Feasibility Analysis

If you have to write a business plan for a new business or venture, I implore you to do a Feasibility Analysis before you do a business plan! Why? Because you need to verify the enterprise is viable before you spend the time and money into doing a full-blown business plan. Do not worry, any information you gather and the time you spend on the Feasibility Analysis will be directly useful in developing the business plan.

The purpose of the Feasibility Analysis is to make sure that you are on the right track – who wants to be on the wrong track. Two basic questions need to be answered with the analysis:

1) Is there sufficient demand for the product or service?
2) Can the product or service be provided on a profitable basis?

Please note that a Feasibility Analysis is not a whole study of the anticipated business – but more like a preview of the business plan with the cogent issues discussed.

The Feasibility Analysis should be no more than 5 (five) pages suggested in length (and I mean suggested):

I. A brief overview of what the business is about (1 page).

II. Overview of the market for the product or service and the results of the market analysis (1-2 page(s)).

III. Competitive advantage of your product or service over the competitor, and the strengths and weaknesses of your competitors (1 page).

IV. Rough proformas, including the income statement, which should show the expected level of profit over the next five years (1-2pages).

Please, please remember as you write the Feasibility Analysis that the whole purpose for this document is to assist you in assessing whether or not to move on with your business concept. If at this stage it looks as if your idea is not feasible – that is okay. Like most entrepreneurs, you have tons of ideas and the nature of the Feasibility Analysis is to ensure that you embark on your path of the tremendous success. If a few ventures do not pass the mustard (or is it ketchup), then this is fine. We all have options and we must be very careful not to fall in love with the first, or second, idea that pops into our heads. The primary purpose, therefore, of the Feasibility Analysis is to act as filter or screening device.

I would recommend that you not only limit the pages of this document (5), but that you also limit your time as well to no more than 12 to 16 hours.

Okay, how do you get started? Well, the first step is to draft a brief description of the business. Shown below is an example write-up:

> Safe-Temp Baby Bottle
>
> This new business venture will develop a plastic temperature device to measure the temperature of liquids in a baby bottle. The device will be a spiral spring looking device (which is patent pending) that fits down the center of an existing baby bottle to indicate to the parent the current temperature of the liquid inside the bottle.
>
> The product currently has superficial competition form the XYZ company which produces a bottle with a device attached to the outside of the bottle and therefore can not measure the temperature of the liquid in the middle of the bottle.
>
> The manufacturing of this product will be out-sourced and the firm will concentrate on sales as an operating expense for the other plastic baby bottle sellers by hiring a sales manager who has the necessary contacts to get the product sold.
>
> The distribution will be done by the contracts with the manufacturer to inventory and ship the products as needed.

Notice how in the above discussion just the basics of the Feasibility Analysis are laid out, including some information about production and sales.

The next step in the Feasibility Analysis is to do the market analysis. Of course you are saying, "What is a market analysis?"

A market analysis is simply the act of ascertaining if there is the demand for the product or service. This is the heart of both the Feasibility Analysis and the business plan. You must show on an empirical level, that people want to buy your products or services. I can not stress how important this step is in the Feasibility Analysis. I implore you, I beg you to do a thorough job in this area as it is so, so important.

Okay, you are convinced it is important or I have brain washed you, now how do you do this marketing analysis? Well like most things there are two parts:

1) Looking at the health of the industry.

2) Quantifying the demand for the product or service.

Health of the Industry

By health of the industry I mean looking at the industry you are going to be operating in and assessing its viability and future growth. The US INDUSTRIAL OUTLOOK is a great document that assesses the health of numerous industries. Also, you might want to check out the web for various sources (do not want to list anything here as things tend to change so rapidly). Also, please feel free to call your local reference librarian, as they are happy to help (my wife is going to kill me for this, as she is a reference librarian).

One of the key elements in this section is to ascertain the future growth of the industry. This is important as you do not want to be selling in a declining market, if you can avoid this. Clearly you do not want to be in the adding machine business when computers are coming out.

Where do you go to get this information? Most industries put out estimates of future growth rates. Look for the industry publications on the web.

Sometimes, unfortunately, you will not be able to find industry information. Do not give up, and "persevere". However, if you still can not find this information, there are a couple of alternatives to assist you.

One way to get some quick industry data or growth rates is to look at other firms in the industry and what analysts are saying as to their expected growth rates. For example, I may not be able to find data on baby bottle temperature industries but the health of the industry will be a great surrogate.

Quantifying the demand for the product or service

Of the parts of the Feasibility Analysis that we have discussed so far, quantifying the demand for the product or service is the most critical. It is this portion of the Feasibility Analysis that states what people will pay to buy your product. One thing you do not want to do, is ask your friends or relatives what they think of your products or services, but they are a great choice for sources of funds. They clearly are not going to be your friends very long if they give you negative feedback, and at this stage of the analysis you need as much feedback, both positive and negative, as is possible.

It is preferable for you to do a survey of at least 20 people who are randomly selected. By random selection, I am not talking about surveying folks from just standing in front of the grocery store. Try to get as many varied people (in terms of age, gender, and race) as you can. The written or verbal should contain at brief description of the product and at least the following two questions:

1) Would you buy the product or service? ______YES ________NO
2) If you answered yes to the previous question, what would you be willing to pay for the product?

Some other questions to ask this time would be:

A) What suggestions would make you want to buy this product more (The more input, the better)?
B) Where would you expect to find this product for sale (This helps in planning distribution)?
C) If you did not want to buy this product or service, why? (This is very important information)
D) Any other comments that they may want to give.

By doing this study of market demand you are verifying that people would consider buying your product and the numbers serve as the basis for ascertaining if you can generate adequate levels of profitability.

What happens, however, if the results are very negative? Then there could be two problems, first it could mean that the sample of people you surveyed is not representative of the entire market. If is the case then you just need to do another test in different geographical areas. If you repeat the process again, and still find yourself receiving negative responses; then it is time to consider abandoning the project. While this at the time might seem harsh, it is even harsher for you to continue on with the project if people will not buy your product.

I have seen numerous projects that should have stopped at this point, continue on and the entrepreneurs lost all of their money and had to file for bankruptcy.

It is better to pull the plug early on a project and devote your energy and finances to other projects that will be successful.

Competitive Advantages-

This next section of the Feasibility Analysis is divided into two parts.

A) Competitive Advantages

B) Strength and weaknesses of your major competitors

With competitive advantages it is important to lay out what really differentiates your product from your competitors. Some of these ideas could be:

A) Quality

B) Features

C) Location

D) Price (Not a good idea)

E) Service

F) New Application

Price is not a very good competitive advantage for most entrepreneurs as it does not generate repeat business. Most entrepreneurs want and need to have repeat business. By selling on a price basis you do not generate repeat business. Customers are only interested in price and are not loyal to the business – this is not the type of customers an entrepreneur should be after.

The strengths and weaknesses of the competition portion of the Feasibility Analysis is where you need to list each competitor and their critical attributes on how they relate to your product. SWOT analysis looks at the Strengths, Weaknesses, Opportunities and Threats which surround your business. This helps the entrepreneur to asses the viability of their options and determine a competive advantage.

The last section (finally we get to this) of the Feasibility Analysis is the financials. In this section we need to determine the firm's breakeven point and a proforma or forecasted income statement. The purpose of this section is to quantify if we can generate a profit off the product or service. While having a demand for the product or service is great, the litmus test of the entire Feasibility Analysis rests on the financials. We want to know does it look reasonably promising that the business will make adequate money (very important)!

Breakeven Analysis

(Here we go into some simple math so hang on). The breakeven point is the dollars of revenue or units of sales that will be necessary to cover both the fixed and variable expenses.

In order to find the breakeven point, we need to find where

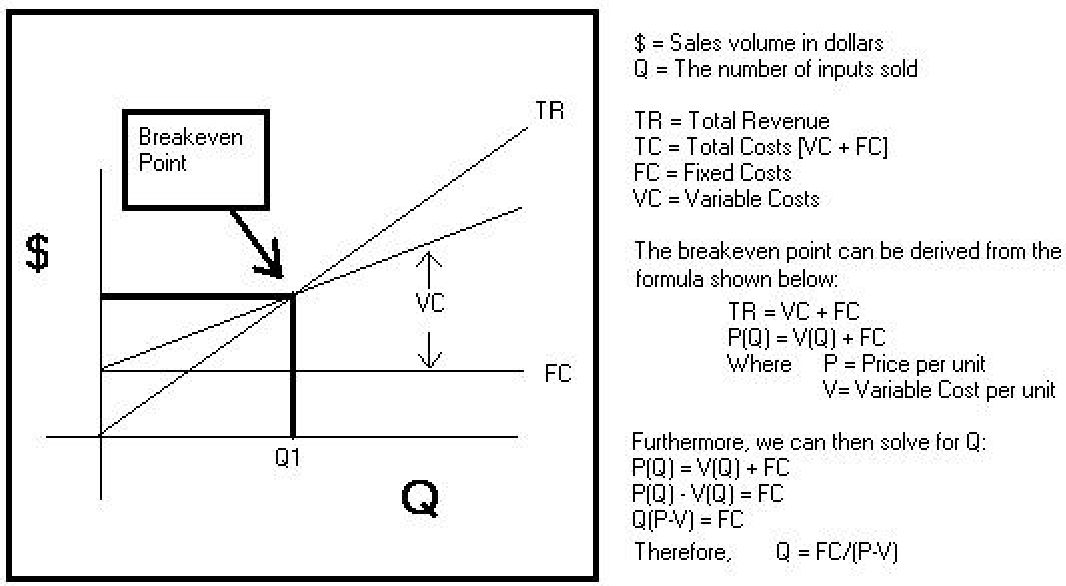
TR = VC + FC

Where, TR = Total Revenue,

VC = Variable Costs, and

FC = Fixed Costs.

At the point where TR = VC + FC this is the breakeven point and this can be shown in the graph below (first equations and now graphs!):



The breakeven value can be ascertained by solving for Q. The simplest way to demonstrate this is by doing a problem.

- Suppose a firm is going to introduce a new product. They hope to wholesale the new product at $12. Their fixed costs are expected to be $50,000 (rent, utilities, etc.) and the variable coat of their product is expected to be $2 per unit, which is composed mainly of labor expenses.

  The breakeven point is:

  Q = $50,000 / ($12-$2)

  Q = 5000 units

Okay, so what does this mean? It means that if we expect have sales higher than 5000 units, we will make a profit. So if we are considering the project, we would to be darn sure that our sales are going to exceed this number, before we do a full-blown business plan.

Proforma Statement

A proforma income statement is just fancy buzzwords for a forecasted income statement. The proforma income statement is just a statement of future profitability of the business broken down into revenue and expenses. The revenue will be a function of the market research you have done, adjusted for growth rate in sales. For example, if you forecast that you will generate sales of $1,000,000 in the first year of operations then estimate (we will refine this growth rate in the business plan) the expected growth in sales. So if we anticipated sales in year 1 to be $1,000,000 and then grow at the 10% growth rate, the resulting sales levels are shown below.

Year	1	2	3	4	5
Sales	$1,000,000.00	$1,100,000.00	$1,221,000.00	$1,343,000.00	$1,475,000.00

Remember in the Feasibility Analysis that we are not trying to get these sales estimates exact, but rather we just need to have numbers that are in the ballpark.

The next step in the proforma income statement development is to estimate what various expenses per year will be. Some of the typical major expenses will be:

1. Cost of Goods Sold (COGS).
2. Rent.
3. Labor.
4. Utilities.
5. Office supplies.
6. Advertising.
7. Administrative.
8. Miscellaneous.

Then we apply these costs to the sales estimates to produce a proforma income statement that is similar to one shown below:

Year	1	2	3	4	5	NOTES
Sales	$1,000,000	$1,100,000	$1,210,000	$1,331,000	$1,464,100	10% Increase
COGS	$600,000	$660,000	$726,000	$798,600	$878,460	60% of sales
Gross Profit	$400,000	$440,000	$484,000	$532,400	$585,640	Sales - COGS
Operating Expenses (O.E.)						
Rent	$20,000	$21,000	$22,050	$23,153	$24,310	5% Increase
Labor	$125,000	$131,250	$137,813	$144,703	$151,938	5% Increase
Utilities	$15,000	$16,050	$17,174	$18,376	$19,662	7% Increase

Advertising	$40,000	$44,000	$48,400	$53,240	$58,564	4% of Sales
Administrative	$25,000	$26,250	$27,563	$28,941	$30,388	5% Increase
Misc.	$3,000	$3,150	$3,308	$3,473	$3,647	5% Increase
Total O.E.	$228,000	$241,700	$256,306	$271,885	$288,509	
PBT	$172,000	$198,300	$227,694	$260,515	$297,131	Profit Before Tax
Tax	$51,600	$59,490	$68,308	$78,155	$89,139	Assume 30%
PAT	**$120,400**	**$138,810**	**$159,386**	**$182,361**	**$207,992**	Profit After Tax

Notice that there is profit attained in every year (but this is not necessarily a requirement), therefore, we can move on to the full-blown business plan. If the PAT resembles the following example:

Year	1	2	3	4	5
PAT	-$50,000	-$90,000	-$100,000	-$200,000	-$250,000

We should then reject this idea and move to a more profitable and viable business venture.

A Complete Feasibility Analysis

Shown below is a complete Feasibility Analysis for our baby bottle temperature indicator business.

SAFE-TEMP Baby Bottle Temperature Indicator

I. Overview

This new business venture will develop a plastic temperature device to measure the temperature of the liquid in a baby bottle. The device will be a spiral spring looking device (which is patent pending) that fits down the center of an existing baby bottle to indicate to the parent the current temperature of the liquid inside the bottle.

The product currently has superficial competition form the XYZ company which produces a bottle with a device attached to the outside of the bottle and therefore can not measure the temperature of the liquid in the middle of the bottle.

The manufacturing of this product will be out-sourced and the firm will concentrate on sales as an operating expense for the other plastic baby bottle sellers by hiring a sales manager who has the necessary contacts to get the product sold.

The distribution will be done by the contracts with the manufacturer to inventory and ship the products as needed.

II. Market

After peaking in 1990 at 4.16 million births in the United States (U.S.), the number of newborn children has stabilized at 4 million, and is not expected to deviate from this number much. The current baby bottle market in the U.S. is estimated at $154 million, or 73 million units, per year.

Year	1	2	3	4	5
Revenue	$4,620,000	$5,544,000	$6,652,800	$7,983,360	$9,580,000

III. Competitive Advantages

All though there are several major competitors in this industry, **none** of them has attempted to market a temperature indicator.

However, XYZ Bottle manufactured a similar product where the gauge (temperature indicator) is on the outside of the bottle. This product was withdrawn from the market as it was an inaccurate indicator of temperature.

Survey-

An empirical survey was done of women who had recently given birth to a child. A sample of 30 women surveyed, where 50% said they would be willing to pay an extra $.50 a bottle for the temperature gauge. Many of these women said they were willing to buy the product right now!

If we assume that we can get 3% of the market the first year (reduced a whole bunch from our sample) and the market growth is estimated to be 20%. The 20% growth rate is not the market (?), rather we are capturing a greater share of the market. Shown below are revenue estimates for our company.

Year	1	2	3	4	5
Revenue	$4,620,000	$5,544,000	$6,652,800	$7,983,360	$9,580,000

IV. Proformas

Year	1	2	3	4	5	NOTES
Sales	$4,620,000	$5,544,000	$6,652,800	$7,983,360	$9,580,032	20% Increase
COGS	$2,310,000	$2,772,000	$3,326,400	$3,991,680	$4,790,016	50% of Revenue
Gross Profit	$2,310,000	$2,772,000	$3,326,400	$3,991,680	$4,790,016	Sales-COGS
Operating Expenses (O.E.)						
Rent	$ 50,000	$ 52,500	$ 55,125	$ 57,881	$ 60,775	5% Increase
Labor	$1,000,000	$1,100,000	$1,210,000	$1,331,000	$1,464,100	10% Increase
Utilities	$ 84,000	$ 88,200	$ 92,610	$ 97,241	$ 102,103	5% Increase
Advertising	$ 500,000	$ 525,000	$ 551,250	$ 578,813	$ 607,753	5% Increase
Admin.	$ 150,000	$ 157,500	$ 165,375	$ 173,644	$ 182,326	5% Increase
Misc.	$ 50,000	$ 52,500	$ 55,125	$ 57,881	$ 60,775	5% Increase
Total O.E.	$1,834,000	$1,975,700	$2,129,485	$2,296,459	$2,477,832	
Interest on Debt	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	**$2,000,000**
EBT	$ 276,000	$ 596,300	$ 996,915	$1,495,221	$2,112,184	
Taxes	$ 82,800	$ 178,890	$ 299,075	$ 448,566	$ 633,655	Assume 30%
EAT	$ 193,200	$ 417,410	$ 697,841	$1,046,655	$1,478,529	

The financials in this case look great and given the large response we received from our market survey, we need to proceed into the full-blown business plan.

However, if the financials would have been negative (a lot of losses), we would disregard this alternative, and find a more attractive venture.

Summary

This chapter addressed the Feasibility Analysis as a screening device before a complete business plan is done.

The two critical sections of the business plan are the marketing section and the financial section. With the marketing section of the business plan you need to ascertain if there is a demand for the product and the price people would be willing to pay for the product or service. With the financial section, the purpose is to forecast the financial viability of the business.

The Feasibility Analysis is a great way to do a preliminary test of a new venture.