Forecasting: The Importance of a Financial Model

Many companies develop an annual budget based on their Profit and Loss Statement for the coming year. While this provides a good picture of expected revenue and expenses, it does not adequately reflect the pace of cash flowing through the business. Business management requires a full financial model in order to predict the pace of cash which allows decisions to be made such as capital expenditures or debt repayment. This paper discusses the purpose of a financial model and outlines the steps to develop one for your company through a case study of Uncle Bob’s Wholesale Widget Shop.

What is a Financial Model?
A financial model is a tool used by management and business owners to predict and assess a company’s future financial condition based on a set of assumptions. A model operates by taking a company’s historical financial trends (income statement, balance sheet and cash flow), and assessing patterns in certain aspects of the business and then using those trends to predict what the financial results will be based on those assumptions. For example, when revenues increases, how might this affect a company's accounts receivable, inventory, or cash levels?

Financial trends tend to vary by business and industry. However, these patterns can be applied to a forecast based on a set of assumptions provided by management. It is important to acknowledge the fact that these assumptions can be changed or manipulated at any time, as compared to a budget which remains static. This is what makes a financial model so useful and important to the management decision making process.

What is the Purpose of a Financial Model?
Generally speaking, a company’s financial model serves the following uses:

- It will help determine realistic market potential.
- It will help show owner/investors a timeline and path to positive cash flow and profitability.
- It will help quantify the amount of investment required to get the company off the ground or through the next phase of growth.
- It will help facilitate a valuation of a business in a transaction.

Particularly for early-stage and young companies, financial models help visualize and quantify how viable a business might be for investors or a lender. As an investor, it is critical to know exactly how your money will be spent and when you can expect a return on your investment. Business owners should also understand these implications for their investment. Too many times capital or debt will be acquired, particularly from credit cards or friends/family, without doing this analysis.

In addition, the amortization of debt can also be modeled out over time and the effects of repayment seen on cash flow. This is extremely useful for lenders such as banks and or family/friends who want to see how much risk their money will face in a company and the
potential repayment period. A financial model would visualize and quantify how a company’s revenue and cash flow seasonality might affect liquidity and, ultimately, repayment of a loan. For example, if a company’s business model is such that liquidity is tight in the summer months, due to when its products are less in demand (like snow shovels), a model will help business owners identify when it might be necessary to borrow on the line of credit or the lender identify when risk is highest.

Generally speaking, a budget only takes into account income and expenses for a future timeframe. A full financial model will include not only an income statement, but a balance sheet and cash flow forecast as well. In order to have a full understanding of your company’s financial condition, you need to look at more than just how much money you will make. Rather, you need to take into account how your profit or loss will affect your balance sheet accounts. What if your revenue goes up – how will it affect your assets over time? Will you need to purchase more equipment? How might your finances respond to new debt or equity? These questions aren’t factored in if you are only looking at the Profit and Loss Statement.

Model Building Tips
In building a model in Excel we encourage that the proforma statements be put on one spreadsheet in line with the assumptions. This allows for easy adjustments. Other sub-schedules such as staffing or receivable factoring might be placed in other sheets within the workbook and linked. Unless there is no seasonality in the business, we also recommend building the first year on a monthly basis and quarterly for the following years.

Case Study:
Now let’s look at an example of a financial model and dissect the application for decision making. It is important to remember that models can become extremely complex instruments depending on the intricacy of a business itself. For example, the formulas used to forecast receivables might vary depending on your company’s collection time line. Or, the amount of your cost of goods sold (COGS) and inventory might be dependent on the raw materials you buy in order to make the product. As the cost of iron ore increases, so will your COGS and the value of the inventory you have in the warehouse. However, all of these factors can be incorporated into a model and adjusted at any time, which is what makes a financial model such a useful tool.

This illustration utilizes a simple model to demonstrate how a model works and how to input educated assumptions to predict what the resulting financials might be. Uncle Bob’s Wholesale Widget Shop distributes small components to manufacturers where they are then used in a larger manufacturing process. Let’s take a more detailed look at the model.

Assumptions:
Assumptions are developed based on each financial statement. For the Profit and Loss Statements, this is deciding revenue and expenses by category for the period of time going forward. Cost of Goods Sold may be based on raw material purchases and inventory or as a percentage of sales. Fixed expenses may be modeled as a fixed dollar amount, while variable expenses are estimated based on a percentage of sales.

Below is a set of assumptions that we will use to calculate the Company’s income statement and balance sheet. Everything within the Assumption section of the model can be adjusted at any time. Those numbers will then flow though the model.

In this instance, we have a line item for revenue which we assumed would be 5% higher than the same month last year. Costs of goods sold are generally 52% of revenue for Uncle Bob’s
business model and the resultant values have formulated on the income statement. It is possible that the product cost to Bob may increase. In this case we can simply adjust this percentage on the assumptions tab – but for now we have left this constant at 52%.

We also have a number of operating expense assumptions, including rent, R&D, marketing and sales, and G&A. Uncle Bob’s pays the same amount of rent each month, as does sales and marketing, and R&D. General and administrative expense (G&A), varies the most because this includes fluctuating expenses such as overhead costs.

Next we develop assumptions for the Balance Sheet which will flow into the Cash Flow Statement. The typical assumptions are for Accounts Receivable, Accounts Payable, Inventory, Capital Expenditures, and Debt Repayment. More sophisticated models incorporate Factoring Schedules for AR, Progress Billings/Unearned Revenue, and Debt amortization schedules.

For our model, Bob wants to assume paydown of $1,000 in long term debt each month and plans to purchase $11,000 in new equipment in May. Lastly, Bob has assumed that at any given month, A/R is approximately 40% of revenue since over half of his customers pay by credit card at point of purchase. A/P is approximately 70% of COGS since some of the products require a short payment time as well. Let’s see what Bob’s financial condition will look like based on these assumptions.

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<th>Assumptions</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
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**Income Statement:**
The assumptions flow into the Profit and Loss Statement below. Bob is now able to see that he will make $65,450 in the first half of the year. Historically, May tends to be a slow month for widget sales, so Bob might need to adjust his marketing strategies in order to lessen the loss he is anticipating. Perhaps he will launch a strategic sales initiative in an effort to raise his revenue levels. Many retail industries tend to run sales and discount inventory. Or, Bob might decrease the R&D budget for that month in order to compensate for the slow sales month. The take away here is that any scenario can be modeled out in order to help a business owner/manager evaluate different strategies or action plans that can be implemented to drive a more successful business.
Balance Sheet:
Now that we have analyzed what Uncle Bob’s income statement would look like with certain revenue and expense assumptions, let’s take a look at the bigger picture and see how the Company’s balance sheet might look with the assumptions we listed above. The balance sheet is important because it identifies what you have (assets), what you owe (liabilities) and what you own (equity).

Bob’s asset levels increase and decrease in conjunction with the Company’s sales levels because as sales increase, receivables go up and inventory goes down. The Company’s cash balance is expected to almost double over the next six months, despite the investment in new equipment Bob is anticipating in May. Thus, PP&E levels remain constant until Bob purchases the new equipment.

Bob’s liabilities increase and decrease primarily due to the Company’s COGS values. As we determined earlier, his payables tend to be approximately 70% of his cost of goods. The Company’s debt is also amortizing at a rate of $1,000 per month. The model illustrates that the company should be able to meet short term liabilities over the next six months if assumptions are met. In other words, the Company’s working capital (current assets – current liabilities), is forecasted to be sufficient in the short term.

Since we do not assume any need for a capital infusion in the next six months, common stock levels will remain the same. However, total equity will increase because of the company’s steady increase in retained earnings. Retained earnings are the remainder of net earnings that are not paid out as dividends but rather ‘retained’ in the business to be reinvested or to pay debt.
Cash Flow Statement:

The cash flow statement below represents the value changes in each line item on the balance sheet month to month. This statement is completely formula driven. The Cash Flow Statement allows us to understand the flow of cash through the business, which given the expected days outstanding for AR and AP, could be very different than the net income on the Profit and Loss Statement. This is an essential part of the model as it allows business owners/managers to predict their cash and liquidity levels months in advance and forecast if there will be cash gaps that need to be filled with additional debt or capital infusion.

Modeling is an important exercise recommended for all businesses in order to forecast future activities and make good business decisions. It can illustrate growth, trends, seasonality and account for major expenditures and investments in order to lessen the element of surprise. It is a tailored tool for business owners and management team to develop focus and establish goals for the company.
Action Items:
1. Compile your company’s historical financial statements (balance sheet/income statement/cash flow) for the last three years. At least one year of monthly financials works best as you are able to identify seasonality in sales and costs.
2. Come up with a list of assumptions including, revenue trends, costs, investments, debt, equity, etc.…
3. Work with a Cathedral Consulting representative to build out a 3-5 year model to predict your company’s financial condition in order to make sound business decisions.

Articles for Further Reading:
2. http://www.bdoindia.co.in/uploadedfile/1/2/-1/Financial%20modelling%20FAQ.PDF

Jerry Condon is a Managing Director in the Midwest Office. Ryan Collopy is a former Associate in the Midwest Office. Sharon Burkholder is a former Senior Associate in the New York Office.

For more information, please visit Cathedral Consulting Group LLC online at www.cathedralconsulting.com or contact us at info@cathedralconsulting.com.