

Growing Concerns



Edited by
David E. Gumpert

How much money does your new venture need?

James McNeill Stancill

Every entrepreneur planning a new venture faces the same dilemma: determining how much money is necessary to start the business. More often than not, entrepreneurs estimate on the low side. They may simply not allow for unexpected expenses and lower-than-predicted sales.

It's impossible to know exactly how much a new business will need during its first five years, but it is possible to come up with realistic estimates. These come from the financial forecast: the income statement, the balance sheet, and, most important, the cash flow statement.

This article shows how to calculate the new venture's capital requirements through such financial forecasting. It also shows how financial forecasting provides the basis for determining equity investments.

Mr. Stancill is professor of finance at the University of Southern California's Graduate School of Business. He is a frequent contributor to the Growing Concerns feature, for which he has written articles on financial issues affecting smaller businesses. They include "Upgrade Your Company's Image—and Valuation" (January-February 1984).

Thanks to various computer spreadsheet programs, calculations associated with even the most detailed forecasting are fairly simple. What used to require days or weeks now takes only minutes or hours. Such programs enable entrepreneurs to use variables and test scenarios in ways that are impractical with conventional push-the-pencil methods. Such split-second calculating tools should not, of course, blind entrepreneurs to the logic of the numerical estimate and the cash flow model.

Beginning the process

Simplicity is a virtue in presenting financial statements. Show items in summary form, but reserve all the details for separate schedules or footnotes attached to the financial statements. And make certain the statements conform with generally accepted format practices; creativity is welcome in many areas of business planning but not in financial statements.

For most manufacturing and many other start-ups, the form of the income statement will be like what you see in *Exhibit 1*. Each item has a

footnote, which is included in "Notes to the financial statements." In these notes, you may refer the reader to another supporting schedule or you may simply explain the item. Each item has a separate footnote number. Having an explanation for each item is the most important aspect of an effective forecast. By explaining each item, you can defuse disputes about what value an item should have. If much uncertainty exists about an item, you can state in the footnote that the estimate is merely a guess but that the general order of magnitude is probably appropriate.

The financial forecast initially requires three estimates of sales for five years: a most likely, a most pessimistic, and a most optimistic estimate. Express this sales forecast in both number of items sold and dollars to account for factors that might affect the selling price. The sales forecasts should, of course, be accompanied by written justification of the sales estimates so that you can begin to project the required financial statements—first the income statement, then the balance sheet, and finally the cash flow statement.

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A pro forma five-year income statement is, of course, only tentative. It is based on the assumption that the proposed output is feasible and that the level of production can be financed.

Before putting together the income statement, the forecaster must project which assets and liabilities will support the forecast sales level. This projection leads to the balance sheet estimate. For most new ventures, the balance sheet form shown in *Exhibit II* is appropriate.

At this preliminary stage, it is important to avoid structuring the balance sheet—and the terms of the financing—by putting in the entire amount of outside investments or loans. Unless the whole proposal is to be syndicated, leave the decision about the allocation of debt and equity to the financiers. Thus the cash account, even if negative, becomes the balancing item on the balance sheet.

Most new ventures should do projections for five years—a monthly forecast for the first two or three years and quarterly or yearly projections for the remaining years. The time period each statement covers should be the same. That is, you shouldn't have monthly income statements and quarterly balance sheets for each period.

The monthly forecasts serve two purposes. First, they act as a form of budget, especially for general, administrative, and sales expenses. Second, they show the effect of quarterly tax payments on cash flow. The need to forecast for five years is dictated by the venture capitalist's desire to determine future earnings so as to arrive at a projected value for the business. This value, in turn, largely determines how much equity the venture capitalist will insist on for the capital investment.

Getting to cost of goods sold

To illustrate the forecasting of capital requirements, I'll use the case of the McDonald Company, which was created to manufacture a water purification unit for maritime and other uses. A colleague and I assumed that the company would start in January of year 1, would not produce any units in the first month, but would then produce 100 units a month in February through April and 300 a month for the next three months. It would then start dropping production in anticipation of seasonally lower sales and make a total of 2,100 units for the first year. The company did enough market research to warrant the sales forecast for the most likely scenario. We assumed a selling price of \$600 per unit, resulting in sales for year 1 of \$1,020,000. We forecast that sales would rise in year 2 to \$3 million and in year 3 to \$3,780,000 and that the

company would grow 25% in years 4 and 5.

After you have made the sales forecast, the next and most important item to estimate is the cost of goods sold. In service and wholesale businesses, making this estimate is not as complicated as in manufacturing. In service and wholesale, pricing and thus sales will probably be a function of labor or cost of materials, and a forecast of sales in units will easily produce a forecast of cost of goods sold.

For a manufacturing venture, simply using a percentage of sales, as you might when the business is reasonably well established, could lead to some serious errors. Unfortunately, the "proper" way is quite laborious and complicated, for it means using a separate forecast model. For the McDonald Company, we did an elaborate cost accounting module for all three scenarios, which turned out to be extraordinarily expensive in terms of time, even though we did it on a computer.

Remembering that the cost of goods sold consists of direct labor, cost of materials, and factory overhead, we handled the cost accounting model in the following way. Starting with a section on volume data, we forecast unit sales. Next, we made a decision on production, which began two months before sales were to commence. (This decision led to an ending inventory total that rose and fell as monthly sales went up and down.) In general, average wage rates and the time needed to assemble a unit were fairly easy to forecast.

Other components of the cost accounting model were raw materials, inventory, work-in-process inventory, finished-goods inventory, total inventory, factory overhead, work-in-process flow in units, and weighted-average cost per unit.

In some cases, estimating cost of goods sold as a percentage of sales, albeit a declining percentage, may be sufficient for the purpose at hand, particularly if you consider all the other variables. For example, after we made the cost accounting model for the McDonald Company, we calculated the cost of goods sold as a percentage of sales. Beginning at 53%, the percentage declined to about 40%. If it were possible to estimate the ratio of cost of goods sold to sales for, say, six-month intervals, the results would be approximately the same as what we got through the

Exhibit I Sample income statement

| | |
|---|---------------|
| Sales ¹ | \$ XXX |
| Less cost of goods sold ² | XXX |
| Gross profit margin | XXX |
| Less general and administrative expenses ³ | XXX |
| Less selling expenses ⁴ | XXX |
| Operating income or loss | XXX |
| Less interest expense | XXX |
| Income before taxes | XXX |
| Less income taxes ⁵ | XXX |
| Net income or loss | \$ XXX |

modeling. But for the shortcut approach, remember to have the necessary facts on hand to support the assumed percentages, such as efficiency of assembly, declining cost of raw materials because of increasing purchases, and spreading the factory overhead over the growing number of units purchased.

Key expenses

Estimate the depreciation expenses that are assumed to be included in the cost of goods sold so that this amount can be removed when you are compiling the cash flow statement. (To calculate taxable profit or loss, you must include the depreciation expense in the income statement; you can show it as a separate item.)

General and administrative expense (G&A) is the next income statement item to forecast. Since sales are increasing over the five-year planning horizon and G&A is mostly fixed, estimating this item as a percentage of sales is inappropriate. Instead, you must forecast a detailed schedule for all the items. Although the income statement shows only the total G&A expense, a footnote can refer the reader to the detailed schedule of G&A expenses.

The list of items in *Exhibit III* is representative of what might be

Exhibit II Sample balance sheet

| Assets | | Liabilities | |
|---|---------------|---|---------------|
| Cash | \$ XXX | Accounts payable ¹¹ | \$ XXX |
| Accounts receivable ⁶ | XXX | Accrued taxes ⁵ | XXX |
| Inventory ⁷ | XXX | Accrued expenses ¹² | XXX |
| Other assets (prepaids) ⁸ | XXX | Current portion of long-term debt | XXX |
| Total current assets | \$ XXX | Total current liabilities | \$ XXX |
| Plant, property, and equipment at cost ⁹ | \$ XXX | Long-term equipment loans ¹³ | \$ XXX |
| Less reserve for depreciation ¹⁰ | XXX | Equity | XXX |
| Net plant, property, and equipment | XXX | Retained earnings or loss | XXX |
| Total assets | \$ XXX | Total liabilities and capital | \$ XXX |

included. One item deserves special attention: officers' salaries. While entrepreneurs go into business to make lots of money, seeking one's fortune in a struggling new venture is foolish. Even if the entrepreneur is providing all the necessary start-up funds, the wisdom of taking a salary comparable to what might be expected in a more mature company is questionable, to say the least. Investors do not, however, expect the entrepreneur to live on a clerk's salary. Perhaps the best advice is to start off rather low and increase the salary as profits permit. McDonald assumed it would hire a second officer after the first year, so the total was the product of two, and later more, officers' salaries.

McDonald's other G&A expenses included such calculations as payroll taxes, predetermined items like rent and insurance, and items to be negotiated, such as lobbying in the state capital. Some items were mere guesses (nonsales travel and telephone), and some catchall attempts (start-up costs).

Selling expenses can be treated the same as G&A. A company needs to develop a detailed schedule (see *Exhibit IV* for an example) to include the items relevant to the business at hand. For McDonald Company, we included salaries for two salespeople for the first month, three for the second, and four for the fourth month on through the rest of the first year.

Travel expenses for the salespersons were estimated to be equal to salaries after the first few months. Interest expense on the equipment loan for the McDonald Company was \$2,333 for the first month and declined thereafter as principal was paid.

The only other forecast item on the income statement is taxes. At first, there are no taxes, but even with the tax loss carryforward (forward for 15 years, back for 3), taxes have to be included for the second year. Include state income taxes, if any, and use the percentage to be applied to net profit before tax. Estimating state income taxes is quite simple; the complication comes in forecasting the accrued taxes for the balance sheet. Once the income forecast is complete, you can turn to the balance sheet.

Completing the balance sheet

Keep the balance sheet as simple as you did the income statement. The first item on the balance sheet—cash—is the balancing item and is thus not forecast separately. Instead, it results from the computation of the cash flow statement.

Accounts receivable may be forecast in two ways, each yielding dif-

Notes to the financial statements

- The sales forecasts shown here are based on market research, details of which are provided separately.
- See the separate cost accounting module for details of how the cost of goods was arrived at (which for the sake of brevity is not shown in this article).
- See *Exhibit III*.
- See *Exhibit V*.
- This includes federal and corporate income taxes.
- See *Exhibit V* for the aging schedule.
- For details of the finished-goods inventory, see *Exhibit VII*.
- For the changes in prepaid assets, see separate schedule (not shown in this article).
- See separate schedule (not shown in this article).
- Generally, straight-line depreciation was used for equipment.
- See separate schedule for details of changes in accounts payable (not shown in this article).
- See separate schedule for details of changes in accrued expenses (not shown in this article).
- The face amount of the loans is \$140,000, payable in monthly installments of \$5,203 for 36 months at an interest rate of 15%.

ferent results. The more complicated way is to estimate what percentage of this month's sales the company will collect this month (for the McDonald Company, we assumed 5%), what percentage for the next month (we assumed 50%), and what percentage for the following two months (we assumed 30% and 15%). A separate schedule is necessary (for example, see McDonald's in *Exhibit V*).

The standard way of forecasting accounts receivable is to use a turnover ratio (equal to monthly sales times 12 divided by the turnover figure—for example, 9). Because of the seasonality of sales, you would get dramatically different accounts receivable balances if you applied a constant turnover to each month.

In the first year for McDonald, the turnovers would have been what you see in *Exhibit VI*, Part A.

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Exhibit III
Breakdown of general and administrative expenses for the McDonald Company

| | JAN YEAR 1 | FEB YEAR 1 | MAR YEAR 1 | APR YEAR 1 | MAY YEAR 1 | JUN YEAR 1 | JUL YEAR 1 |
|----------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| G & A expenses: | | | | | | | |
| Consultant fees | \$2,000 | \$2,000 | \$2,000 | \$2,000 | \$2,000 | \$2,000 | |
| Depreciation | 400 | 400 | 400 | 400 | 400 | 400 | |
| Insurance | 200 | 200 | 200 | 200 | 200 | 200 | |
| Legal & acct. | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Govt. lobbying | 3,000 | 3,000 | 3,500 | 500 | 500 | 500 | 500 |
| Office supplies | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 200 |
| Payroll taxes | 840 | 1,060 | 1,260 | 1,260 | 1,260 | 1,260 | 1,380 |
| Rent | 400 | 400 | 400 | 400 | 400 | 400 | |
| Office salaries | 1,800 | 1,800 | 1,800 | 1,800 | 1,800 | 1,800 | |
| Officer salaries | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| Telephone | 800 | 800 | 800 | 1,200 | 1,200 | 1,200 | 1,500 |
| Non-sales travel | 2,000 | 2,000 | 2,000 | 2,000 | 1,400 | 1,400 | 1,000 |
| Utilities | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Start-up expense | 12,000 | 3,000 | 8,000 | 0 | 0 | 0 | 0 |
| Bad debts | 0 | 0 | 0 | 1,800 | 5,400 | 5,400 | |
| | <u>\$28,040</u> | <u>\$19,260</u> | <u>\$24,960</u> | <u>\$16,160</u> | <u>\$19,160</u> | <u>\$19,160</u> | <u>\$19,580</u> |

Exhibit IV
Details of selling expenses for the McDonald Company—most likely case

| | JAN YEAR 1 | FEB YEAR 1 | MAR YEAR 1 | APR YEAR 1 | MAY YEAR 1 | JUN YEAR 1 | JUL YEAR 1 |
|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Selling expenses: | | | | | | | |
| Advertising | \$6,000 | \$6,000 | \$8,000 | \$4,000 | \$4,000 | \$4,000 | \$4,000 |
| Travel | 3,600 | 5,800 | 7,200 | 7,200 | 7,200 | 7,200 | 7,200 |
| Salaries | 3,600 | 5,800 | 7,800 | 7,800 | 7,800 | 7,800 | 7,800 |
| Promo supplies | 0 | 0 | 10,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Commissions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | <u>\$13,200</u> | <u>\$17,600</u> | <u>\$33,000</u> | <u>\$20,000</u> | <u>\$20,000</u> | <u>\$20,000</u> | <u>\$20,000</u> |

These turnovers make clear that the first procedure is advisable for monthly cash flow forecasting for a new venture, especially if sales are seasonal.

Inventory presents a more difficult problem than accounts receivable. Because of the pronounced seasonality in production and sales, using a constant turnover for cost of goods sold is not possible. For example, the inventory turnovers for the McDonald Company for the first year were as shown in *Exhibit VI, Part B*.

While the balance sheet shows inventory as one line, three types of inventory are actually on hand at any one time: raw material, work in process, and finished goods. If you are using a cost accounting model, each month will produce these three totals. But because of the complexity of this model, you may wish to estimate (perhaps *guess* is the better term) what each of these inventory components

will be, total them for each month, and use that number as the amount for inventory for the balance sheet. In the case of McDonald, we estimated unit production for the first year to be as shown in *Exhibit VII*.

By estimating the average cost of each finished unit, you can approximate the finished-goods component of inventory. With an eye to the production schedule, you can estimate how much raw material you will require. By spreading this raw material over the other months, you can get a crude estimate of the raw material component. You estimate work in process by examining the production schedule and assuming an average cost for the units, say, when they are half completed.

Totaling these admittedly crude estimates (as in *Exhibit VIII*) reveals a surprisingly close approximation of the needed inventory level required.

Other assets, which for a new venture include principally pre-paid expenses, should be itemized and priced on a separate schedule and the total shown on the balance sheet. Do not show these items as a turnover or a percentage of sales.

Plant, property, and equipment must also be individually budgeted and not shown as a percentage of sales. If the vendor of the equipment or a third party offers financing, show it in the liabilities section of the balance sheet.

For the McDonald Company, the accounts payable amount included all raw material purchases except for the initial one and assumed payment in the following month. These purchases further assumed, of course, that once under way the business could get credit. For other companies, accounts payable might include items in addition to raw material purchases. For the McDonald Company, we put those items in a separate account—accrued expenses (not shown on the sample cash flow statement). For the accounts payable forecast, we simply let the raw materials purchased lag one month.

Accrued expenses for the McDonald Company included prepaid, selling, and G&A expenses less insurance, depreciation, and bad debts. We assumed most of these expenses would be paid in the following month and let them lag one month for balance sheet purposes. Payroll taxes we assumed would be paid quarterly.

Accrued taxes are the result of applying the tax rules to the income statement item for taxes. Taxes are payable on the fifteenth day of the fourth, sixth, ninth, and twelfth months, and estimates can be based on the prior year's taxes or the current year's earnings. (We used the prior year's for McDonald.)

How do you best handle the delicate problem of distinguishing between long-term debt and equity? My preference is to include in long-term debt only what I call bring-along financing—that is, financing that is offered almost as a matter of course on such purchases as equipment. (Real estate, too, might involve such financing, but buying land and buildings at the start of a new venture would be a strange use of precious funds. It's better to rent or lease until the business is well established.)

Exhibit V
Details of the calculation of the McDonald Company's accounts receivable balance for each month

Change in A/R:

| | JAN YEAR 1 | FEB YEAR 1 | MAR YEAR 1 | APR YEAR 1 | MAY YEAR 1 | JUN YEAR 1 |
|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Beginning A/R | 50 | 50 | 50 | 50 | 55,290 | 192,060 |
| Add sales (debits) | 0 | 0 | 0 | 58,200 | 174,600 | 174,600 |
| Subtotal | 0 | 0 | 0 | 58,200 | 229,890 | 366,660 |
| Collections: | | | | | | |
| This month's sales | 0 | 0 | 0 | 2,910 | 8,730 | 8,730 |
| 1 month ago | | 0 | 0 | 0 | 29,100 | 87,300 |
| 2 months ago | | | 0 | 0 | 0 | 17,460 |
| 3 months ago | | | | 0 | 0 | 0 |
| Total collections | 0 | 0 | 0 | 2,910 | 37,830 | 113,490 |
| Ending A/R | 0 | 0 | 0 | 55,290 | 192,060 | 253,170 |
| Change in A/R | 50 | 50 | 50 | 55,290 | 136,770 | 61,110 |

<-- Assumes net of bad debts.

Collections based on the following percentages:

<-- 5%
 <-- 50%
 <-- 30%
 <-- 15%

Representative collection figures assumed for years 4 and 5.

Exhibit VI
Turnover at the McDonald Company

Part A Turnover of accounts receivable

| | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|----------|-------|-------|------|------|------|------|-------|-------|
| Turnover | 39.1% | 11.3% | 8.5% | 5.3% | 1.7% | 6.8% | 12.6% | 12.7% |

Part B Turnover of inventory

| | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|----------|------|------|------|------|------|------|------|------|
| Turnover | 3.6% | 3.0% | 3.7% | 3.0% | 0.1% | 1.0% | 1.6% | 1.1% |

Structuring the debt-equity ratio of a new venture is quite acceptable if you are underwriting or syndicating the venture yourself. But if you have to go to one or two venture capital sources for the bulk of the financing, you will probably want to leave that decision to your outside investors. (I once lost the financing for a start-up venture when the institution took exception to my "structuring" of the deal. It thought the debt-equity issue was its prerogative and rejected the deal rather than hassle over the matter.) Interest and principal payments will throw off the cash flow forecast, but you can correct this imbalance later.

In this model, the object is to forecast how much money will be needed to capitalize the venture. To avoid anticipating the decision of potential financiers, it's best not to consider how much of this to invest via debt instruments and how much by equity—com-

mon or preferred stock. When that decision is made and the capitalization known, the forecast can be revised to include this decision. An overdraft in the cash account can replace the required long-term debt and equity, at least initially.

At last: the cash flow statement

Once you have completed the income statement and the balance sheet forecasts, you have the ingredients for the cash flow statement. Essentially a combination of the income statement and the balance sheet, it shows the changes that will occur in the cash balance.

Before considering the items on the cash flow statement, I must

point out that for income statement items, the actual dollar amount is shown for the period in question. For example, if net sales for one month were \$300,000, the amount would appear on the cash flow statement for that month. (See *Exhibit IX* for a sample cash flow statement.)

For balance sheet items, however, it is the period-to-period change that should be included in the cash flow statement, and whether the change is added or subtracted is indicated by the symbol $+\Delta$ or $-\Delta$, which should be read "plus a positive change" or "minus a positive change." Of course, if the change is negative and the symbol is $-\Delta$, then algebraically this would be minus a minus, so the amount should be added.

The cash flow statement has seven parts. The first three deal with the basic operations of the company. Part one, net operating cash inflow, includes sales from the income statement minus a positive change in accounts receivable.

Later, after the venture is reasonably well established, you may want to pledge receivables and/or inventory as collateral for a working capital loan from a bank. In that case, you would add, under $-\Delta$ accounts receivable or $+\Delta$ bank borrowing, the increase or decrease in the loan amount. Including this item in this section, even though it is a financial rather than an operating matter, prevents the net operating cash flow (NOCF) from being negative much of the time.

Exhibit VII **Calculation of finished-goods inventory for the McDonald Company**

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------------------------------|-----|-----|-----|-----|-----|-----|-------|-------|-------|-------|-------|-------|
| Number of units manufactured | 0 | 100 | 100 | 100 | 300 | 300 | 300 | 200 | 100 | 200 | 200 | 200 |
| Cumulative units manufactured | 0 | 100 | 200 | 300 | 600 | 900 | 1,200 | 1,400 | 1,500 | 1,700 | 1,900 | 2,100 |
| Less cumulative units sold | 0 | 0 | 0 | 100 | 400 | 700 | 1,000 | 1,200 | 1,250 | 1,350 | 1,500 | 1,700 |
| Finished-goods inventory | 0 | 100 | 200 | 200 | 200 | 200 | 200 | 200 | 250 | 350 | 400 | 400 |

Exhibit VIII **McDonald Company's crudely estimated end-of-month inventory versus actual inventory in thousands of dollars**

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Raw material | \$ 198 | \$ 100 | \$ 154 | \$ 150 | \$ 140 | \$ 132 | \$ 120 | \$ 110 | \$ 132 | \$ 120 | \$ 110 | \$ 330 |
| Work in process | 25 | 25 | 25 | 75 | 75 | 75 | 50 | 25 | 50 | 50 | 50 | 125 |
| Finished goods | 0 | 32 | 63 | 95 | 158 | 158 | 158 | 126 | 95 | 142 | 173 | 189 |
| Estimated | \$ 223 | \$ 157 | \$ 242 | \$ 320 | \$ 373 | \$ 365 | \$ 328 | \$ 261 | \$ 277 | \$ 312 | \$ 333 | \$ 644 |
| Actual | \$ 208 | \$ 219 | \$ 283 | \$ 378 | \$ 310 | \$ 375 | \$ 300 | \$ 248 | \$ 383 | \$ 370 | \$ 341 | \$ 652 |

It's true that if you start out using a receivables-based credit line, you will need less venture capital to start the business. But this type of financing may make it impossible to obtain extra financing later because the company will have no collateral left to offer. It's best instead to leave receivables-based financing as a contingency financing source in case it's really needed.

Even worse would be factoring, which is the sale of the receivable. I first formed this opinion in the course of assisting with the start-up of an ophthalmic laboratory. The entrepreneur's lawyer did his best to convince us that we should sell the receivables to the company for which he was counsel. We resisted, and well we did, for when the venture got into trouble, it was able to use the receivables as another source of capital.

The second part of the cash flow statement, total operating cash outflows, includes cost of goods sold (excluding depreciation), G&A expenses, selling expenses, and taxes

from the income statement. Next comes minus a positive change in accrued taxes, plus a positive change in inventory and prepaid expenses, and $-\Delta$ accounts payable. Subtract this second item, total operating cash outflows, from the first, net operating cash inflows, and the result is net operating cash flow. NOCF pinpoints how much cash was generated from the basic operations of the company. This is cash with which to grow the company.

The first use of NOCF is to pay the priority outflows, which consist of interest expense and debt repayment. Here you would also include a large lease payment—say for the premises the company occupies—in lieu of a mortgage payment. (Small lease payments go under cost of goods sold, G&A expense, or selling expense.)

The next section, discretionary outflows, includes a ranking of four discretionary expenditures. For example, in certain businesses—toys, for example—advertising expenses might be as much as or more than R&D or capital expenditures in other businesses.

Even the sequence can be different. Use whatever sequence fits your business.

If you're planning to buy equipment and have the manufacturer or other third party finance a portion of the price, you would, looking at Exhibit IX, record the transaction as follows: you would show the total price of the equipment in the "start" column for capital expenditures, the amount of the note in the start column as a debt instrument in the financial flows section, and periodic payments in their respective time period columns as priority outflow—interest expense and debt repayment.

In the initial financial cash flow forecast for the new venture, I suggest that no entry be made in the financial flows section except the bring-along financing I referred to previously.

The punch line of the cash flow statement is part seven, net change in cash and marketable securities. This is defined as part three (NOCF) minus part four (total priority

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Exhibit IX Sample cash flow statement

| Cash flow statement for the period _____ to _____ | | Month | | | |
|--|---|-------|----|----|----|
| Operating cash inflows | + Net sales | \$ | \$ | \$ | \$ |
| | + Other income | | | | |
| | - Δ Accounts receivable | | | | |
| | 1 Net operating cash inflows | \$ | \$ | \$ | \$ |
| Operating cash outflows | + Cost of goods sold less depreciation | \$ | \$ | \$ | \$ |
| | + General and administrative expenses | | | | |
| | + Selling expenses | | | | |
| | + Taxes | | | | |
| | - Δ Accrued taxes | | | | |
| | + Δ Inventory | | | | |
| | + Δ Prepaid expenses | | | | |
| | - Δ Accounts payable | | | | |
| | 2 Total operating cash outflows | \$ | \$ | \$ | \$ |
| | 3 Net operating cash flow (Item 1 less item 2) | \$ | \$ | \$ | \$ |
| Priority outflows | + Interest expenses | \$ | \$ | \$ | \$ |
| | + Current debt repayable | | | | |
| | + Lease payments (not included above) | | | | |
| | 4 Total priority outflows | \$ | \$ | \$ | \$ |
| Discretionary outflows | + Capital expenditures | \$ | \$ | \$ | \$ |
| | + Research and development expenses | | | | |
| | + Preferred stock dividends | | | | |
| | + Common stock dividends | | | | |
| 5 Total discretionary outflows | \$ | \$ | \$ | \$ | |
| Financial flows | + Δ Debt instruments (borrowings) | \$ | \$ | \$ | \$ |
| | + Δ Stock securities (equity) | | | | |
| | + Δ Term loans | | | | |
| 6 Total financial flows | \$ | \$ | \$ | \$ | |
| Net change in cash and marketable securities accounts | + Net operating cash flow (item 3) | \$ | \$ | \$ | \$ |
| | - Priority outflows (item 4) | | | | |
| | - Discretionary outflows (item 5) | | | | |
| | + Financial flows (item 6) | | | | |
| 7 Net change in cash and marketable securities | \$ | \$ | \$ | \$ | |
| End-of-period cash balance | \$ | \$ | \$ | \$ | |

Δ = Period-to-period change in total dollar amount.

outflows) minus part five (total discretionary outflows) plus or minus part six (total financial flows). For convenience, the end-of-period cash balance (the same as the balance sheet amount) is shown at the very bottom of the cash flow statement.

Since cash is the balancing item in the financial forecast, part seven would normally be negative for at least the first few months. This information helps answer the question on every entrepreneur's mind.

How much cash is needed?

The cash flow projection gives a reasonable estimate of the amount of cash needed to start the venture.

If net change in cash is -\$57,833 in a month (as it was in February of year 1 for the McDonald Company), the business would have zero dollars at the end of the month if it started that month with \$57,833 in its cash (checking) account. Not all monthly changes are negative, but if we algebraically add these changes to net change in cash, a running cash balance emerges for the end of the month.

Exhibit X shows a portion of the most likely scenario for the first two years of the cash flow statement for the McDonald Company. This projected negative cash balance keeps increasing until it reaches a maximum decrease in January of year 2 of -\$846,063. From this time on, the cumulative cash balance rises, becomes a positive balance briefly in December of year 2, and falls back to a negative number for several more months until June of year 3, when it becomes positive consistently. This means that the company needs \$846,063 in its bank account at the start to finance the most likely scenario of the financial forecast.

But what if the company does not meet these forecasts exactly? Surely it won't!

The solution is to forecast two other scenarios—a most pessimistic and a most optimistic situation. These forecasts are not as much trouble as they may seem, since a number of items are the same for all these scenarios.

Exhibit X Cash flow statement for the McDonald Company

| | JAN YEAR 1 | FEB YEAR 1 | MAR YEAR 1 | APR YEAR 1 | MAY YEAR 1 | JUN YEAR 1 | JUL YEAR 1 | AUG YEAR 1 | SEP YEAR 1 | OCT YEAR 1 |
|---|--------------------|-------------------|-------------------|--------------------|-------------------|-----------------|-------------------|------------------|-----------------|--------------------|
| OPERATING CASH INFLOWS: | | | | | | | | | | |
| + Net sales | \$0 | \$0 | \$0 | \$60,000 | \$180,000 | \$180,000 | \$180,000 | \$120,000 | \$30,000 | \$60,000 |
| - Change in A/R | 0 | 0 | 0 | 55,290 | 136,770 | 61,110 | 17,460 | (55,290) | (109,125) | (20,370) |
| (1) NET OPERATING CASH INFLOWS | 0 | 0 | 0 | 4,710 | 43,230 | 118,890 | 162,540 | 175,290 | 139,125 | 80,370 |
| OPERATING CASH OUTFLOWS: | | | | | | | | | | |
| + COGS (less depreciation) | 0 | 0 | 0 | 32,013 | 94,165 | 93,227 | 93,077 | 62,498 | 15,629 | 31,245 |
| + G & A expense (less depreciation) | 27,640 | 18,860 | 24,560 | 15,760 | 18,760 | 18,760 | 19,180 | 17,380 | 14,680 | 15,580 |
| + Selling expenses | 13,200 | 17,600 | 33,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 |
| + Taxes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| - Change in accrued taxes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| + Change in inventory | 208,430 | 10,430 | 164,430 | (5,723) | (67,875) | 65,063 | (74,717) | (52,068) | 134,731 | (12,885) |
| + Change in prepaid expenses | 2,200 | (200) | (200) | (200) | (200) | (200) | (200) | (200) | (200) | (200) |
| - Change in A/P | 43,040 | (5,940) | 173,000 | (176,340) | 660 | 129,480 | (130,320) | 1,380 | 129,240 | (130,620) |
| (2) NET OPERATING CASH OUTFLOWS | 208,430 | 52,630 | 48,730 | 238,190 | 64,190 | 67,370 | 187,660 | 46,230 | 55,600 | 184,360 |
| (3) NET OPERATING CASH FLOW | (208,430) | (52,630) | (48,790) | (233,480) | (20,960) | 51,520 | (25,120) | 129,060 | 83,525 | (103,990) |
| PRIORITY OUTFLOWS: | | | | | | | | | | |
| + Interest expenses | 2,333 | 2,286 | 2,237 | 2,187 | 2,137 | 2,086 | 2,034 | 1,981 | 1,928 | 1,873 |
| + Current debt repayable | 2,870 | 2,917 | 2,966 | 3,015 | 3,066 | 3,117 | 3,169 | 3,222 | 3,275 | 3,330 |
| (4) TOTAL PRIORITY OUTFLOWS | 5,203 | 5,203 | 5,203 | 5,202 | 5,203 | 5,203 | 5,203 | 5,203 | 5,203 | 5,203 |
| DISCRETIONARY OUTFLOWS: | | | | | | | | | | |
| + Capital expenditures | 200,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (5) TOTAL DISCRETIONARY OUTFLOWS | 200,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FINANCIAL FLOWS: | | | | | | | | | | |
| + Debt instruments (borrowings) | 140,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (6) TOTAL FINANCIAL FLOWS | 140,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NET CHANGE IN CASH AND MARKETABLE SECURITIES: | | | | | | | | | | |
| + Net operating cash flow (item 3) | (208,430) | (52,630) | (48,790) | (233,480) | (20,960) | 51,520 | (25,120) | 129,060 | 83,525 | (103,990) |
| - Priority outflows (item 4) | 5,203 | 5,203 | 5,203 | 5,202 | 5,203 | 5,203 | 5,203 | 5,203 | 5,203 | 5,203 |
| - Discretionary outflows (item 5) | 200,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| + Financial flows (item 6) | 140,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (7) NET CHANGE IN CASH AND MARKETABLE SECURITIES | (\$273,633) | (\$57,833) | (\$53,993) | (\$238,682) | (\$26,163) | \$46,317 | (\$30,323) | \$123,857 | \$78,322 | (\$109,193) |
| Projected ending cash balance | (\$273,633) | (\$331,466) | (\$385,459) | (\$624,141) | (\$650,304) | (\$603,987) | (\$634,310) | (\$510,453) | (\$432,131) | (\$541,324) |

*Maximum negative cash balance.

While these forecasts are not shown here, we did them for the McDonald Company and noted the largest decrease in the cash balance for each scenario. For the most optimistic scenario, the maximum negative cash balance was \$1,052,289 (occurring in April of year 2). For the most pessimistic scenario, the comparable number for the first two years was \$859,756 (occurring in April of year 2). It's not really surprising that the most optimistic scenario required more cash than the most pessimistic, as generating more sales meant heightening working capital requirements, especially accounts receivable and inventory.

If you take the larger difference between the maximum negative cash balance for the most likely scenario and either the most optimistic or the most pessimistic situation, you get an estimate of our contingency factor. In this case, the most pessimistic is only \$13,693 more than the most likely scenario number, but the difference for the most optimistic projection is \$194,846.

Surely, if you listed the capital required as \$846,063 plus a contingency reserve of \$194,846, your figures would have specious accuracy, which would not speak well for the forecaster. So round off the numbers and state that the business needs capital of \$850,000

plus a contingency amount of \$200,000, or a total of \$1,050,000.

What if the entrepreneurs perceive that their track record will not support a request for the amount needed to finance the venture? They can go back to the income statement and balance sheet and make adjustments that might save money. Perhaps scaling back the sales forecast even more than the most pessimistic estimate might help. A company could save on working capital or buy used machinery instead of new or could subcontract production until the business was healthy. Whatever the alternatives, you can use the same model.

(This is the response the first start-up venture on which I worked got. As a result, I formed my first law of entrepreneurship: if you want to fly to financial paradise, have enough gas to make the trip, as there are no service stations along the way!)

If the business attempts to raise venture capital once it has started and before it gets to a positive cash flow position (ready for second-stage financing), all it will have to show is a trail of red ink on its financial statements. True, the new business does not need all the required cash on day 1, but the cash should be available when needed.

One way to ensure that funds will be available is to arrange with a bank for a letter of credit. Then, if the venture capitalist source is temporarily short of funds, the bank can advance you the funds based on the venture capitalist's credit.

The process for determining the capital requirements for a new venture really isn't mysterious, only a bit complicated. The key to this determination (and to financial forecasting in general) is the cash flow statement. A two-step financial forecast is advisable, one to summarize the data and two to support the data with details in footnotes and schedules.

The cash flow statement is at the heart of the answer to the question, How much cash is needed to finance the venture? The negative cash balance line on the most likely scenario provides an estimate of the required venture capital. You can calculate the contingency amount of venture capital by comparing the maximum decreases in cash balance for the other two scenarios. ☐

| NOV YEAR 1 | DEC YEAR 1 | JAN YEAR 2 | FEB YEAR 2 | MAR YEAR 2 |
|---------------|---------------|---------------|---------------|---------------|
| 690,000 | \$120,000 | \$180,000 | \$300,000 | \$420,000 |
| 27,645 | 45,105 | 74,460 | 143,085 | 173,640 |
| 62,355 | 74,895 | 105,540 | 156,915 | 246,360 |
| 46,845 | 62,074 | 92,284 | 153,179 | 213,731 |
| 16,480 | 17,380 | 29,610 | 32,010 | 34,410 |
| 20,000 | 20,000 | 41,000 | 43,400 | 45,800 |
| 0 | 0 | 9,302 | 27,426 | 49,309 |
| 0 | 0 | 9,302 | 27,426 | 49,309 |
| (28,485) | 310,076 | (50,134) | (111,029) | 188,349 |
| (200) | (200) | 2,750 | (250) | (250) |
| 1,380 | 327,240 | (292,440) | 1,960 | 349,280 |
| 53,260 | 82,090 | 407,950 | 115,350 | 132,760 |
| 9,095 | (7,195) | (302,410) | 41,565 | 113,600 |
| 1,818 | 1,761 | 1,704 | 1,645 | 1,586 |
| 3,385 | 3,442 | 3,499 | 3,557 | 3,617 |
| 5,203 | 5,203 | 5,203 | 5,202 | 5,203 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 9,095 | (7,195) | (302,410) | 41,565 | 113,600 |
| 5,203 | 5,203 | 5,203 | 5,202 | 5,203 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 63,892 | (612,398) | (6307,613) | 636,363 | \$108,397 |
| (6537,432) | (6549,830) | (6857,443)* | (6821,080) | (6712,683) |

Now a potential venture capitalist might examine these forecasts and say, "Fine, but you don't need all this money now, at the start. Let's put up some of the required capital, and when you need the rest, ask for it."

Such a directive can be the kiss of death for a new venture because when the entrepreneur calls for more money, the venture capitalist can well say, "Sorry, but my funds are tied up right now. You'll have to wait awhile."

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