**Financial Projections for Start Ups**

Angelo Santinelli

Learning Objectives

1. Explain the purpose of financial projections for startups
2. Describe financial statements as an essential part of financial projections
3. Clarify the relationship between the three financial statements.
4. Describe the journey of cash through the cash conversion cycle.
5. Discuss how to build a pro forma financial statement
6. Explain the assumptions that may apply when building pro forma statements.

H1 1.0 Financial projections for startups H1

LO 1. 0 Explain the purpose of financial projections for startups

In Chapter 13 Equity Financing, we touched upon the topic of financial projections, and how potential investors (angels, VCs) sometimes decline to invest in a project because they feel the financial projections have been exaggerated or come across as not being believable. This is because, financial projects are often built upon a foundation of untested assumptions and third party data sources that are interpreted to portray a market size and growth that exaggerates or distorts the predictions of revenue growth.

 In many cases, entrepreneurs first develop pitch decks or other similar planning toolsbefore testing the feasibility of their ideas to confirm whether or not the idea is indeed an opportunity. As result, they lack the necessary data to support their financial projections which means the exercise is nothing more than guesswork. As we have explained in this textbook, developing the right mindset, testing and experimenting, building business models, and planning, comes before financial projections. Through this iterative process, entrepreneurs learn how to assess the problem/solution fit, solution/market fit, competitive and industry fit, and financial fit, all the time gathering primary data as a means of developing assumptions, opinions, and a market perspective based upon objective data and analysis. Armed with this data, entrepreneurs have a better chance of making a more convincing case for financial projections, and proving that their startup is worth investment.

Presenting carefully thought-out financial projections to investors is really an exercise in lowering perceived risk in both you as an entrepreneur and your idea. By framing the opportunity from the perspective of the target market or markets, understanding the resources required to capitalize on the opportunity, and knowing how to allocate those resources under varying market conditions, investors will be more inclined to embark upon the journey of starting your business. Similarly, the confidence and knowledge that you have developed from building the projections should make the process of convincing others, employees and investors alike, go more smoothly.

1. H1 Financial Statements H1

LO 2. Describe financial statements as an essential part of financial projections

 Financial statements provide a window into the health and performance of a company. Your financial projections should include three financial statements: an income statement, a balance sheet and a cash flow statement. As we learned in Chapter 10 Revenue Models, the **income Statement** (or profit and loss statement) is a financial report which measure the financial performance of your business on a monthly or annual basis. It shows the selling and expense-related activities that result in profit or loss over a set period of time. The **balance sheet** is a financial report which shows what the company owes, and what it owns, including the shareholder’s stake, at a particular point in time. The **cash flow statement** is a financial report which details the inflows and outflows of cash for a company over a set period of time.

Each statement examines the company from a slightly different perspective, yet together they relate to one another to document the movement of cash into and out of the company.

In the following sections, we will take a closer look at each of these three financial statements.

**H2 Income Statement H2**

The income statement measures the financial performance of your business on a monthly or annual basis (see Figure 1). It subtracts the COGS (cost of goods) and expenses (administrative, marketing, research, and other operating expenses) from the total revenue to give you a net income figure, which will either be a profit or a loss. Using Figure 1 as a guide, let’s explore the different line items of the income statement in further detail.

Figure 1 Income Statement

|  |  |
| --- | --- |
| **Revenue** | $$$$ |
| (-) Cost of Goods | $$ |
| **Gross Profit** | $$ |
| (-) Sales, General & Administrative | $ |
| (-) Marketing | $ |
| (-) Research & Development | $ |
| (-) Depreciation & Amortization | $ |
| **Operating Profit** | $$ |
| (-) Interest Expense | $ |
| (-) Taxes | $ |
| **Net Income** | $$ |

Firstly, revenue is recorded on the income statement when the company makes a sale of a product or service and then delivers to the customer, thereby creating an obligation for the customer to issue payment to the company. It is important to note that there is a difference between a sale (revenue) and an order (bookings). An order may, or may not, become a sale. Orders become sales only when the product has shipped to and accepted by the customer. A sale is recorded on the income statement, while an order might only show up in a **backlog** –orders that have been received but not delivered to the customer. Also, the revenue number should be expressed net of any discounts offered. Table 1 explains the distinctions between revenue, bookings, and backlogs.

Table 1 Revenue, Bookings and Backlog

|  |  |
| --- | --- |
| Revenue = Sale | Shown on the Income Statement net of any discounts when a customer receives and accepts an Order |
| Bookings = Order | An Order is a promise to purchase, which does not show up on the Income Statement until the customer receives and accepts the product or service |
| Backlog = Orders - Revenue | Orders that have been received but not delivered to the customer |
|  |  |

COGS represents the total cost to manufacture a product. Costs are expenditures of raw materials, labor and manufacturing overhead used to produce a product. For a services business, COGS may include the cost of service staff and associated overhead.

Subtracting COGS from revenue leaves you with three types of profit margins: gross margins, operating profit and net income. . A high gross margin percentage that remains consistently high over time can be an indicator of the company’s long-term competitiveness.[[1]](#endnote-1) It also shows that the company has sufficient funds for sales, marketing, product development and other expenses.

**Operating expenses** are the expenditures that the company makes to generate income. These expenditures generally include sales, general and administrative (SG&A), research and development (R&D), and marketing expenses. These expenses directly lower income.

As we explored in chapter 10, the income statement also reflects depreciation and amortization of your company’s assets. Recall that depreciation really means the cost of wear and tear of your physical assets such as machinery, equipment, and the building in which you operate. Amortization works similarly to depreciation; the main difference is that amortization relates to intangible assets such as patents, trademarks, copyrights, and business methodologies. Amortization matches the useful life of an intangible asset with the revenue it generates.

If you have taken accounting in the past you might hear depreciation referred to as a “non-cash” expense that is usually ignored when calculating free cash flow or EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization). It is an accepted practice, but it avoids the obvious, which is that equipment and buildings eventually need to be replaced. From a short-term perspective, depreciation is a non-cash charge to earnings, but in the long-term someone has to write a check for replacement. It is best to ask your accountant about the various rules for depreciating assets.

The second most important profit margin to monitor is **operating profit** which is the amount left over from revenue once all costs and expenses are subtracted.

**interest expense**, which shows the extent of the company’s debt burden as well as representing any interest owed i on borrowed money.

Taxes are the last expense item before net income. This line item captures federal, state and sometimes municipal taxes due for the period. Sales taxes are not recorded here.

The third profit margin item is **net income** which indicates what is left after all costs, expenses and taxes have been paid. . It is important to note that there is a difference between income , and cash; for instance,it is quite possible for a company to have positive net income, but have a negative cash flow which causes it to struggle to pay its bills. We will explore this concept in more detail a little later.

The income statement alone tells you little about a company’s long-term viability or financial health. It tells you little about how and when the company receives cash or how much it has on hand. For an accurate picture of financial health and to build a viable financial projection, the balance sheet and cash flow statements need to be analyzed. These statements will tell you the costs of making and selling your product or service and if the company is profitable.

**Income Statement**

**H2 The Balance Sheet H2**

The balance sheet (see Figure XX) is a statement that shows

 what the company has today (assets), how much it owes (liabilities), and what it is currently worth (shareholders’ equity).

**Figure XX Balance Sheet**

|  |  |  |  |
| --- | --- | --- | --- |
| **Assets*****(What You Own)*** |  | **Liabilities*****(What You Owe)*** |  |
| **Current Assets** |  | **Current Liabilities** |  |
|  Cash | $$ |  Accounts Payable | $$ |
|  Inventory | $$ |  Accrued Expenses | $$ |
|  Accounts Receivable | $$ |  Short-Term Debt | $$ |
|  Prepaid Expenses | $$ |  Other Current Liabilities | $$ |
| **Fixed Assets** |  | **Long-Term Debt** | **$$** |
|  Property, Plant & Equipment | $$ | **Shareholders’ Equity*****(What You Are Worth)*** |  |
|  Accumulated Depreciation | $$$ |  Retained Earnings | $$ |
|  |  |  Capital Stock | $$ |
| **Total Assets** | **$$$$** | **Total Liabilities and Shareholders’ Equity** | **$$$$** |

As explained in Figure 2, the Balance Sheet gets its name from a basic equation, which must be equally balanced.[[2]](#endnote-2)

Figure 2 The Balance Sheet equation.

|  |  |  |
| --- | --- | --- |
| **What You Own** | **=** | **What You Owe + What You Are Worth** |
| **Assets** | **=** | **Liabilities + Shareholders’ Equity** |
| *Both sides of this equation must always be in balance* |

Assets include cash, machines, inventory, buildings, and what you are owed and what you have the right to collect.

**current assets** include cash and other assets such as , inventory, accounts receivable and prepaid expenses that can be converted into cash within a year. Cash usually includes both cash and cash equivalents, or short-term, low risk investments. Inventory represents what the company has to sell as well as materials that are to be made into products. There are three basic types of inventory: raw materials which includes any goods or components used in the manufacturing process; work-in-process (WIP) or semi-finished products, which are partially assembled items awaiting completion; and finished goods that are ready to be sold.



**Accounts receivable** refers to money owed to the company for goods or services provided and billed to a customer. When the company ships a good or provides a service to a customer on credit and bills them, the company has the right to collect this money**. Prepaid expenses** represents payments the company has already made for services not yet received. These are usually things like insurance, deposits, and prepayment of rent. Prepaid expenses are considered current assets because the company has already paid for these services and will not have to use cash to pay for them in the near future.

Fixed assets might also appear on the balance sheet as property, plant and equipment (PP&E). These are productive assets that are not intended for sale and are used over time to produce goods, store them, ship them and so on. This commonly includes land, buildings, equipment, machines, furniture, trucks, autos, and so on that have a useful life of 3 to 5 years although some assets such as land and buildings could be much longer. These assets are reported at cost less accumulated depreciation. Recall that depreciation is an accounting convention that appears on the income statement and represents the decline in value of the asset due to age, wear and the passage of time. Accumulated depreciation is the sum of all the depreciation charges taken since the asset was acquired.

<<H3>> Other types of Assets<<H3>>

Other assets is a catchall category that includes items such as the value of patents, goodwill, and intangible assets. **Goodwill** represents the price paid for an asset in excess of its book value. You will see this on the balance sheet when the company has made one or more large acquisitions. **Intangible assets** represent the value of patents, software programs, copyrights, trademarks, franchises, brand names, or assets that cannot be physically touched. One important note is that only items that have been purchased can appear here. For instance, companies are not allowed to create a value for things like a brand name and place it on the balance sheet.

**Another type of asset includes long term investments**which refers to assets that are more than one year old and are carried on the balance sheet at cost or book value with no appreciation. Examples of long-term investments include: cash, stock, bonds, and real estate. It is possible that the assets are worth much more, or much less, than the original cost, but the convention is to carry them at cost.

Let’s turn our attention to the other side of the balance sheet: liabilities and shareholders’ equity. **Liabilities** are economic obligations of the company, such as money it owes to lenders, suppliers and employees.

**Current liabilities** are bills that must be paid within one year of the date of the balance sheet. They are organized based upon who is owed the money. **accounts payabe**  is money owed by a business to its suppliers. . **accrued expenses** are costs incurred by the company for which no payment has been made. For example, wages and taxes may be indicated on the balance sheet to be paid at a future date, but that payment hasn’t occurred just yet. **Short-term debt** is the portion of long-term debt that must be paid within a year. A common example of short debt is money owed to lenders such as bank loans. **other current liabilities** are short-term liabilities that do not fall into a specific category such as sales tax, income tax etc. .

**Long-term debt** an obligation for debt that is due to be repaid in more than 12 months. Bank loans, finance and leasing obligations are all examples of long-term debt.

**<<H3>> Shareholders’ Equity<<H3>>**

**Shareholders’ equity** represents the money that has been invested in the business plus the cumulative net profits and losses the company has generated. This is a liability that is not usually repaid over the normal course of business. Subtracting what the company has (total Assets) from what it owes (total liabilities) provides the percentage of its value to the owners, or its shareholders’ equity.

The two main components of shareholders’ equity are **retained earnings** – the cumulative amount of profit retained by the company and not paid out in the form of dividends (a sum of money paid to shareholders from company profits) to owners; and **capital stock** – which represents the original amount the owners paid into the company plus any additional paid-in capital to purchase stock in the company.



Shareholders’ equity increases when the company makes a profit (increase in retained earnings) or sells new stock to increase the capital stock. If the company has a loss, which lowers retained earnings, or pays a dividend, which also lowers retained earnings, these actions will result in a decrease in shareholders’ equity.

**H2 The Cash Flow Statement H2**

The Cash flow statement tracks the movement of cash into (cash inflows) and out of (cash outflows) the company over a period of time. Cash outflows include loans, sales, interest, and shares; while outflows include payment to suppliers, wages and salaries and dividends to shareholders (see Table XX) . .



The cash flow statement is like a cash register for the company.

It shows the cash that is available at the beginning of the period; in other words, cash that is already in the register. It also shows cash received during the period such as cash from the sale of a product or service, or cash received from investments, borrowing or the sale of assets and stock, less the cash paid out in the period. This is cash actually paid out to support operations necessary to make and sell a product or service, or cash used to pay down loans, taxes, or the purchase of assets. This then leaves you with cash at the end of the period. Only cash transactions affect cash flow and are considered on the cash flow statement.

Cash flow statements, are generally divided into two basic parts: cash generated from operations or profit making activities; and cash generated from investment and financing activities. The first examines the profit making inflows and expense outflows; while the second examines inflows and outflows of cash related to the purchase and sale of assets and financing activities such as bank borrowing and stock sales. Together they form the full picture of cash moving through the company (See Figure X for sample Cash Flow Statement)

**Figure XX Cash Flow Statement**

|  |  |
| --- | --- |
| **Net Income**  | **$$$** |
|  (+) Depreciation & Amortization | $ |
|  (+) Sources: Decrease in Assets or Increase in Liabilities | $ |
|  (-) Uses: Increase in Assets or Decrease in Liabilities | $ |
| **Increase/(Decrease) Cash from Operations** | **$$$** |
|  |  |
|  (-) Net PP&E | $ |
| **Increase/(Decrease) Cash from Investments** | **$$** |
|  |  |
|  (+) Increase in Net Borrowing | $ |
|  (+) Sale of Stock | $ |
|  (-) Paying of Dividends | $ |
| **Increase/(Decrease) Cash from Financing**  | **$$** |
|  |  |
| **Increase/(Decrease) in Cash***(Should be equal to cash on the Balance Sheet)* | **$$** |

The first line of the cash flow Statement is net income. The first thing to do when examining cash flow is to add back depreciation and amortization that appear on the income statement. As you may recall, these are considered “non-cash” charges related to the declining value of tangible and intangible assets. So, even though a write-down, or charge may appear on the income statement, no cash actually left the company. Since we want to determine only cash in this statement, we add back both depreciation and amortization expenses.

The next step is to examine the changes in the balances of current assets and current liabilities on the balance sheet. If a current asset balance increases, we are using cash. If a current asset balance decreases, we are adding cash. Conversely, an increase in a current liability balance adds cash, while a decrease in a current liability balance uses cash. See Table XX.

Table XX Inflows and Outflows of Cash

|  |  |
| --- | --- |
| **Sources (Inflows) of Cash** | **Uses (Outflows) of Cash** |
| * Decrease in Assets
 | * Increase in Assets
 |
| * Increase in Liability
 | * Decrease in Liability
 |
| * Increase in Shareholders’ Equity
 | * Decrease in Shareholders’ Equity
 |
| * Profit from Operations
 | * Loss from Operations
 |

Initially, it is best to understand the inflows and outflows of cash related to the operating activities of the company, by determining the sources (inflows) and uses (outflows) associated with current assets and current liabilities to arrive at the degree of cash flow from operations.

Next we shift our focus to cash changes stemming from investment and financing activities. One option might be to simply stockpile cash on the balance sheet, but this isn’t the most productive use of cash. Another option might be to return cash to shareholders in the form of dividends, or to pay down any debt that the company may have amassed. And still another option might be to invest in productive assets such as machinery and equipment, or to acquire all or part of another business. This may show up as a separate line item in the cash flow as “Investments in Fixed Assets” or something similar.

Finally,, you must examine cash inflows and outflows from financing activities such as selling stock, borrowing, or paying dividends. Borrowing money increases the amount of cash on hand. Conversely, paying down your debt lowers the amount of cash on hand, while the sale of stock by a company increases the amount of cash coming into the company.

Adding the cash flow from operations to the cash flow from investing and financing leaves us with either a cash increase or decrease for the period. If a company has either cash in the bank or access to additional cash, it can withstand negative cash flow for several periods. It is good business practice for entrepreneurial managers to strive to achieve profits and convert those profits into cash.

<<H3>> The differences between net income (or profit) and cash flow.

This concept along with the treatment of depreciation and amortization, and sources and uses, can be quite confusing.. Net income, or net profit as it appears on the income statement is determined by accounting principles and includes accruals and non-cash items such as depreciation and amortization. In other words, there are items on the income Statement that determine net income for a period that do not represent actual cash coming in or going out of the company for that period.

 For instance, when describing how revenue is recorded on the income statement the credit sales are captured as an obligation to pay (asset) in the balance sheet as an account receivable. Even though no cash has changed hands, the revenue still reflects the sale. This treatment also applies to expenses and capital expenditures on the income statement.

However, cash flow only deals with actual cash transactions. A company’s operating policies, production techniques, and inventory and credit-control systems will influence the timing of cash moving through the business and this is what the entrepreneurial manager must master in order to convert profit into cash.

**H1 3. Linkages between the Three Financial Statements H1**

**LO 3. Explain the relationship between the three financial statements.**

In order to develop a comprehensive set of financial projections, it is important to understand how the three statements are linked to one another and how decisions with regard to the operations of a company will impact its financial performance. For instance, a company’s pricing and credit policies will have a direct impact on revenue, an income statement item, and accounts receivable, a balance sheet item. While each financial statement provides a different view of the company,each statement is also related to the other.

For instance, Net income on the income statement is added to retained earnings on the balance sheet. The ending cash balance on the cash flow statement is equal to the cash on the balance sheet. Every entrepreneurial founder needs to understand how cash and goods and services flow into and out of the company.

Figure XX shows what happens when a sale is made, the product or service is delivered, and the cash is collected. When a sale is made and the product or service accepted by the customer, revenue on the income statement increases. Assuming that credit is extended for the sale, accounts receivable on the balance sheet also increases. Once the obligation to pay is met by the customer, accounts receivable decreases and the amount paid becomes a cash inflow on the cash flow statement. Additionally, when a sale is made the value of the product is moved from inventory, a (balance Sheet item,) to cost of goods, (an income statement item).[[3]](#endnote-3)

**Income Statement**

When a sale is made, revenue increases on the income

statement and an obligation to pay is incurred by the customer, which increases accounts payable on the balance sheet.

|  |  |
| --- | --- |
| **Revenue** | $$$$ |
| (-) Cost of Goods | $$ |
| **Gross Profit** | $$ |
| (-) Sales, General & Administrative | $ |
| (-) Marketing | $ |
| (-) Research & Development | $ |
| (-) Depreciation & Amortization | $ |
| **Operating Profit** | $$ |
| (-) Interest Expense | $ |
| (-) Taxes | $ |
| **Net Income** | $$ |

When the customer pays for the product or service, Accounts Receivable on the Balance Sheet decreases while a receipt of cash in recorded on the Cash Flow Statement.

When a sale is made, the value of the product is moved from Inventory on the Balance Sheet to Cost of Goods on the Income Statement.

 **Balance Sheet**

When Net Income on the Income Statement increases, Retained Earnings on the Balance Sheet increases. The opposite is also true. A decrease in Net Income will decrease Retained Earnings.

|  |  |  |  |
| --- | --- | --- | --- |
| **Assets*****(What You Own)*** |  | **Liabilities*****(What You Owe)*** |  |
| **Current Assets** |  | **Current Liabilities** |  |
|  Cash | $$ |  Accounts Payable | $$ |
|  Inventory | $$ |  Accrued Expenses | $$ |
|  Accounts Receivable | $$ |  Short-Term Debt | $$ |
|  Prepaid Expenses | $$ |  Other Current Liabilities | $$ |
| **Fixed Assets** |  | **Long-Term Debt** | **$$** |
|  Property, Plant & Equipment | $$ | **Shareholders’ Equity*****(What You Are Worth)*** |  |
|  Accumulated Depreciation | $$$ |  Retained Earnings | $$ |
|  |  |  Capital Stock | $$ |
| **Total Assets** | **$$$$** | **Total Liabilities and Shareholders’ Equity** | **$$$$** |

**Cash Flow Statement**

|  |  |
| --- | --- |
| **Net Income**  | **$$$** |
|  (+) Depreciation & Amortization | $ |
|  (+) Sources: Decrease in Assets or Increase in Liabilities | $ |
|  (-) Uses: Increase in Assets or Decrease in Liabilities | $ |
| **Increase/(Decrease) Cash from Operations** | **$$$** |
|  (-) Net PP&E | $ |
| **Increase/(Decrease) Cash from Investments** | **$$** |
|  (+) Increase in Net Borrowing | $ |
|  (+) Sale of Stock | $ |
|  (-) Paying of Dividends | $ |
| **Increase/(Decrease) Cash from Financing**  | **$$** |
| **Increase/(Decrease) in Cash***(Should be equal to cash on the Balance Sheet)* | **$$** |

Similar to the sales cycle explained above, these types of connections between the various statements can be charted in similar fashion for the expense cycle, the purchase of fixed assets, and investments. When you understand how cash moves through the company, you begin to understand how policies related to credit, inventory and payables can affect the time it takes for cash to be converted into products and returned back to the company at a profit..

**H1 4. The Journey of Cash - The Cash Conversion Cycle H1**

**LO 4. Describe the journey of cash through the cash conversion cycle.**

 Cash is used to purchase materials, which are then made into products. This creates obligations to make payments to certain suppliers of those materials, which is captured on the balance sheet in accounts payable. These products are stored, which appears on the balance sheet in inventory, and are eventually sold and delivered to customers. Then the company has the right to collect cash for the selling price of the products, which appears on the balance sheet in accounts receivable. Once collected this cash has now returned to the company. Hopefully this journey produces more cash that is returned to the hands of the company. This journey is referred to as the **cash conversion cycle (CCC)**, which refers to the number of days a company’s cash is tied up in the production and sales process. CCC can be calculated using this simple equation:



Calculated in days this equation shows how long the journey is for cash from the point of leaving the company to the point of return.

**DSO** is measure ofthe number of days that it takes to collect on accounts receivable. Remember if you do business in cash then your DSO is zero, but if you sell on credit, then this will be a positive number. DSO is calculated using the following equation:

DSO = Average Accounts Receivable/ Revenue per day

Average Accounts Receivable = (Beginning Accounts Receivable + Ending Accounts Receivable)/2

Revenue per day = Revenue/365

**DIO** is a measure of the average number of days it takes to sell the entire inventory of a company. DIO is calculated using the following equation:

DIO = (Average Inventory)/COGS per day

Average Inventory = (Beginning inventory + Ending inventory)/2

COGS per day = COGS/356

**DPO** is a measure of the number of days it takes you to pay your bills. DPO is calculated using the following equation:

DPO = Average Accounts Payable/ COGS per day

Average Accounts Payable = (Beginning Accounts Payable + Ending Accounts Payable)/2

COGS per day = COGS/365

To calculate CCC, you need to include several items from the financial statements:

* Income statement: revenue and COGS
* Balance sheet
	+ Beginning and ending inventory
	+ Beginning and ending accounts receivable
	+ Beginning and ending accounts payable
* Note that for balance sheet items, because they capture a snapshot in time, you want to average over the period of time that you investigating. So if you are looking at 1 year, then you need to look at the ending period for the current year and the same ending period for the previous year

Let’s use an example to explore this equation in more detail. Suppose you are making men’s shirts and selling them through a retail channel. The DIO is 80 days. You purchase enough cotton material to make a shirt. This purchase creates an obligation for the shirt maker to pay (account payable) for this material in 30 days (DPO). The raw material arrives (inventory) and the manufacturing process begins.

At the end of 80 days, the completed shirt is sold to the retailer (DIO). The retailer now has an obligation to pay the shirt maker (account receivable) - and in this case takes 40 days to pay for the completed shirt. This means that from the time cash left the shirt maker 30 days after the purchase of raw material it took 90 days for cash to make its way back to the shirt maker. In this case the formula would be:

CCC = DSO + DSO – DPO

 = 80 + 40 – 30

 = 90

Raw Material Arrives – Day 0

Cash Conversion Cycle or Cash Gap = 90 Days

Cash Received – Day 120

DSO = 40 Days

100

Cash Paid Out – Day 30

DPO = 30 Days

Inventory Sold – Day 80

DIO = 80 Days

0

130

120

110

90

80

70

60

50

40

30

20

10

The cash conversion cycle, or days that it takes for cash to return to the business, must be funded. In short, any increase in sales usually results in an increase in working capital necessary to support this higher level of sales. Therefore, you must be able to fund the growth of the company.

As a stand-alone number the cash conversion cycle doesn’t tell you much. Like many other metrics and ratios it must be compared over time and to other competitors in the industry. In general, a decreasing cash conversion cycle is a good thing, while a rising cash conversion cycle should motivate you to look a little more deeply into the management policies of the business to try and find the cash necessary to fund the company.

**H1 5. Building Pro Forma Financial Statements H1**

LO 5. Discuss how you would build a pro forma financial statement

The pro forma financial statement should include at least three scenarios of your financial forecast each containing an income statement, the balance sheet, and the all-important cash flow statement. Each scenario manipulates the various revenue and cost drivers in an attempt to determine where there is leverage in the business model to deal with what may go right and what may go wrong. All of your assumptions and estimates should be carefully documented and built into themodel so that you can dynamically change them to conduct “what if” analyses in real time. While there are many pre-existing dynamic pro forma models on the Internet, be[[4]](#endnote-4) mindful not to merely insert estimates randomly without corresponding backup for every assumption. Anyone who has been through this process knows that the numbers are estimates that will change over time, but you must be able to defend every assumption and the components must logically support one another. In the end, the pro forma financial plans must be strategically compelling and operationally achievable, and must convey both confidence and realism to investors.

Remember that your goal is to determine how much absolute cash is required to get to cash flow break-even and how this cash might be logically staged so that you can achieve a step-up in valuation at each stage. It is worth noting that items will emerge that you have not considered and that items that you have considered will be magnified to either the positive or negative. While it can be a time-consuming process, there are major benefits to providing a pro-forma statement. Firstly, it gives investors a degree of comfort that you understand how to build a business and execute the business model. Secondly, it shows that you have a good understanding of how the market may evolve and how to respond to these changes. Finally, it is a useful way of providing structure and discipline as operating decision points arise.

**H2 The Mechanics and Research H2**

 All too often entrepreneurs begin the process with an existing model or business planning software and before long find themselves tweaking elements of the model to “make the numbers work.” It is best by setting the spreadsheet models aside and thoroughly researching various business model elements that drive revenue and costs. This process requires both primary and secondary research.



**<<H2>>Research<<H2>>**Much of your research should focus on the customer and market size and growth potential. A common beginner mistake is to assume that an exceedingly large population is your market and all you will need to do is get 1% of that market to be successful.

While understanding the aggregate market size is useful, it is recommended that you segment your market in greater detail to better understand the various subgroupings and their respective buying habits and behaviors. Understand how they differ and how they are similar in terms of needs, expectations, price sensitivity, amount and frequency of purchase to name a few.

For the purpose of forecasting, it is also useful to understand how each subgroup is growing and changing over time. In general, the more you know about your primary and secondary target markets, the more reliable your forecasts will be.

**Primary research** refers to data gathered by yourself through sources such as focus groups, interviews, and surveys; and **secondary research**  refers to data gathered from external sources such as industry publications, websites, government agencies etc.

Articles and research reports can be useful as a means to get smart on an industry, but given the pace with which markets develop today the data can get stale rather quickly. It is more beneficial to use primary data gathered in real time through observation, conversation, and rapid prototyping.

One useful approach is to first determine the questions that need to be answered about your target market, channels of distribution, required resources, cost drivers and revenue drivers. Next consider the data that is required to answer these questions. When you have gathered that data, then think about the primary and secondary sources of the data.

Remember to document the source of every assumption so that you can reference it if asked. Let’s say that you want to start a pizzeria restaurant. Let’s call it Town Pizza. Below is an example of some of the critical questions that you will want to answer before even opening a spreadsheet.

|  |  |  |
| --- | --- | --- |
| **Key Questions** | **Data Required** | **Sources** |
| **Primary** | **Secondary** |
| **Customer and Market** * What is pizza consumption in the U.S.?  Is it growing?
* Who eats pizza, how much and when?
* When is pizza consumed most?  What days of the week?  Time of year?
* What is the population and composition of households in Wellesley, MA?  What is the college population?  What is the working population?
* What percentage of these people will be likely diners? (lunch, dinner)
* How can you estimate the traffic to our pizzeria and typical purchase order?

 **Revenue Drivers*** What else is sold at the typical pizzeria restaurant? (sandwiches, salads, pasta, beverages)
* What is the consumption of these items relative to pizzas?
* What is the average order?  What are the average prices for each item?
* What is the contribution margin?
* What are breakeven points?

**Cost Drivers*** What does it cost to make a pizza? A sandwich? A salad? etc.?
* What is the average size of a pizzeria?
* What does build out cost?
* What are the typical operating expenses? (monthly, yearly)
* What costs are fixed? Which are variable?
* What fixed assets are needed? (equipment)  What does it cost? Should you buy new or used?
* What are the working capital requirements
 | U.S. pizza consumption dataCensus dataTraffic patternsDemographicsTypical pizza restaurant menu and pricingAverage pizzeria statistics Ingredients costReal Estate dataConstruction estimatesOpEx and CapEx for typical pizzeria | Pizzeria owners, managers, and employeesVarious customer segments of the pizzeria dining marketAssociationsConsultants and expertsAccountants, Lawyers, Real Estate AgentsSuppliersContractors | Industry research reportsAssociation researchTown CensusPeriodicalsNews articlesWebsites/BlogsNew and Used Equipment sitesAnnual Reports |

 In addition to fundamental market research, it is also useful to find some yardsticks, or generally accepted rules of thumb for your industry. The best source of this information can usually be found by examining businesses that are comparable to yours in terms of industry and business model. There are numerous approaches to finding this information. Secondary sources are readily available on the Internet and include everything from historical data from public companies to industry associations and publications.[[5]](#endnote-5) Similarly, primary data can be gathered through interviews with experts, business owners, potential customers and observation. The comparable data will be extremely useful in both forming and validating your assumptions.

**H2Building Assumptions: Forecasting Sales H2**

 Forecasting sales can be a complex process.

 One useful method to estimate sales is the Bottoms Up or Build Up Method. This involves first estimating revenue and costs from the smallest unit of sales and building up from there.

 Let’s apply this method to the Town Pizza example. As you can see from the revenue worksheet (Figure XX), Town Pizza sells pizza, sandwiches, salads and drinks. By using the build up method you can present the assumptions gathered from yourresearch to estimate revenue for a typical day, and then extrapolate what that revenue might be for a typical month and year.

**Figure XX REVENUE WORKSHEET**

|  |  |  |  |
| --- | --- | --- | --- |
| **Product Description** | **Suggested Price** | **Est. Units per Day** | **Average Daily Revenue** |
| Pizza | $13.00 | 42 | $546.00 |
| Sandwich | $8.00 | 21 | $168.00 |
| Salad | $8.00 | 11 | $88.00 |
| Beverage  | $2 | 37 | $74.00 |
| **Total Average Daily Revenue**  | $876.00 |
| **Total Average Monthly Revenue @ 30 days/month****\* Does not account for seasonality spikes** |  **$26,280.00** |
| **Assumptions:**U.S. Pizza Market * Average traffic 370 customers per month
* Average daily pizza sales = 42
* Sandwich sales are 50% of pizza sales
* Salad sales are 50% sandwich sales
* Beverages are 100% of pizza and sandwich sales
* Seasonal spikes – SuperBowl (Feb), Halloween (Oct), Thanksgiving (Nov), Christmas (Dec)
* Typical pizzeria average annual sales = $396,594
* 94% of Americans eat pizza, Average = 46 slices or 5.75 pizzas per year
* Pizza market is growing approximately 2% annually

Market Size / Growth* Population = 27,982 (Households = 8,594), College Students = 5974, Business employees = 1050 (Total Pop 35,006)
* 62% of households < 45 years old (does not include college students and business employees)
* Growth 1% per year
* Currently 5 pizza restaurants in town
 |

As Figure XX shows, themonthly revenue has been estimated before accounting for seasonal spikes to be $30,930.00 or $371,160 per year. This foots pretty closely to the national average of $396,594, which does include seasonal spikes, so our bottoms up approach appears to be feasible.

Furthermore, you can examine the market data to see if there will be sufficient demand for our pizzeria by using a tops down approach. As you can see in the assumptions, the town is comprised of 8,594 households of which 62% are age 45 and less. Just to be conservative, let’s assume that your primary target market is people aged 45 and younger, and likely to be either college students or families. That would leave 16,517 people in town under the age of 45. Add to that the college students and workers who come into town each day and the figure becomes 23,541. So, if 94% of these people eat pizza and the average person eats 5.75 pizzas in a year that means that approximately 127 thousand pizzas are eaten by this population yearly. If the average pizzeria serves 14,400 pizzas per year and there are currently only 5 pizzerias in town, then there should be an ample room in the market for our new venture.

 The process of gathering the data and formulating the assumptions helps you better understand the business model and the levers that might be used to generate more revenue. For instance, will spending more on advertising and promotions bring more people to the store? This type of scenario or sensitivity analysis can be explored in more detail once you have completed building the integrated pro forma financial statements.

 Now that you have this baseline to work with, you can plot out what the first two or three years of revenue might look like on a month, quarterly and yearly basis. This would also allow for you to make estimates for seasonal spikes or lows.

**H2 Building Assumptions: Cost of Goods and Operating Expenses H2**

 With a firm estimate on top line revenue you can now turn your focus to estimating costs. The first cost item on theiIncome statement is Cost of Goods Sold (COGS). Recall that COGS includes the cost of raw materials and direct labor in the production of the product. Here you can once more use the build up method to estimate the exact costs for each product, or as a first cut, you might want to use comparable data from a typical pizzeria.

Say you have found that the average raw materials and labor cost for a typical independent pizzeria is 35%. Given your estimated monthly revenue of $30,930.00, COGS would be $10,825 leaving you with a Gross Margin of $20,104 or 65%.

**COST OF GOODS WORKSHEET**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Product Description** | **Suggested Price** | **Est. COGS (%)** | **Est. Units per Day** | **Gross Margin ($)** |
| Pizza | $13.00 | 30% | 42 | $163.80 |
| Sandwich | $8.00 | 31% | 21 | $52.08 |
| Salad | $8.00 | 25% | 11 | $22.00 |
| Beverage  | $2.00 | 13% | 37 | $9.62 |
| **Total Gross Margin** | $247.50 |
| **Total Monthly Gross Margin** | **$7,425.00** |

 Businesses also incur operating expenses (see Figure XX), such as salaries, rent, advertising, marketing, and possibly research and development. These costs can also be estimated and validated through primary and secondary research. Reliable estimates can be accomplished through internet research and validated through conversations with pizzeria owners, associations, accountants, lawyers, real estate brokers, and government officials, to name a few. It is worth sweating the details to get these estimates as close to the actual expenses as you possibly can. Once again the build up method is employed to round these numbers up to the monthly or yearly costs.

**Figure XX OPERATING EXPENSE WORKSHEET**

|  |  |  |
| --- | --- | --- |
| **Operating Expense Type** |  | **Estimated Monthly Expense** |
| Rent |  | $2,333.00 |
| Labor |  | $7,925.00 |
| Outside Services |  | $275.00 |
| Credit Card Processing (1.9% of Sales) |  | $500.00 |
| Utilities |  | $525.00 |
| Advertising and Coupons |  | $100.00 |
| Maintenance and Contingency |  | $500.00 |
| Repair & Maintenance |  | $100.00 |
| Insurance |  | $250.00 |
| Office Supplies |  | $75.00 |
| Equipment Rental |  | $250.00 |
| **Total Monthly Expenses** | $12,833.00 |
| **Total Monthly Operating Profit** | **$6,022.00** |
| Assumptions:Rent – 1000 sq. ft. at $28/year = $62,500Labor – 1 Mgr, plus 3 hiresFringe Rate = 15%CC Processing – 1.9% of sales |

 As you can see from the worksheet, the estimated operating profit is $5,103.21. This is not to be confused with net profit, which is profit after interest, depreciation and taxes have been paid.

<<H2>> Labour estimates <<H2>>

It is worth noting at this point that a more complex business that might involve research and development of a product and a greater number of employees would require a more detailed approach to structuring new hires. In many types of business people can account for 75% to 85% of operating costs. Therefore, the schedule of new hires must be carefully thought out and matched to product development and sales requirements and milestones.

Given the time and cost involved in screening, hiring, and onboarding new employees a plan should be constructed for each department that takes these items into consideration. A common mistake is to hire people too quickly and terminate poor performers too slowly. However, regardless of the size or complexity of your business, it is good practice to build a simple table to estimate this expense separately.

**Figure XX LABOR ESTIMATES**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Position** |  | **Est. Annual / Hourly Wages** | **March**  | **April** | **May** | **….** |
|  Manager |  | $31,200 | $2,650.00 | $2,650.00 | $2,650.00 | **….** |
| **Hourly Employees** |  |  |  |  |  | **….** |
|  Kitchen Staff |  | 1 @ $13 per hr. \* | $2,297.00 | $2,297.00 | $2,297.00 | **….** |
|  Counter / Wait Staff |  | 2 @ $11 per hr. \* | $1,944.00 | $1,944.00 | $1,944.00 | **….** |
| Benefits |  | 15% | $1033.00 | $1033.00 | $1033.00 | **….** |
| **Total Monthly Cost** |  |  | $7,924.00 | $7,924.00 | $7,924.00 | **….** |
| **Assumptions:*** 1 Manager
* 1 Kitchen Staff
* 2 Counter Staff
 |

With your top line revenue and operating expense worksheets completed you can now turn your attention to expenditures (see Figure XX) necessary to build out and run the business. These expenditures, or capital expenses, will not appear as a line item on your income statement. Since the expenditures below will be used over a period of time, usually more than a year, they will appear on your balance sheet as an asset and on your cash flow statement as an outflow. What will appear on your income statement is depreciation, which reflects the annual decrease in value of these assets over their useful lives.

**Figure XX CAPITAL EQUIPMENT AND OTHER EXPENDITURES WORKSHEET**

|  |  |  |
| --- | --- | --- |
| **Expenditures** |  | **Estimated Cost** |
| Pizza Ovens |  | $21,995.00 |
| Walk-in Refrigerator  |  | $10,500.00 |
| Pizza Table / Work Tables |  | $13,000.00 |
| Mixer |  | 3,500.00 |
| Prep Sink / Dish Washer |  | $1,350.00 |
| Pots & Pans |  | $500.00 |
| Phone, POS, Coolers, CC Machine, Misc. |  | $1000.00 |
| Restaurant Build Out |  | $33,500.00 |
| Signage |  | $1,250.00 |
| **Total Expenditures** |  | **95,595.00** |
| **Assumptions:*** All prices assume new purchases; best efforts will be made to purchase used equipment in good repair
* Build Out estimate provided by contractor for 1000 sq. ft. including restroom (carpentry, electrical, plumbing labor included. Fixtures broken out separately)
 |

**<<H1>>6. Building Assumptions: Operating Policies and Other Key Assumptions<<H1>>**

**LO 6. Explain how to apply assumptions when building pro forma statements.**

As we saw earlier when describing the Cash Conversion Cycle (CCC), operating policies can greatly affect the speed at which cash makes its journey back to the company. In constructing pro forma financial statements these policies need to be carefully considered and enforced by the company. Some of the more critical policies are listed below:[[6]](#endnote-6)

* **Purchasing Policy** – The price and timing of raw materials, and other goods and services necessary to build, sell and support products.
* **Pricing Policy** – How pricing will be determined for your products and services.
* **Compensation Policy** – The level of compensation and benefits for each type of position in the business.
* **Credit Policy** – The process and timing in which obligations to pay for products and services sold will be billed and collected.
* **Payables Policy** – The process and timing in which obligations to pay for good and services received by the business will be paid.
* **Inventory Policy** – The level of various types of inventory (e.g., raw materials, work-in-process, finished goods) maintained and the speed with which inventory moves from the business to the customer.

There are other critical assumptions that can affect the timing of cash flows both into and out of the business. For instance, when do you expect to make the first sale and how long will it take for the business to ramp up to full capacity? In our pizzeria example, it may take several months to obtain permits and complete a build out of the restaurant before the grand opening. Then it may take several more months before advertising efforts begin to bring in the traffic that you anticipated would be necessary to achieve peak sales. This logic can also be extended to the productivity of new hires, Be sure that you take into account the time and training it may take before new hires hit their stride and begin achieving the established sales quota.

Assumptions much also be considered for local, state and federal taxes, interest, and inflation. Understand how your various expense related items might increase over time as well. It is important to carefully document the source of every assumption made in the event that you have to revisit it, or defend it during due diligence.

**H2Building Integrated Pro Forma Financial Statements H2**

With your research and analysis completed and assumptions made, you are now ready to build integrated pro forma financial statements. The logical place to begin is with the income Statement. Using the validated assumptions from the revenue worksheet, build out a monthly pro forma income statement, balance sheet and cash flow statement for a minimum of two years followed by years 3 through 5 on an annual basis. This time horizon will give you a good sense for the value-producing ability of the business.

When building your pro forma statements, remember thelinkages between the three Financial Statements, described earlier and ensure you understand how changes on one statement can effect the other statements. Understanding these linkages and especially how cash makes its journey through the business can mean the difference between success and failure - it is essential that you understand how the growth in your business will be funded and the amount of funding you will need until your business is producing enough cash to survive without constant external funding.

The cash flow statement is used to determine when and how much funding is required to get the business off the ground and support growth in the earlier years. This can be achieved by leaving the third section, financing activities, blank to determine the cumulative amount of cash needed. (See example – I will provide a complete set of financial statements for Town Pizzeria)

**H2 Sensitivity Analysis H2**

With the first full set of pro forma financial statements completed, you can now begin to address critical assumptions related to the revenue and cost drivers to test what your business might look like in different scenarios relating to customer traffic and seasonality, or cost of raw materials. For instance, if the restaurant were to open in the summer, might customer traffic be lighter due to vacationing college and high school students? If so, how might that effect revenue? Alternatively, what costs might need to be adjusted during peak selling months and how might that affect cash flow and profitability?

During this analysis, a minimum of three scenarios is recommended – best case, worst case and likely case. Thinking through the drivers and operating policies and understanding what can go right, what can go wrong, and what you would do to mitigate any controllable circumstances is probably the greatest benefit to building pro forma financial statements.

 **H2 Reasonableness Test H2**

Using comparable data that you gathered during your research, compare your statements to those of similar businesses. Unless you have an entirely new and disruptive business model, your numbers should not be too different from businesses of similar size and scope.

Specifically, take a look at your top line revenue and determine whether sales ramps too quickly or too slowly. Have you accounted for seasonal changes in demand? Does the rate of sales growth level off at some point in time? Do expenses continue to rise in lock step with sales, or should you expect to achieve scale effects that allow COGS and other operating expenses to grow at a slower rate as sales increase? Are there other efficiencies to your business model that are reflected in your operating policies?

Consider all of the questions that a potential investor may have about your business model and its effects on your financial model and be prepared to answer them using data from your research and comparable analysis. If certain numbers do not pass the reasonableness test, revisit your assumptions until you are comfortable and confident that you can defend the model.

SUMMARY

KEY TERMS

**Income Statement -** a financial report which measure the financial performance of your business on a monthly or annual basis.

**Balance sheet** - a financial statement which shows what the company owes, what it owns, including the shareholder’s stake, at a particular point in time.

**Cash flow statement** - a financial report which details the inflows and outflows of cash for a company over a set period of time.

**Operating profit** – the amount left over from revenue once all costs and expenses are subtracted.

**interest expense**, -the extent of the company’s debt burden as well as representing any interest owed on borrowed money.

**net income** - indicates what is left after all costs, expenses and taxes have been paid.

**backlog** –orders that have been received but not delivered to the customer

**Operating expenses** - the expenditures that the company makes to generate income.

**current assets** - cash and other assets that can be converted into cash within a year.

**Accounts receivable** - money owed to the company for goods or services provided and billed to a customer.

**Prepaid expenses** - the payments the company has already made for services not yet received.

**Goodwill** - the price paid for an asset in excess of its book value. You will see this on the balance sheet when the company has made one or more large acquisitions.

**Intangible assets** - the value of patents, software programs, copyrights, trademarks, franchises, brand names, or assets that cannot be physically touched.

**Long Term Investments** assets that are more than one year old and are carried on the balance sheet at cost or book value with no appreciation.

**Liabilities** - economic obligations of the company, such as money owed to lenders, suppliers and employees

**Current liabilities** - bills that must be paid within one year of the date of the balance sheet.

**Long-term debt** - an obligation (usually to a bank) for debt that is due to be repaid in more than 12 months.

**Shareholders’ equity** - the money that has been invested in the business plus the cumulative net profits and losses the company has generated

**Retained earnings** – the cumulative amount of profit retained by the company and not paid out in the form of dividends to owners

**Capital Stock** –the original amount the owners paid into the company plus any additional paid-in capital to purchase stock in the company.

**Primary research** - refers to data gathered by yourself through sources such as focus groups, interviews, and surveys.

**Secondary research**  -refers to data gathered from external sources such as industry publications, websites, government agencies etc.

**Purchasing Policy** – The price and timing of raw materials, and other goods and services necessary to build, sell and support products.

**Pricing Policy** – How pricing will be determined for your products and services.

**Compensation Policy** – The level of compensation and benefits for each type of position in the business.

**Credit Policy** – The process and timing in which obligations to pay for products and services sold will be billed and collected.

**Payables Policy** – The process and timing in which obligations to pay for good and services received by the business will be paid.

**Inventory Policy** – The level of various types of inventory (e.g., raw materials, work-in-process, finished goods) maintained and the speed with which inventory moves from the business to the customer.

**Current liabilities** - bills that must be paid within one year of the date of the balance sheet. **Accounts payable**  - money owed by a business to its suppliers.

**Accrued expenses** are costs incurred by the company for which no payment has been made.

 **Short-term debt** - the portion of long-term debt that must be paid within a year.

**Other current liabilities** - short-term liabilities that do not fall into a specific category such as sales tax, income tax etc. .

**Long-term debt** - obligation for debt that is due to be repaid in more than 12 months.

**Shareholders’ equity** - the money that has been invested in the business plus the cumulative net profits and losses the company has generated.

1. Buffet, M. and Clark, D., Warren Buffet and the Interpretation of Financial Statements. (New York, NY: Scribner, 2008, p. 33). [↑](#endnote-ref-1)
2. Ittelson, T.R., Financial Statements: A Step-by-Step Guide to Understanding and Crating Financial Reports. (Pompton Plains, NJ: Career Press, 2009, p. 16-17) [↑](#endnote-ref-2)
3. Ittelson, T.R., Financial Statements: A Step-by-Step Guide to Understanding and Crating Financial Reports. (Pompton Plains, NJ: Career Press, 2009, pp 79-82). [↑](#endnote-ref-3)
4. <http://www.eznumbers.com>; <http://marketing.lonee.com>; [↑](#endnote-ref-4)
5. <http://www.bizminer.com>; <http://www.ibisworld.com>; <http://www.statista.com> [↑](#endnote-ref-5)
6. Smith, J.K. and Smith, R.L., Entrepreneurial Finance: 2nd Edition. (Wiley; 2004, pp 144-146). [↑](#endnote-ref-6)