14. Evaluating Financial Viability

Dr. Jack M. Wilson

Distinguished Professor of Higher Education, Emerging Technologies, and Innovation

Financial Management –Key Questions

- How are we doing? Are we making or losing money?
- How much cash do we have on hand?
- Do we have enough cash to meet our short term obligations?
- How efficiently are we utilizing our assets?
- How do our growth and net profits compare to our industry peers?
- Where will the funds come from for needed capital improvements?
- Can we partner with other firms to share risk and reduce our needs for cash?
- Over-all: are we in good shape financially?

Financial Management

- Raising money and managing a new companies finances
- Even successful companies often have to pay for cost of goods and then wait for purchasers to pay in 30-60 days. It is easy to run out of cash.
- For the new venture founder: “Cash is King”
- Can you fund growth through earnings, borrowing, or investment. All of the above?

Financial Objectives of any firm

The financial objectives of any firm include:

- **Profitability**
  - Are we making a profit or losing money, and how much?
  - Firms want and NEED to be profitable.
  - Even non-profit social entrepreneurship ventures need to avoid losing money. The goal is to fulfill their mission, but if there is no margin then there is **no mission**.
- **Liquidity**
  - Do we have access to enough cash and other resources to meet our short term obligations. Cash, Inventory, accounts receivable, ability to meet short term obligations
- **Efficiency**
  - How effectively a firm utilizes its assets relative to revenues and profits. What kind of return is the company getting on its sales (ROS), Assets (ROA), investment (ROI), equity (ROE), and other resources.
- **Stability** requires that any firm
  - Earn a profit, remain liquid, and keep debt in check
  - Debt to equity ratio (long term debt/shareholder's equity) helps understand whether the debt is getting out of control.

The process of financial management

- In an ongoing business the process of financial management always begins with three documents based upon the recent history of the firm. These are:
  - The **Income statement** (Profit and loss statement) (P&L)
  - The **balance sheet** -Balancing Assets and Liabilities
  - The **statement of cash flows**
- Next one prepares forecasts of income, expenses and capital expenditures.
- These forecasts (along with the explicit assumptions used to make them) become the basis for the development of pro-forma (forward looking), income statement, balance sheet, and cash flow statement.
- These are then subjected to an ongoing analysis of key metric of success such as ROI, ROE, ROA, Debt to Equity, and other ratios. How did the results compare to the plan?
- For the new venture there is no historical record and the pro-forma statements need to be constructed from explicit assumptions about the operation of the business.

Using Accounting Records to Track Costs

For most leaders of new ventures, accounting is their least favorite activity. Often this is outsourced to a local accounting provider, but sometimes it needs to be done by the entrepreneur to keep expenses down. This is most often true in the early stages.

- For smaller start-ups, the key is to keep one journal and have two boxes for receipts and invoices.
- Accounting software- fortunately there are now inexpensive accounting packages that can help the neophyte keep basic financial records. These include:
  - Microsoft Small Business Financials
  - QuickBooks
  - Peachtree
- There are also some new cloud based services that provide accounting online. Five of the largest cost about $15-$25 per month and include
  - Quickbooks by Intuit.
  - Freshbooks
  - Kashoo
  - Outright
  - Xero
    - (http://www.cio.com/article/2388062/small-business/5-top-picks-for-small-business-cloud-based-accounting.html):
- Keep two copies of your records
- Use business checks for business expenses. Do NOT comingle business and personal expenses.
- Study taxation rules

Financial Objectives and Ratios

- Efficiency - Is how productively a firm utilizes its assets relative to its revenue and its profits.
- Efficiency Ratios include
  - Average Inventory Turnover Ratio - Tells the average number of times the firm's inventory is “turned over” or sold out during the accounting period.
  - Net Sales to Total Assets Ratio - Measures the firm’s ability to generate sales given its asset base.

Key Components of the Process of Financial Management

Summarizing what we said, the key components are:

- Financial Statement
  - Income statement
  - Balance sheet
  - Statement of cash flows
- Forecasts: income, expenses, capital expenditures
- Budgets: itemized forecasts
- Preparation of Pro forma Financial Statements
  - Pro forma income
  - Pro forma balance sheet
  - Pro forma statement of cash flows.
- Financial ratios: ROI, ROA, debt to equity, etc
  - need to compare to benchmark industry peers

Financial Statements and Forecasts

Remember the distinction between historical and forward looking statements:

- Historical Financial Statements give the actual past performance
  - Publicly traded companies under Securities and Exchange Commission (SEC) must file a public form disclosing these statements.
  - This is referred to as filing a 10-K
- Pro forma financial statements project the future financial positon of the firm.
  - Projections for future periods based upon forecasts may look as far as ~2-3 years.
  - Pro-forma financial statements are not usually public

Financial Statements

Remember the key financial statements are:

- Income Statement
  - The income statement reflects the results of the operations of a firm over a specified period of time. It records all the revenues and expenses for the given period and shows whether the firm is making a profit or is experiencing a loss.
- Balance Sheet
  - The balance sheet is a snapshot of a company's assets, liabilities, and owners' equity at a specific point in time.
- Statement of cash flows
  - The statement of cash flows summarizes the changes in a firm's cash position for a specified period of time and details why the change occurred. The statement of cash flows is similar to a month-end bank statement.

Now let us consider each of these statements in more detail.

Income Statement

- The income statement reflects the results of the operations of a firm over a specified period of time. It records all the revenues and expenses for the given period and shows whether the firm is making a profit or is experiencing a loss.
- The three numbers that receive the most attention when evaluating an income statement are the following:
  - **Net sales** consists of total sales minus allowances for returned goods and discounts.
  - **Cost of sales** includes all the direct costs associated with producing or delivering a product or service, including the material costs and direct labor.
  - **Operating expenses** include marketing, administrative costs, and other expenses not directly related to producing a product or service.
- Two key ratios operate here:
  - Profit Margin-return on sales = net income/net sales
  - P/E –Price-Earnings ratio – Price of share/earnings per share
    - only for public co.

Balance Sheet

- Unlike the income statement, which covers a specified period of time, a balance sheet is a snapshot of a company's assets, liabilities, and owner's equity at a specified point in time.
  - The left-hand side of a balance sheet (or the top, depending on how it is displayed) shows a firm's assets, while the right-hand side (or bottom) shows its liabilities and owner's equity.
  - Multiple years are shown so trends can be easily spotted.
- The major categories of assets listed on a balance sheet are the following:
  - **Current assets** include cash plus items that are readily convertible to cash, such as accounts receivable, marketable securities and inventories.
  - **Fixed assets** are assets used over a longer time frame, such as real estate, buildings, equipment, and furniture.
  - **Other assets** are miscellaneous assets, including accumulated goodwill.
  - **Quick assets** are calculated as Current Assets minus inventories.

Liabilities

- The major categories of liabilities listed on a balance sheet are the following:
  - **Current liabilities** include obligations that are payable within a year, including accounts payable, accrued expenses, and the current portion of long-term debt.
  - **Long-term liabilities** include notes or loans that are repayable beyond one year, including liabilities associated with purchasing real estate, buildings, and equipment.
  - **Owners' equity** is the equity invested in the business by its owners plus the accumulated earnings retained by the business after paying dividends.
    - Many students find it odd that owners' equity is a liability. They tend to think of liabilities as a bad thing and think that owners' equity would be a good thing. From the standpoint of the owners, they are correct, but from the standpoint of the company one might think of this as what the company owes the owners. We take our perspective from the company!

Balance Sheet –Key Ratios

The balance sheet allows one to calculate a number of important ratios that one can use to compare the performance of the firm from year to year and to other companies in the industry. Here are a few key ratios that you should know:

- **Working Capital** = Current Assets – Current Liabilities

- **Current Ratio** = Current assets / Current Liabilities
- **Debt Ratio** = Total Debt(long & short) /Total Assets

Statement of Cash Flows.

The statement of cash flows summarizes the changes in a firm's cash position for a specified period of time and details why the changes occurred. It is similar to a month-end bank statement. It reveals how much cash is on hand at the end of the month as well as how the cash was acquired and spent during the month.

It also answers the question of whether a company generating enough cash for various purposes: dividends, paying down debt, or investing in the company.

The statement of cash flows is divided into three separate activities: operating activities, investing activities, and financing activities. These activities, which are explained in the following list, are the activities from which a firm obtains and uses cash:

- **Operating activities** include net income (or loss), depreciation, and changes in current assets and current liabilities other than cash and short-term debt. A firm's net income, taken from the income statement, is the first line on the corresponding period's cash flow statement.
- **Investing activities** include the purchase, sale, or investment in fixed assets, such as real estate, equipment, and buildings.
- **Financing activities** include cash raised during the period by borrowing money or selling stock and/or cash used during the period by paying dividends, buying back outstanding debt, or buying back outstanding bonds.

Cash Flow Management

- Income to Cash Flow
  - Take your net profit and add back depreciation
  - Subtract increases or add decreases in **accounts receivable**
  - Subtract increases or add decreases in **inventory**
  - Add increased or subtract decreases in **accounts payable**
- Here are some strategies to improve cash flow.
  - Minimize your accounts receivable. Collect as early as possible.
  - Reduce the raw material and finished products inventory. Inventory ties up cash.
  - Control your spending.
  - Delay your accounts payable

Forecasts

Financial management is more difficult for the new firm that has no historical data.

- For a new firm you will probably start with some form of a business plan
- Use that plan to create an assumptions sheet that tells why you think that revenues, expenses and other items will be as forecasted..
- Do a sales forecast. How much do you expect to sell?
  - Regression analysis helps once there is some actual history to use. You can use the past to create a trend line that will project the future.
- Do a cost of sales forecast –A common way is forecast the cost of sales as a percentage of sales
  - The constant ratio method means that as sales go up so does the cost of the sales in the same ratio. Hopefully the cost of sales may eventually go up more slowly than the sales.
- The goal of a new venture is to reach and surpass the break even point.
  - Break even point occurs when total revenue meets total costs.

Break-Even Point

- The point where the amount of sales that you need to achieve to cover your total costs.
- Break-even analysis steps:
  – Determine the sales price (per unit) of your product or service
  – Estimate the variable cost (per unit) of your product or service
  – Subtract the variable cost per unit from the sales price to calculate your contribution margin (per unit)
  – Estimate your business' fixed costs
  – Divide the fixed costs by the contribution margin percentage to calculate the breakeven point

Estimate Demand

Forecasting revenues requires that you be able to estimate the demand for your product or service.

- If you have no historical data, then you might use historical analogy or compare to substitute products
- Talk to customers- Listening to customers is the very best way to get a handle on the potential demand.
- Interview prospective end-users and intermediaries
- Use the entrepreneur's knowledge and experience. This is one reason that investors prefer experienced entrepreneurs –even if they have failed in the past. They have an experience base to draw upon.
- Go into limited production to test the market. In this way you limit your exposure to expenses. Recall the case study of the Segway transport system, they had estimated a production run of 40,000 per month but sold only a few hundred per month. They had built an untenable expense base. I bet they wish that they had started with a more targeted market and more limited production run.

Sales Forecast -to recap

- A sales forecast for **an existing firm** is based on
  - its record of past sales
  - its current production capacity and product demand,
  - factors that will affect its future product capacity and product demand, such as
    - The Growth rate in the market
    - Technology innovations that make the products more attractive or produced at a lower cost.

- A sales forecast for **a new firm** is based on a good-faith estimate of sales and on industry averages or the experiences of similar start-ups. It should be accompanied by an assumptions sheet in which you lay out the reasons that you make the estimate that you do.

Summary of key ratios that every entrepreneur should know

- **ROA**-Return on assets = net income/ave. total assets
  - Ave.-average of beginning and ending (assets or equity)
- **ROE**-Return on equity = net income/ave. shareholder’s equity.
- **Profit margin** = net income/net sales

- **Current ratio**= current assets/current liabilities
- **Quick ratio** = quick assets/current liabilities
  - Quick –cash &accts. receivable

- **Debt ratio** = total debt(liabilities)/total assets
- **Debt to equity** = total liabilities/ owners’ equity

Example: Calculating the following ratios -the formulas

1. Current Ratio = $\dfrac{\text{Current Assets}}{\text{Current Liabilities}}$

2. Quick Ratio = $\dfrac{\text{Quick Assets}}{\text{Current Liabilities}}$

3. Debt Ratio = $\dfrac{\text{Total Debt(Liabilities)}}{\text{Total Assets}}$

4. Average Inventory Turnover Ratio=

   = $\dfrac{\text{Cost of Goods Sold}}{\text{Average Inventory*}}$

*Average Inventory=

= $\dfrac{\text{Beginning Inventory + Ending Inventory}}{2}$

5. Quick Assets = Current Assets –Inventory

6. Net Sales to Total Assets = $\dfrac{\text{Net Sales}}{\text{Total Assets}}$

7. Net Profit on Sales = $\dfrac{\text{Net Income}}{\text{Net Sales}}$

8. Net Profit to Equity = $\dfrac{\text{Net Income}}{\text{Owner's Equity}}$

Consolidated Income Statement –an example

NewUMLco Income Statement			
	Dec. 31, 2014	Dec. 31, 2013	Dec. 31, 2012
Net Sales	$ 586,600	$ 463,100	$ 368,900
Cost of Sales	$ 268,900	$ 225,500	$ 201,500
Gross Profit	$ 317,700	$ 237,600	$ 167,400
Operating Expenses			
Selling, General and Administrtive Expenses	$ 117,800	$ 104,700	$ 90,200
Depreciation	$ 135,000	$ 5,900	$ 5,100
Operating Income	$ 186,400	$ 12,700	$ 72,100
Other Income			
Interest Income	$ 1,900	$ 800	$ 1,100
Interest Expense	$ (15,000)	$ (6,900)	$ (6,400)
Other Income	$ 10,900	$ (1,300)	$ 1,200
Income before Income Taxes	$ 184,200	$ 119,600	$ 68,000
Income Tax Expense	$ 53,200	$ 36,600	$ 18,000
Net Income	$ 131,000	$ 83,000	$ 50,000
Earnings per share	1.31	0.83	0.5

Consolidated Balance Sheets –an example

Consolidated Balance Sheets for NewUMLco			
Assets	Dec. 31, 2011	Dec. 31, 2010	Dec. 31, 2009
Current Assets			
Cash and Cash Equivalents	$ 63,800	$ 54,600	$ 56,500
Accounts Receivable less allowances for doubtful accts.	$ 39,600	$ 48,900	$ 50,200
Inventories	$ 19,200	$ 20,400	$ 21,400
Total current Assets	$ 122,600	$ 123,900	$ 128,100
Property Plant and Equipment			
Land	$ 260,000	$ 160,000	$ 160,000
Buildings and Equipment	$ 412,000	$ 261,500	$ 149,000
Total Property Plant and Equipment	$ 672,000	$ 421,500	$ 309,000
Less Accumulated Depreciation	$ 65,000	$ 51,500	$ 45,600
Net Property, Plant, and Equipment	$ 607,000	$ 370,000	$ 263,400
Total Assets	$ 729,600	$ 493,900	$ 391,500
Liabilites and shareholder's Equity			
Accounts Payable	$ 30,200	$ 46,900	$ 50,400
Accrued Expenses	$ 9,900	$ 8,000	$ 4,100
Total Current Liabilities	$ 40,100	$ 54,900	$ 54,500
Long-term Liabilities			
Long-term debt	$ 249,500	$ 130,000	$ 111,000
Long-term liabilities	$ 249,500	$ 130,000	$ 111,000
Total liabilities	$ 289,600	$ 184,900	$ 165,500
Shareholders Equity			
Common stock (100,000 shares)	$ 10,000	$ 10,000	$ 10,000
Retained Earnings	$ 430,000	$ 299,000	$ 216,000
Total Shareholder's Equity	$ 440,000	$ 309,000	$ 226,000
Total Liabilities and Shareholder's Equity	$ 729,600	$ 493,900	$ 391,500

Statement of Cash Flows

- Statement of cash flows for NewUMLco

Cash Flow Statement for New UMLco				
		2014		2013
Cash flows from operating activities				
Net Income	$	131,000	$	83,000
Additions (sources of cash)				
Depreciation	$	13,500	$	5,900
Decreases in accounts receivable	$	9,300	$	1,300
Increase in accrued expenses	$	1,900	$	3,900
Decrease in inventory	$	1,200	$	1,000
Total Additions	$	25,900	$	12,100
Subtractions				
Decrease in accounts payable	$	(16,700)	$	(3,500)
Total Subtractions	$	(16,700)	$	(3,500)
Total Adjustments	$	9,200	$	8,600
Net Cash Provided by operating activities	$	140,200	$	91,600
Cash flows from investing activities				
Purchase of building and equipment	$	(250,500)	$	(112,500)
Net Cash flow provided by investing activities	$	(250,500)	$	(112,500)
Cash flows from financing activities				
Proceeds from increase in long term debt	$	119,500	$	19,000
Net cash flows provided by financing activities.	$	119,500	$	19,000
Increase in cash	$	9,200	$	(1,900)
Cash and cash equivalents at the beginning ofthe year.	$	54,600	$	56,500
Cash and Cash equivalents at the end of each year.	$	63,800	$	54,600

Ratios

Computing some of the key ratios gives us:

Title	2014	2013	2012	
Return on Assets-ROA=net income/ave total assets	21.4%	18.7%		
Return on Equity-ROE=netincome/ave shareholders equity	35.0%	31.0%		
Profit margin =net inc./net sales	22.3%	17.9%	13.6%	
Liquidity Ratios				
Current= Current assets/current liabilities	3.06	2.26	2.35	
Quick=quick assets/current liabilities	2.58	1.89	1.96	
Debt ratio= total liabilities/total assets	39.7%	37.4%	42.3%	
Debt to Equity= total liabilities/owners equity	65.8%	59.8%	73.2%	