16,200	16,600	8,200	14,800	11,400
August	45,000	14,200	14,600	7,200	13,400	10,600
September	40,800	13,000	14,200	6,400	12,200	10,200

- Assume that all sales are cash sales.
- The annual interest of \$1,600 on the restaurant's marketable securities will be received in July.
- The time delay in paying suppliers for food and beverage purchases is two months. For example, February purchases are paid in April.
- Wages are paid without any time delay.
- Other expenses are paid with a one-month delay.
- In May, new kitchen equipment will be purchased for \$10,000. Payment for this will be made in the following month.
- The restaurant's cash available on April 1 is \$30,000.

P11.10 A new restaurant was incorporated on January 1, 2005. Forty thousand shares were issued for \$6.00 cash per share. The cash received from the sale of shares was used, in part, as follows:

Construction of building, estimated life 20 years	\$120,000
Kitchen equipment and restaurant furniture, estimated life 10 years	90,000
China, silverware, etc., estimated life 5 years	18,000
Food and beverage inventories	6,000

The remaining cash was deposited in a bank account.

The following estimates were made about the volume of business and operating expenses for the first three months:

a. Sales revenue:

January \$30,200 February \$60,800 March \$90,400

b. Sales revenue will be 55 percent cash and 45 percent credit; maximum credit to be allowed is 30 days.

c. Food cost and liquor cost will average 38 percent of total sales revenue. Forty percent of this cost each month will be cash; the balance will be paid in the month following purchase.

- d. Wages and salaries: the fixed portion of wages will be \$5,200 a month; the variable portion will be 30 percent of any sales revenue in excess of \$25,000 a month. Total wages and salaries is the sum of the fixed and variable portions. Wages and salaries will be paid in the current month.
- e. Other operating costs will be \$3,800 a month to be paid in the month following incurrence of the cost.
- f. Depreciation for building, equipment and furniture, and china and silverware is to be calculated on a straight-line basis. The annual depreciation amount must be prorated monthly to the income statements.

Note that, because of increasing sales revenue, a further cash investment in food and beverage inventories of \$2,000 will have to be made in February, with another increase of \$2,000 in March. This will increase total inventory investment to \$10,000 by the end of March.

Required

1. A budgeted income statement for the three months ending March 31, 2005.
2. A cash budget for each of the first months of 2005.
3. A balance sheet as of March 31, 2005.

P11.11 Stew and Brew have decided to lease a new restaurant. Rent for the building will be \$3,000 a month to be paid on the first day of each month. They initially invested \$225,000 of their own money, which was used in part to purchase:

Furniture and equipment	\$180,000
China, glass, and silverware	25,200
Food inventory	9,000

Use straight-line depreciation over five years for furniture and equipment (no residual value). China, glass, and silverware are to be fully depreciated in year one.

Sales are forecasted as follows for the first three months after opening:

Month 1: \$48,000 Month 2: \$66,000 Month 3: \$84,000

Sales will be 80 percent cash and 20 percent credit with the maximum credit period allowed of 30 days. Food cost of sales is expected to average 30 percent and all purchases will be cash. Wages and salaries will be \$15,000 a month. However, in any month when sales exceed \$60,000, additional staff will have to be hired, and the extra wage cost is estimated to be 20 percent of any excess sales. All salaries and wages will be paid in the month during which they were earned. Other operating costs are expected to be 10 percent of sales and will be paid in the following month. At the end of month 3, Stew and Brew plan

to pay themselves back part of their initial investment. This payment will be from any cash in excess of \$15,000 at that time. In other words, they wish to leave only \$15,000 in the restaurant's cash account at the end of each 3 months operating quarter.

Prepare

- a. A forecasted income statement for each of the three months.
- b. A cash budget for each of the three months.
- c. A condensed balance sheet for the first quarter at the end of month three.

P11.12 Fritz, the owner of the Ritz Cafe, needs an after-tax cash flow of \$27,000 next year. Principal payments on loans are \$42,000 a year, and depreciation is \$21,000. Tax rate for the Ritz Cafe is 25 percent. Fixed costs (including depreciation) are \$55,000, and variable costs are 30 percent of sales.

- a. What level of sales will provide Fritz with his desired cash flow next year?
- b. Prove your answer.

P11.13 Cece Saw, a carpenter who has saved some money, has decided to build and operate, with his wife, a ten-unit highway budget motel. Cece invests \$50,000 of his own money in the company (\$10,000 by way of common stock and \$40,000 as a long-term loan). He also obtained a long-term mortgage on the land and building for \$240,000 at an 8 percent interest rate. Interest is estimated to be \$1,600 per month for the first few months of the new business, and principal payments are expected to be \$1,000 per month.

Land was purchased for \$50,000 cash and \$200,000 of cash was used to construct a building (estimated life of the building is 30 years, no residual value). Furniture and equipment was purchased for \$24,000 (estimated life of the furniture and equipment is 10 years, no residual value). Linen was also purchased with cash for \$6,000, and the owner decided to write off the linen (depreciated, no residual value) over a five-year period. Cece's company also committed advertising costs of \$2,400 for brochures and other items; this cost will be expensed during the first year of business. The first year's insurance premium of \$3,600 was prepaid before the business started.

For the first three months of business, occupancy is forecast to be 60 percent, 65 percent, and 70 percent, respectively, and, in order to build up volume, a low average room rate of \$65 is to be offered. When calculating sales revenue, use a 30-day month. All sales revenue will be on a cash basis.

Since the motel is relatively small, Cece and his wife will run it themselves but expect to hire some casual help at a cash cost of \$400

per month. Cece and his wife will each be paid \$2,500 a month by the company for their services. However, for each of the first six months, they will each only take \$750 cash out of the business for living expenses, until they are sure the company has sufficient cash resources to pay them the balance.

Laundry and supplies are estimated to be 10 percent of monthly revenue. This will be paid in cash. Utility costs are forecast to be \$300, \$325, and \$350 for the first three months of operations, respectively; however, each month utility costs will not be paid until the following month. Office expenses are expected to be \$100 per month in cash.

For each of the first three months of the motel's operation, prepare an income statement and a cash budget. Also, prepare the balance sheet for the end of month three.

CASE 11

In the preceding chapter and case, the compilation of a statement of cash flows was covered.

Using the budgeted income statement for year 2004 (Case 9) and the December 31, 2004, actual balance sheet (Case 2), prepare operating and cash budgets for the first 6 months of year 2005.

Sales revenue are distributed as follows over the first 6 months of year 2004:

<i>Month</i>	<i>Monthly Percentage of Annual Sales Revenue</i>	<i>Food Ending Inventory</i>	<i>Beverage Ending Inventory</i>
January	6.0%	\$6,128	\$2,378
February	6.0	6,352	2,265
March	7.0	6,521	2,155
April	8.0	6,785	2,855
May	9.0	6,985	2,645
June	10.0	7,325	2,595

Sales revenue will be 60 percent cash, 36 percent credit cards, and 4 percent accounts receivable. Within the month of sale, 28 percent of credit card sales are collected while 8 percent are collected in the following month. Accounts receivable sales are collected in the month following the sale.

Fixed expenses will be charged evenly over the 12 months. Food and beverage purchases will be 55 percent cash in the month of the purchase and 45 percent on accounts payable. Accounts payable will be paid in the next month. Accrued expenses payable will be paid in the next month and are for administrative,

general, and marketing expenses. Accrued payroll payable are for Charlie's salary and will be paid in January 2005 in addition to salaries and wages fixed. Charlie expects a bonus of \$5,000 quarterly in the months of March, June, September, and December of 2005.

The annual insurance premium will be paid in January 2005. The loan principal will be paid in twelve equal installments. Years 2004's income tax payable will be paid in two equal installments, one in January and the other in April 2005. All other expenses will be paid in the month they are incurred.