

How to Start an Engineering Business

By the BizMove.com Team

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1. Determining the Feasibility of Your New Business

A. Preliminary Analysis

This guide is a checklist for the owner/manager of a business enterprise or for one contemplating going into business for the first time. The questions concentrate on areas you must consider seriously to determine if your idea represents a real business opportunity and if

you can really know what you are getting into. You can use it to evaluate a completely new venture proposal or an apparent opportunity in your existing business.

Perhaps the most crucial problem you will face after expressing an interest in starting a new business or capitalizing on an apparent opportunity in your existing business will be determining the feasibility of your idea. Getting into the right business at the right time is simple advice, but advice that is extremely difficult to implement. The high failure rate of new businesses and products indicates that very few ideas result in successful business ventures, even when introduced by well established firm. Too many entrepreneurs strike out on a business venture so convinced of its merits that they fail to thoroughly evaluate its potential.

This checklist should be useful to you in evaluating a business idea. It is designed to help you screen out ideas that are likely to fail before you invest extensive time, money, and effort in them.

Preliminary Analysis

A feasibility study involves gathering, analyzing and evaluating information with the purpose of answering the question: "Should I go into this business?" Answering this question involves first a preliminary assessment of both personal and project considerations.

General Personal Considerations

The first seven questions ask you to do a little introspection. Are your personality characteristics such that you can both adapt to and enjoy business ownership/management?

1. Do you like to make your own decisions?
2. Do you enjoy competition?
3. Do you have will power and self-discipline?
4. Do you plan ahead?
5. Do you get things done on time?
6. Can you take advise from others?
7. Are you adaptable to changing conditions?

The next series of questions stress the physical, emotional, and financial strains of a new business.

8. Do you understand that owning your own business may entail working 12 to 16 hours a day, probably six days a week, and maybe on holidays?
9. Do you have the physical stamina to handle a business?
10. Do you have the emotional strength to withstand the strain?
11. Are you prepared to lower your standard of living for several months or years?

12. Are you prepared to loose your savings?

Specific Personal Considerations

1. Do you know which skills and areas of expertise are critical to the success of your project?
2. Do you have these skills?
3. Does your idea effectively utilize your own skills and abilities?
4. Can you find personnel that have the expertise you lack?
5. Do you know why you are considering this project?
6. Will your project effectively meet your career aspirations

The next three questions emphasize the point that very few people can claim expertise in all phases of a feasibility study. You should realize your personal limitations and seek appropriate assistance where necessary (i.e. marketing, legal, financial).

7. Do you have the ability to perform the feasibility study?
8. Do you have the time to perform the feasibility study?
9. Do you have the money to pay for the feasibility study done?

General Project Description

1. Briefly describe the business you want to enter.

2. List the products and/or services you want to sell

3. Describe who will use your products/services

4. Why would someone buy your product/service?

5. What kind of location do you need in terms of type of neighborhood, traffic count, nearby firms, etc.?

6. List your product/services suppliers.

7. List your major competitors - those who sell or provide like products/services.

8. List the labor and staff you require to provide your products/services. _____

B. Requirements For Success

To determine whether your idea meets the basic requirements for a successful new project, you must be able to answer at least one of the following questions with a "yes."

1. Does the product/service/business serve a presently unserved need?
2. Does the product/service/business serve an existing market in which demand exceeds supply?
3. Can the product/service/business successfully compete with an existing competition because of an "advantageous situation," such as better price, location, etc.?

Major Flaws

A "Yes" response to questions such as the following would indicate that the idea has little chance for success.

1. Are there any causes (i.e., restrictions, monopolies, shortages) that make any of the required factors of production unavailable (i.e., unreasonable cost, scarce skills, energy, material, equipment, processes, technology, or personnel)?
2. Are capital requirements for entry or continuing operations excessive?
3. Is adequate financing hard to obtain?
4. Are there potential detrimental environmental effects?
5. Are there factors that prevent effective marketing?

C. Desired Income

The following questions should remind you that you must seek both a return on your investment in your own business as well as a reasonable salary for the time you spend in operating that business.

1. How much income do you desire?

2. Are you prepared to earn less income in the first 1-3 years?

3. What minimum income do you require?

4. What financial investment will be required for your business?

5. How much could you earn by investing this money?

6. How much could you earn by working for someone else?

7. Add the amounts in 5 and 6. If this income is greater than what you can realistically expect from your business, are you prepared to forego this additional income just to be your own boss with the only prospects of more substantial profit/income in future years?

8. What is the average return on investment for a business of your type? _____

D. Preliminary Income Statement

Besides return on investment, you need to know the income and expenses for your business. You show profit or loss and derive operating ratios on the income statement. Dollars are the (actual, estimated, or industry average) amounts for income and expense categories. Operating ratios are expressed as percentages of net sales and show relationships of expenses and net sales.

For instance 50,000 in net sales equals 100% of sales income (revenue). Net profit after taxes equals 3.14% of net sales. The hypothetical "X" industry average after tax net profit might be 5% in a given year for firms with 50,000 in net sales. First you estimate or forecast income (revenue) and expense dollars and ratios for your business. Then compare your estimated or actual performance with your industry average. Analyze differences to see why you are doing better or worse than the competition or why your venture does or doesn't look like it will float.

These basic financial statistics are generally available for most businesses from trade and industry associations, government agencies, universities and private companies and banks

Forecast your own income statement. Do not be influenced by industry figures. Your estimates must be as accurate as possible or else you will have a false impression.

1. What is the normal markup in this line of business. i.e., the dollar difference between the cost of goods sold and sales, expressed as a percentage of sales?

2. What is the average cost of goods sold percentage of sales?

3. What is the average inventory turnover, i.e., the number of times the average inventory is sold each year?

4. What is the average gross profit as a percentage of sales?

5. What are the average expenses as a percentage of sales?

6. What is the average net profit as a percent of sales?

7. Take the preceding figures and work backwards using a standard income statement format and determine the level of sales necessary to support your desired income level.

8. From an objective, practical standpoint, is this level of sales, expenses and profit attainable?

ANY BUSINESS, INC.
 Condensed Hypothetical Income Statement
 For year ending December 31

Item	Amount	Percent
Gross sales	773,888	
Less returns, allowances, and cash discounts	14,872	
Net sales	759,016	100.00
Cost of goods sold	589,392	77.65
Gross profit on sales	169,624	22.35
Selling expenses	41,916	5.52
Administrative expenses	28,010	3.69
General expenses	50,030	6.59
Financial expenses	5,248	0.69
Total expenses	125,204	16.50
Operating profit	44,220	5.85
Extraordinary expenses	1,200	0.16
Net profit before taxes	43,220	5.69
taxes	19,542	2.57
Net profit after taxes	23,678	3.12

E. Market Analysis

The primary objective of a market analysis is to arrive at a realistic projection of sales. after answering the following questions you will be in a better positions to answer question eight immediately above.

Population

1. Define the geographical areas from which you can realistically expect to draw customers.

2. What is the population of these areas?

3. What do you know about the population growth trend in these areas? _____

4. What is the average family size?

5. What is the age distribution?

6. What is the per capita income?

7. What are the consumers' attitudes toward business like yours?

8. What do you know about consumer shopping and spending patterns relative to your type of business?

9. Is the price of your product/service especially important to your target market?

10. Can you appeal to the entire market?

11. If you appeal to only a market segment, is it large enough to be profitable?

F. Competition

1. Who are your major competitors?

2. What are the major strengths of each?

3. What are the major weaknesses of each?

4. Are you familiar with the following factors concerning your competitors:

Price structure?

Product lines (quality, breadth, width)?

Location?

Promotional activities?

Sources of supply?

Image from a consumer's viewpoint?

5. Do you know of any new competitors?

6. Do you know of any competitor's plans for expansion?

7. Have any firms of your type gone out of business lately?

8. If so, why?

9. Do you know the sales and market share of each competitor?

10. Do you know whether the sales and market share of each competitor are increasing, decreasing, or stable?

11. Do you know the profit levels of each competitor?

12. Are your competitors' profits increasing, decreasing, or stable?

13. Can you compete with your competition?

G. Sales

1. Determine the total sales volume in your market area.

2. How accurate do you think your forecast of total sales is?

3. Did you base your forecast on concrete data?

4. Is the estimated sales figure "normal" for your market area?

5. Is the sales per square foot for your competitors above the normal average?

6. Are there conditions, or trends, that could change your forecast of total sales?

7. Do you expect to carry items in inventory from season to season, or do you plan to mark down products occasionally to eliminate inventories? If you do not carry over inventory, have you adequately considered the effect of mark-down in your pricing? (Your gross profits margin may be too low.)

8. How do you plan to advertise and promote your product/service/business?

9. Forecast the share of the total market that you can realistically expect - as a dollar amount and as a percentage of your market.

10. Are you sure that you can create enough competitive advantages to achieve the market share in your forecast of the previous question?

11. Is your forecast of dollar sales greater than the sales amount needed to guarantee your desired or minimum income?

12. Have you been optimistic or pessimistic in your forecast of sales? _____

13. Do you need to hire an expert to refine the sales forecast?

14. Are you willing to hire an expert to refine the sales forecast?

H. Supply

1. Can you make a list of every item of inventory and operating supplies needed?
2. Do you know the quantity, quality, technical specifications, and price ranges desired?
3. Do you know the name and location of each potential source of supply?
4. Do you know the price ranges available for each product from each supplier?
5. Do you know about the delivery schedules for each supplier?
6. Do you know the sales terms of each supplier?
7. Do you know the credit terms of each supplier?
8. Do you know the financial condition of each supplier?
9. Is there a risk of shortage for any critical materials or merchandise?
10. Are you aware of which supplies have an advantage relative to transportation costs?
11. Will the price available allow you to achieve an adequate markup?

I. Expenses

1. Do you know what your expenses will be for: rent, wages, insurance, utilities, advertising, interest, etc?
2. Do you need to know which expenses are Direct, Indirect, or Fixed?
3. Do you know how much your overhead will be?
4. Do you know how much your selling expenses will be?

Miscellaneous

1. Are you aware of the major risks associated with your product? Service Business?

2. Can you minimize any of these major risks?
3. Are there major risks beyond your control?
4. Can these risks bankrupt you? (fatal flaws)

J. Venture Feasibility

1. Are there any major questions remaining about your proposed venture?
2. Do the above questions arise because of a lack of data?
3. Do the above questions arise because of a lack of management skills?
4. Do the above questions arise because of a "fatal flaw" in your idea?
5. Can you obtain the additional data needed?

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2. Starting Your Business Step by Step

A. Things to Consider Before You Start

This guide will walk you step by step through all the essential phases of starting a successful service business. To profit in a service based business, you need to consider the following questions: What business am I in? What services do I provide? Where is my market? Who will buy? Who is my competition? What is my sales strategy? What merchandising methods will I use? How much money is needed to operate my firm? How will I get the work done? What management controls are needed? How can they be carried out? When should I revise my plan? And many more.

No one can answer such questions for you. As the owner-manager you have to answer them and draw up your business plan. The pages of this guide are a combination of text and workspaces so you can write in the information you gather in developing your business plan - a logical progression from a commonsense starting point to a commonsense ending point.

It takes time and energy and patience to draw up a satisfactory business plan. Use this Guide to get your ideas and the supporting facts down on paper. And, above all, make changes in your plan on these pages as that plan unfolds and you see the need for changes.

Bear in mind that anything you leave out of the picture will create an additional cost, or drain on your money, when it crops up later on. If you leave out or ignore enough items, your business is headed for disaster.

Keep in mind too, that your final goal is to put your plan into action. More will be said about this near the end of this Guide.

What's in this for Me?

You may be thinking: Why should I spend my time drawing up a business plan? What's in it for me? If you've never drawn up a plan, you are right in wanting to hear about the possible benefits before you do your work.

A business plan offers at least four benefits. You may find others as you make and use such a plan. The four are:

(1) The first, and most important, benefit is that a plan gives you a path to follow. A plan makes the future what you want it to be. A plan with goals and action steps allows you to guide your business through turbulent economic seas and into harbors of your choice. The alternative is drifting into "any old port in a storm."

(2) A plan makes it easy to let your banker in on the action. By reading, or hearing, the details of your plan he will have real insight into your situation if he is to lend you money.

(3) A plan can be a communications tool when you need to orient sales personnel, suppliers, and others about your operations and goals.

(4) A plan can help you develop as a manager. It can give you practice in thinking about competitive conditions, promotional opportunities, and situation that seem to be advantageous to your business. Such practice over a period of time can help increase an owner-manager's ability to make judgments.

Why am I in Business?

Many enterprising people are drawn into starting their own business by the possibilities of making money and being their own boss. But the long hours, hard work, and responsibilities of being the boss quickly dispel and preconceived glamour.

Profit is the reward for satisfying consumer needs. But it must be worked for. Sometimes a new business might need two years before it shows a profit. So where, then, are reasons for having your own business?

Every business owner-manager will have his or her own individual reasons for being in business. For some, satisfaction come from serving their community. They take pride in serving their neighbors and giving them quality work which they stand behind. For others, their business offers them a chance to contribute to their employees' financial security.

There are as many rewards and reasons for being in business as there are business owners. Why are you in business?

What business am I in?

In making your business plan, the first question to consider is: What business am I really in. At the first reading this question may seem silly. "If there is one thing I know," you say to yourself, "it is what business I'm in." But hold on. Some owner-managers go broke and others waste their saving because they are confused about the business they are in.

The changeover of barbershops from cutting hair to styling hair is one example of thinking about what business you're really in.

Consider this example, also. Joe Riley had a small radio and TV store. He thought of his business as a retail store though he also serviced and repaired anything he sold. As his suburb grew, appliance stores emerged and cut heavily into his sales. However, there was an increased call for quality repair work.

When Mr. Riley considered his situation, he decided that he was in the repair business. As a result of thinking about what business he was really in, he profitably built up his repair business and has a contract to take care of the servicing and repair business for one of the appliance stores.

Decide what business you are in and write your answer in the following spaces. To help you decide, think of the answers to questions such as: What inventory of parts and materials must you keep on hand? What services do you offer? What services do people ask for that you do not offer? What is it you are trying to do better, more of, or differently from your competitors?

How to Plan Your Marketing

When you have decided what business you're in, you have made your first marketing decision. Now you are ready for other important considerations.

Successful marketing starts with the owner-manager. You have to know your service and the needs of your customers.

The narrative and work blocks that follow are designed to help you work out a marketing plan for your firm. The blocks are divided into three sections:

Section One - Determining the Sales Potential

Section Two - Attracting Customers

Section Three - Selling to Customers

Section One - Determining the Sales Potential

In the service business, your sales potential will depend on the area you serve. That is, how many customers in this area will need your services? Will your customers be industrial, commercial, consumer, or all of these?

When picking a site to locate your business, consider the nature of your service. If you pick up and deliver, you will want a site where the travel time will be low and you may later install a radio dispatch system. Or, if the customer must come to your place of business, the site must be conveniently located and easy to find.

You must pick the site that offers the best possibilities of being profitable. The following questions will help you think through this problem.

In selecting an area to serve, consider the following:

Population and its growth potential

Income, age, occupation of population

Number of competitive services in and around your proposed location

Local ordinances and zoning regulations

Type of trading area (commercial, industrial, residential, seasonal)

For additional help in choosing an area, you might try the local chamber of commerce and the manufacturer and distributor of any equipment and supplies you will be using.

You will want to consider the next list of questions in picking the specific site for your business:

Will the customer come to your place of business?

How much space do you need?

Will you want to expand later on?

Do you need any special features required in lighting, heating, ventilation?

Is parking available?

Is public transportation available?

Is the location conducive to drop-in customers?

Will you pick up and deliver?

Will travel time be excessive?

Will you prorate travel time to service call?

Would a location close to an expressway or main artery cut down on travel time?

If you choose a remote location, will savings in rent off-set the inconvenience?

If you choose a remote location, will you have to pay as much as you save in rent for advertising to make your service known?

If you choose a remote location, will the customer be able to readily locate your business?

Will the supply of labor be adequate and the necessary skills available?

What are the zoning regulations of the area?

Will there be adequate fire and police protection?

Will crime insurance be needed and be available at a reasonable rate?

I plan to locate in _____ because:

Is the area in which you plan to locate supported by a strong economic base? For example, are nearby industries working full time? Only part time? Did any industries go out of business in the past several months? Are new industries scheduled to open in the next several months?

Write your opinion of the area's economic base and your reason for that opinion here.:

Will you build? _____ What are the terms of the loan or mortgage?

Will you rent? _____ What are the terms of the lease?

Is the building attractive? _____ In good repair? _____

Will it need remodeling? _____ Cost of remodeling? _____

What services does the landlord provide?

What is the competition in the area you have picked?

The number of firms that handle my service _____

Does the area appear to be saturated? _____

How many of these firms look prosperous? _____

Do they have any apparent advantages over you? _____

How many look as though they're barely getting by? _____

How many similar services went out of business in the area last year? _____

Can you find out why they failed? _____

How many new services opened up in the last year? _____

How much do your competitors charge for your service? _____

Which firm or firms in the area will be your biggest competition? _____

List the reasons for your opinion here:

Section Two - Attracting Customers

When you have a location in mind, you should work through another aspect of marketing. How will you attract customers to your business? How will you pull customers away from your competition?

It is working with this aspect of marketing that many service firms find competitive advantages. The ideas which they develop are as good and often better, than those which large companies develop with hired brains. The workbooks that follow are designed to help you think about image, pricing, customer service policies, and advertising.

Image

Whether you like it or not, your service business is going to have an image. The way people think of your firm will be influenced by the way you conduct your business. If people come to your place of business for your service, the cleanliness of the floors, the manner in which they are treated, and the quality of your work will help form your image. If you take your service to the customer, the conduct of your employees will influence your image. Pleasant, prompt, courteous service before and after the sale will help make satisfied customers your best form of advertising.

Thus, you can control your image, Whatever image you seek to develop. It should be concrete enough to promote in your advertising. For example, "service with a smile" is an often used image.

Write out what image you want customers to have of your business.

Pricing

In setting prices for your service, there are four main elements you must consider:

- (1) Materials and supplies
- (2) Labor and operating expenses
- (3) Planned profit
- (4) Competition

Further along in this Guide you will have the opportunity to figure out the specifics of materials, supplies, labor, and operating expenses. From there you may want the assistance of your accountant in developing a price structure that will not only be fair to the customer, but also fair to yourself. This means that not only must you cover all expenses but also allow enough margin to pay yourself a salary.

One other thing to consider. Will you offer credit? _____ Most businesses use a credit card system. These credit costs have to come from somewhere. Plan for them. If you use a credit card system, what will it cost you? _____

Can you add to your prices to absorb this cost?

Some trade association have a schedule for service charges. It would be a good idea to check with the trade association for your line of business. Their figures will make a good yardstick to make sure your prices are competitive.

And, of course, your prices must be competitive. You've already found out your competitors' prices. Keep these in mind when you are working with your accountant. If you will not be able to make an adequate return, now is the time to find out.

Customer Service Policies

Customers expect certain services or conveniences, for example, parking. These services may be free to the customer, but not to you. If you do provide parking, you either pay for your own lot or pick up your part of the cost of a lot which you share with other businesses. Since these conveniences will be an expense, plan for them.

List the services that your competitors provide to customers:

Now list the services that you will provide your customers:

Service / Estimated Cost

Planning Your Advertising Activities

In this section on attracting customers, advertising was saved until last because you have to have something to say before advertising can be effective. When you have an image, price range, and customers services, you are ready to tell prospective customers why they should use your services.

When the money you can spend on advertising is limited it is vital that your advertising be on target. Before you can think about how much money you can afford for advertising, take time to determine what jobs you want advertising to do for your business. The work blanks that follow should be helpful to your thinking.

The strong points about my service business are:

My service business is different from my competition in the following ways:

My advertising should tell customers and prospective customers the following facts about my business and services:

When you have these facts in mind, you now need to determine who you are going to tell it to. Your advertising needs to be aimed at a target audience - those people who are most likely to use your services. In the space below, describe your customers in terms of age, sex, occupation, and whatever else is necessary depending on the nature of your business. This is your customer profile of "male and female automobile owners, 18 years old and above." Thus, for this repair business, anyone over 18 who owns a car is likely to need its service.

The customer profile for my business is

Now you are ready to think about the form your advertising should take and its cost. You are looking for the most effective means to tell your story to those most likely to use your service. Ask the local media (newspapers, radio and television, and the printers of direct mail pieces) for information about the services and the results they offer for your money.

How you spend advertising money is your decision, but don't fall into the trap that snares many advertisers. As one consultant describes this pitfall: It is amazing the way many managers consider themselves experts on advertising copy and media selection without any experience in these areas.

The following blanks should be useful in determining what advertising is needed to sell your strong points to prospective customers.

Form of Advertising	Size of Audience	Frequency of Use	Cost of A Single Ad	Estimated Cost
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
			Total	_____

When you have a figure on what your advertising for the next 12 months will cost, check it against one of the operating ratios (expenses as a percentage of sales) which trade associations and other organizations gather. If your estimated cost for advertising is substantially higher than this average for your line of service, take a second look. No single expense item should be allowed to get way out of line if you want to make a profit. Your task in determining comes down to: How much can I afford to spend and still do the job that needs to be done?

Section Three - Selling to Customers

To complete your work on marketing, you need to think about what you want to happen after you get a customer. Your goal is to provide your service, satisfy customers, and put money into the cash register.

One-time customers can't do the job. You need repeat customers to build a profitable annual sales volume. When someone returns for your service, it is probably because he was satisfied by his previous experience. Satisfied customers are the best form of advertising.

If you previously decided to work only for cash, take a hard look at your decision. Americans like to buy on credit. Often a credit card, or other system of credit and collections, is needed to attract and hold customers.

Based on this description and the dollar amount of business you indicated that you intend to do this year, fill in the following workblocks.

Fixtures and Equipment

No matter whether or not customers will come to your place of business, there will be certain equipment and furniture you will need in your place of business which will allow you to perform your service.

Parts and Material

You will probably need some kind of parts or material to provide your service.

I plan to buy parts and material from:

Before you make any supply arrangements, examine the supplier's obsolescence policy. This can be a vital factor in service parts purchasing. You also look at the supplier's warranty policy.

Now that you have determined the parts and materials you'll need, you should think about the type of stock control system you'll use. A stock control system should enable you to determine what needs to be ordered on the basis of: (1) what is on hand, (2) what is on order, (3) what has been used. (Some trade associations and suppliers provide systems to members and customers.)

When you have decided on a system for stock control, estimate its cost. My system for stock control will cost me _____ for the first year.

Overhead

List the overhead items which will be needed. Examples are: rent, utilities, office help, insurance, interest, telephone, postage, accountant, payroll taxes, and licenses or other local taxes. If you plan to hire others to help you manage, their salaries should be listed as overhead.

Getting the Work Done

An important step in setting up your business is to find and hire capable employees. Then you must train them to work together to get the job done. Obviously, organization is needed if your business is to produce what you expect it to produce, namely profits.

Organization is essential because you as the owner-manager cannot do all the work. As your organization grows, you have to delegate work, responsibility and authority. A helpful tool in getting this done is the organization chart. It shows at a glance who is responsible for the major activities of a business.

As an additional aid in determining both what needs to be done and who will do it, list each activity that is involved in your business. Next to the activity indicate who will do it. You may do this by name or some other designation such as "worker #1", Remember that a name may appear more than once.

Activity / Name

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

How Much Money Will You Need

At this point, take some time to think about what your business plan means in terms of dollars. This section is designed to help you put your plan into dollars.

The first question concerns the source of dollars. After your initial capital investment, the major source of money is the sale of your services. What dollar volume of business do you expect to do in the next 12 months? _____

Expenses

In connection with your annual dollar volume of business, you need to think about expenses. If, for example you plan to do 100,000 in business, what will it cost you to do this amount of servicing? And even more important, what will be left over as profit at the end of the year? Never lose sight of the fact that profit is your pay. Even if you pay yourself a salary for living expenses, your business must make a profit if it is to continue year after year and pay back the money you invested in it.

The following workblock is designed to help you make a quick estimate of your expenses. To use this formula, you need to get only one figure - the cost of sales figure for your line of business. If you don't have this operating ratio, check with your trade association.

	Expressed in percentage	Expressed in dollars	your percentage	your dollars
1. Sales	100	100,000	100	\$ _____
2. Cost of sales	-61.7	-61,700	_____	-\$ _____
3. Gross margin	38.3	38,300	_____	\$ _____

Start-Up Costs

If you are starting a new business, list the following estimated start-up costs:

Fixtures and equipment	_____
Starting inventory	_____
Office supplies	_____
Decorating and remodeling	_____
Installation of equipment	_____
Deposits for utilities	_____
Legal and professional fees	_____
Licenses and permits	_____
Advertising for the opening	_____
Operating cash	_____
Owner's withdraw during prep-start-up time	_____
Total	_____

Whether you have the funds (savings) or borrow them, your new business will have to pay back these start-up costs. Keep this fact in mind as you work on the "Expenses" section, and on other financial aspects of your plan.

Break Down Your Expenses

Your quick estimate of expenses provides a starting point. The next step is to break down your expenses so they can be handled over the 12 months. Use an "Expenses Worksheet" form to make up an expense budget.

Matching Money and Expenses

A budget helps you to see the dollar amount of your expenses each month. Then from month to month the question is: Will sales bring in enough money to pay the firm's bills on time? The answer is "maybe not" or "I hope so" unless the owner-manager prepares for the "peaks and valleys" that are in many service operations.

A cash forecast is a management tool which can eliminate much of the anxiety that can plague you if your business goes through lean months. Use a worksheet, "Estimated Cash Forecast", or ask your accountant to use it to estimate the amounts of cash you expect to flow through your business during the next 12 months.

Is Additional Money needed?

Suppose at this point you have determined that your business plan needs more money than can be generated by sales. What do you do?

What you do depends on the situation. For example, the need may be for bank credit to tide your business over during the lean months. This loan can be repaid during the fat sales months when expenses are far less than sales. Adequate working capital is necessary for success and survival.

Whether an owner-manager seeks to borrow money for only a month or so or on a long-term basis, the lender needs to know whether the store's financial position is strong or weak. Your lender will ask to see a current balance sheet.

Even if you don't need to borrow, use it, to draw the "picture" of your firm's financial condition. Moreover, if you don't need to borrow money, you may want to show your plan to the bank that handles your store's checking account. It is never too early to build good relations with your banker, to show that you are a manager who knows where you want to go rather than a store owner who hopes to make a success.

Control and Feedback

To make your plan work you will need feedback. For example, the year-end profit and loss statement shows whether your business made a profit or loss for the past 12 months.

But you can't wait 12 months for the score. To keep your plan on target you need readings at frequent intervals. A profit and loss statement at the end of each month or at the end of each quarter is one type of frequent feedback. However, the income statement or profit and loss statement (P and L) may be more of a loss than a profit statement if you rely only on it. You must set up management controls which will help you to insure that the right things are being done from day to day and from week to week. In a new business, the record-keeping system should be set up before your business opens. After you're in business is too late. For one thing, you may be too busy to give a record-keeping system the proper attention.

The control system which you set up should give you information about: stock, sales, and disbursement. The simpler the system, the better. Its purpose is to give you current information. You are after facts with emphasis on trouble spots. Outside advisers, such as an accountant, can be helpful.

Stock Control

The purpose of controlling parts and materials inventory is to provide maximum service to your customers and to see that parts and materials are not lost through pilferage, shrinkage, errors, or waste. Your aim should be to achieve a high turnover on your inventory. The fewer dollars you tie up in inventory, the better.

In a business, inventory control helps the owner-manager to offer customers efficient service. The control system should enable you to determine what needs to be ordered on the basis of: (1) what is on hand, (2) what is on order, and (3) what has been used.

In setting up inventory controls, keep in mind that the cost of the inventory is not your only cost. You will also have costs such as the cost of purchasing, the cost of keeping control records, and the cost of receiving and storing your inventory.

Sales

In a small business, sales slips and cash register tapes give the owner-manager feedback at the end of each day. To keep on top of sales, you will need answers to questions such as: How many sales were made? What was the dollar amount? What credit terms were given to customers?

Disbursements

Your manager controls should also give you information about the dollars your company pays out. In checking on your bills, you do not want to know what major items, such as paying bills on time to get the supplier's discount, are being handled according to your policies. Your review system will also give you the opportunity to make judgments on the use of funds. In this manner, you can be on top of emergencies as well as routine situations. Your system should also keep you aware that tax moneys such as payroll income tax deductions, are set aside and paid out at the proper time.

Break-Even Analysis

Break-even analysis is a management control device because the break-even point shows how much you must sell under given conditions in order to just cover your costs with No profit and No loss.

Profit depends on sales volume, selling price, and costs. Break-even analysis helps you to estimate what a change in one or more of these factors will do to your profits. To figure a break-even point, fixed costs, such as rent, must be separated from variable costs, such as the cost of sales and the other items listed under "controllable expenses" on the expense worksheet, of this Guide.

The formula is:

Break-even point (in sales dollars) =

$$\frac{\text{Total fixed costs}}{1 - \frac{\text{.....Total variable costs}}{\text{.....Corresponding sales volume}}}$$

An example of the formula is: Bill Jackson plans to open a laundry. He estimates his fixed expenses at about \$9,000, the first year. He estimates his variable expenses at about \$700 for every \$1,000 of sales.

$$\text{BE point} = \frac{\$9,000}{1 - \frac{700}{1,000}} = \frac{\$9,000}{1 - .70} = \frac{\$9,000}{.30} = \$30,000$$

Is Your Plan Workable?

Stop when you have worked out your break-even point. Whether the break-even point looks realistic or way off base, it is time to make sure that your plan is workable.

Take time to re-examine your plan before you back it with money. If the plan is not workable better to learn it now than to realize 6 months down the road that you are pouring money into a losing venture.

In reviewing your plan, look at the cost figures you drew up when you broke down your expenses for one year. If any of your cost items are too high or too low, change them. You can write your changes in the white spaces above or below your original entries on that worksheet. When you finish making your adjustments, you will have a Revised projected statement of sales and expenses for 12 months.

With your revised figures work out a revised break-even point. Whether the new break-even point looks good or bad, take one or more precaution. Show your plan to someone who has not been involved in working out the details.

Your banker, or other advisor outside of your business may see weaknesses that failed to appear as you pored over the details of your plan. They may put a finger on strong points which your plan should emphasize.

Put Your Plan into Action

When your plan is as near on target as possible, you are ready to put it into action. Keep in mind that action is the difference between a plan and a dream. If a plan is not acted upon, it is of no more value than a pleasant dream that evaporates over the breakfast coffee.

A successful owner-manager does not stop after he has gathered information and drawn up a plan, as you have done in working through this Guide. He begins to use his plan.

At this point, look back over your plan. Look for things that must be done to put your plan into action.

What needs to be done will depend on your situation. For example, if your business plan calls for an increase in sales, one action to be done will be providing funds for this expansion.

Have you more money to put into this business?

Do you borrow from friends and relatives? From your bank? From your suppliers by arranging liberal commercial credit terms.

If you are starting a new business, one action step may be to get a loan for fixtures, employee salaries, and other expenses. Another action step will be to find and hire capable employees.

In the spaces that follow, list things that must be done to put your plan into action. Give each item a date so that it can be done at the appropriate time. To put my plan into action, I must do the following:

Action / Completion Date

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Keeping Your Plan Up To Date

Once you put your plan into action, look out for changes. They can cripple the best made business plan if the owner-manager lets them.

Stay on top of changing conditions and adjust your business plan accordingly.

Sometimes the change is made within your company. For example, several of your employees quit their jobs. Sometimes the change is with customers: for example, their desires and tastes shift. Sometimes the change is technological as when raw materials are put on the market introducing the need for new processes and procedures.

In order to adjust your plan to account for such changes, an owner-manager must:

- (1) Be alert to the changes that come in your company, line of business, market, and customers.
- (2) Check your plan against these changes.
- (3) Determine what revisions, if any, are needed in your plan.

The method you use to keep your plan current so that your business can weather the forces of the market place is up to you. Read the trade papers and magazines for your line of business. Another suggestion concerns your time. Set some time - two hours, three hours, whatever is necessary-to review your plan periodically. Once each month, or every other month, go over your plan to see whether it needs adjusting. If revisions are needed, make them and put them into action.

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3. Complete Engineering Business Plan Template

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1.0 Executive Summary

The Company

COMPANY NAME was founded in 1996 and is based in Thousand Oaks, Southern California. **COMPANY NAME** offers good quality and cost effective service in engineering, design, procurement, project management, construction and construction management, environmental consulting, and other consulting services in relation to the design, building and management of electrical power.

Once projects have been secured, then project offices will be established and project personnel and staff will be recruited. Project office organization and staff will encompass the engineering, procurement, and construction divisions.

The Market

At the moment there is a real opportunity to increase Southern California's power infrastructure as the government owned power utility (PLN) has not been able to deliver a reliable and cost effective power system. However, the current situation in State of California is characterized by a continuing downward economic drift. It seems reasonable, however, that the company's target market sectors have strength to be credible buyers in the Southern Californian power business, since their business orientation is focused in the export market. The company faces significant rivalry from a variety of direct and indirect competitors.

The purpose of this plan is to attain grant funding in the amount of \$1,600,000 in order to expand the company, strategize and implement an advertising campaign, upgrade to more efficient equipment and to hire additional employees.

1.1 Objectives

The financial and marketing objectives of **COMPANY NAME** follow.

Financial Objectives

- High average gross margin percent of sales revenue for jobs. When the company has been in operation for four years after attaining grant funding, it will also produce excellent IRR for 25 years, which will create different types of jobs: build, own, operate (BOO), build, operate, transfer (BOT), build, lease, transfer (BLT), build and rent (B&R), and energy conversion contract (ECC).
- Net income of more than 20% of sales by the fifth year.

Marketing Objectives

Thus the marketing objective might read:

- Expand customer awareness over the planning period.
- Reduce competition, reduce risks, and lower price levels by establishing a joint venture with a reputable local company who has experience in performing EPC works of power projects, as well as the financial capability to be equal partners with **COMPANY NAME**.
- Pursuing not only EPC prospects, but also BOO, BOT, BLT, B&R, and ECC prospects.
- Utilizing the joint venture company as the main entity of **COMPANY NAME** to conduct business in Southern California.

1.2 Mission

The mission of the **COMPANY NAME** is to establish a strong presence in Southern California to implement all provisions of the Energy Engineering & Construction (EEC) mission statement with the specific mission of becoming the leading full service EPC in Southern California. Also, **COMPANY NAME** role to be the leader in the business of BOO, BOT, BLT, B&R, and ECC in the Southern Californian captive power sector, will be built through a joint venture approach.

The broad mission requires the following objectives within Southern California:

- To obtain projects in all areas of EEC services.

- Reduce the costs of performing work to the point that the Southern Californian operation can provide engineering, procurement, and support services at a lower cost than those provided by the larger corporate conglomerates.

1.3 Keys to Success

- Marketing power. **COMPANY NAME** needs to have its services on the shelves as the most reliable, high-quality, cost effective services in the industry, with enough marketing power to maintain an eight percent market share of EPC services in the Southern Californian captive power sector.
- Excellence in fulfilling the promise. To realize a benefit, a claim must be made and proof presented.
- Providing clients with both solutions and value creations. Helping the clients to increase their own residential and commercial lighting potential.
- Quality service and customer satisfaction. Everything we sell is guaranteed, so the services have to do what the customers want. Long-term customer satisfaction is critical to our survival.
- Leveraging from a single pool of expertise into multiple revenue-generating opportunities: Engineering & Architect (E&A), project consulting, project management, Engineering & Procurement (E&P), and Engineering & Construction (E&C).
- The right management team, with strong foundations in marketing, management, finance, and services development.

2.0 Company Summary

COMPANY NAME is a subsidiary company of United States Energy Engineering & Construction (U.S. EEC) that provides services including engineering, design, procurement, project management, construction and construction management, environmental consulting, management consulting, quality assurance and quality control, information management, operations and maintenance, and process technology development.

COMPANY NAME sets the following objectives for the products and services lines of power generation and power delivery projects:

- Expand customer awareness over the planning period.

- Pursuing not only EPC prospects, but also BOO, BOT, BLT, B&R, and ECC prospects.
- To conduct business in Central and Southern California, and to provide all aspects of energy engineering services.

2.1 Company Ownership

COMPANY NAME is an S Corporation that was created as a Ventura County corporation based in Thousand Oaks, California, under the sole ownership of **INSERT NAME**. The company was established in 1996 and is an A-rated member of the Better Business Bureau.

2.2 Company History

Since 1996, **COMPANY NAME** has provided construction and energy solutions to home and business owners. With a focus on lighting design and general contracting **COMPANY NAME** provides a full range of services and can meet virtually any electrical and lighting need. No project is too small or too large. Every project adds value to a property and increases security, comfort and convenience.

COMPANY NAME builds custom homes, additions, bedroom and bathroom remodeling, any and all indoor and outdoor building projects. The company also does electrical work, including installation and wiring for residences and commercial buildings.

With the current expansion of solar energy, **COMPANY NAME** is able to provide green alternatives to meet the customers' home and business energy needs. By utilizing solar power, customers reduce their energy costs and also may be eligible for certain tax benefits and energy credits.

COMPANY NAME is located in Thousand Oaks, California but provide design, lighting and construction services throughout Ventura, Santa Barbara and Los Angeles Counties. The company is an A-rated member of the Better Business Bureau.

Table: Past Performance

Past Performance			
	2007	2008	2009
Sales	\$451,318	\$405,231	\$387,464
Gross Margin	\$199,611	\$160,155	\$153,251
Gross Margin %	44.23%	39.52%	39.55%
Operating Expenses	\$27,482	\$30,782	\$30,386
Balance Sheet			
	2007	2008	2009
Current Assets			
Cash	\$4,000	\$10,000	\$25,000
Other Current Assets	\$10,000	\$12,001	\$14,000
Total Current Assets	\$14,000	\$22,001	\$39,000
Long-term Assets			
Long-term Assets	\$710,837	\$924,089	\$1,243,965
Accumulated Depreciation	\$0	\$0	\$0
Total Long-term Assets	\$710,837	\$924,089	\$1,243,965
Total Assets	\$724,837	\$946,090	\$1,282,965
Current Liabilities			
Accounts Payable	\$0	\$0	\$0

Current Borrowing	\$0	\$0	\$2,000
Other Current Liabilities (interest free)	\$0	\$0	\$0
Total Current Liabilities	\$0	\$0	\$2,000
Long-term Liabilities	\$860,000	\$643,789	\$514,000
Total Liabilities	\$860,000	\$643,789	\$516,000
Paid-in Capital	\$20,000	\$50,000	\$20,000
Retained Earnings	(\$327,292)	\$122,928	\$624,100
Earnings	\$172,129	\$129,373	\$122,865
Total Capital	(\$135,163)	\$302,301	\$766,965
Total Capital and Liabilities	\$724,837	\$946,090	\$1,282,965
Other Inputs			
Payment Days	30	30	30

3.0 Services

COMPANY NAME offers good quality and cost effective service in engineering, design, procurement, project management, construction and construction management, environmental consulting, management consulting, quality assurance and quality control, information management, operations and maintenance and process technology development.

COMMERCIAL

Businesses run on electricity and light, often requiring complex solutions to meet the needs of workers and customers. Task and display lighting, energy-efficient solutions, security and safety issues are all services **COMPANY NAME** provides to commercial customers. **COMPANY NAME** provides fast, reliable service on commercial projects.

Safety, Security and Exit Lighting

Display Lighting

Lighting Upgrades

Fuse Panels

Wiring

Energy Conservation

RESIDENTIAL

Not only does **COMPANY NAME** handle general service calls but they also provide interior and exterior lighting design and installation services to make the customer's home more beautiful, safer, and more efficient and increase its value. The company deals with general lighting, which is the overall ambient light; task lighting, which is specific to work areas; and accent lighting, which adds drama or highlights particular areas in a space. Whether the project is a renovation, new home construction,

an addition or regular maintenance, **COMPANY NAME** provides solid expertise and unsurpassed attention to detail.

Interior Lighting
Exterior Lighting
Display Lighting
Recessed Lighting
Automation
Security
Landscape and Outdoor Lighting
Wiring, Outlets, Panels and Switches
Rewiring
New Circuitry
Surge Suppression
Energy Conservation

4.0 Market Analysis Summary

In Southern California, there are several market sectors of power generation business in which **COMPANY NAME** will be seeking prospects on a focused and proactive approach.

The Market Analysis table shows the estimated captive power project values in the dollar per year, within the period of 2003-2009, based on the present circumstances. This table is a live and dynamic table. The numbers of dollars each year could increase as the economy corrects itself.

4.1 Market Segmentation

The potential clients/customers during the five-year implementation of this plan for power generation EPC services are composed of twelve groups:

1. Captive power developers (this type of client could be any industrial facilities owner who needs power supply for its own facilities or their subsidiaries in the form of IPP developers)
2. Pulp and paper producers
3. Textile producers
4. Cement mills
5. Mining industries

6. Shrimp farming
7. Sugar producers
8. Palm oil producers
9. Fertilizer manufacturing
10. Petrochemicals
11. Oil & Gas Exploration & Production Companies
12. Oil Refinery Complexes

It seems reasonable, based on strong fundamentals, that the above twelve sectors have strength to be credible buyers in the state of Californian power business.

4.2 Target Market Segment Strategy

COMPANY NAME will focus on major electricity consumers in Southern California who are very demanding regarding reliability of their power supply systems.

The current situation in the state of California can be characterized by commercial paralysis, policy paralysis, and for the moment, a continuing downward economic drift. But it seems reasonable that the previously listed twelve sectors have strength to be credible buyers in the state of Californian power business, since their business orientation is focused in the market leads acceptable development risks. The uncertainty lies in how long the country's economic recovery will take and with what twists and turns in the political and economic structure will offer tremendous opportunities for the company in developing badly needed, inside-the-fence captive power projects to satisfy the demand. This requirement has not diminished because of the crisis. It even increases due to the government owned power utility (PLN) absence to deliver a reliable and cost effective power system.

For the short term, the company needs to be flexible and creative in pricing and financing its services. Southern Californian buyers are likely to be more dependent than ever on supplier financing, and looking for bargains; unfortunately, the current economic erosion situation has put them in a compromising position for bargaining. The company needs to be proactive in assisting its customers in finding sources of financing, inventing creative payment terms or offering a more lenient repayment period, if possible, and looking for ways to cut the price of supplies and services.

4.3 Service Business Analysis

EPC Contractors in power business range from major global Original Equipment Manufacturers (OEM) of the power generation and transmission plants to the local engineering and construction firms.

4.3.1 Competition and Buying Patterns

When the company attains grant funding, **COMPANY NAME** will be able to reduce costs and increase profits by having a full-service production office in Southern California.

The critical issue for establishing a local production capability is the ability of **COMPANY NAME** to hire, train, and retains highly qualified and motivated Southern Californian engineers.

Solar Energy Pros:

Solar panels give off no pollution; the only pollution produced as a result of solar panels is the manufacturing of these devices in factories, transportation of the goods, and installation.

The production of energy from the use of fossil and some renewable fuels (e.g. wind turbines) can be noisy, yet solar energy produces electricity very quietly.

One of the great pros of solar energy is the ability to harness electricity in remote locations that are not linked to a national grid. A prime example of this is in space, where satellites are powered by high efficiency solar cells.

The installation of solar panels in remote locations is usually much more cost effective than laying the required high voltage wires.

Solar energy can be very efficient in a large area of the globe, and new technologies allow for a more efficient energy production on overcast/dull days.

Solar panels can be installed on top of many rooftops, which eliminate the problem of finding the required space for solar panel placement.

Another great pro of solar energy is the cost. Although the initial investment of solar cells may be high, once installed, they provide a free source of electricity, which will pay off over the coming years.

The use of solar energy to produce electricity allows the user to become less dependent on the worlds fossil fuel supplies.

Solar Energy Cons:

The major con of solar energy is the initial cost of solar cells. Currently, prices of highly efficient solar cells can be above \$1000, and some households may need more than one. This makes the initial installation of solar panels very costly.

Solar energy is only able to generate electricity during daylight hours. This means for around half of each day, solar panels are not producing energy for your home.

The weather can affect the efficiency of solar cells.

Pollution can be a con of solar energy, as pollution levels can affect a solar cells efficiency, this would be a major con for businesses or industry wishing to install solar panels in heavily polluted areas, such as major cities.

Overview

Above is a list of many solar energy pros and cons, and although not definitive, customers can see how the number of pros relating to solar energy, greatly outweighs the cons of solar energy.

The main reason the company is not seeing a large amount of solar energy technology installations is due to cost, and unfortunately, as the price of fossil fuels remains lower than the initial investment towards the currently available [solar panels](#), **COMPANY NAME** will see a slower mass shift towards solar electricity production.

5.0 Strategy and Implementation Summary

One of the reasons why captive power has become the most important sector in the Southern Californian power market is that the customers need the most reliable and efficient power system to reduce the costs. The PLN subsidized electricity tariff is approximately 40% more expensive, and its disturbance rate is high and getting worse.

Furthermore, PLN's inability to pay power and natural gas at the prevailing exchange rate has put both PLN and independent power producer (IPP) developers into a very difficult position to move forward with their project implementation between 1999 and 2003. Meanwhile, in line with the governments export increasing program to strengthen the national reserve funds, many big electricity consumers will face their fast growing demand. This situation will compel many electricity consumers (especially large industrial facilities) to set up their own captive power plants.

As a result of this need, **COMPANY NAME** will focus its marketing directive on those larger industrial companies and affluent residential individuals in the Central and Southern California regions.

5.1 Competitive Edge

COMPANY NAME's overall competitive edge in Central and Southern California is that it brings its' company's name recognition as a "one-stop" services provider encompassing engineering, procurement, construction, and design services. The company is seen as having more than 14 years' experience in the alternative power industry.

One of the most important key factors in **COMPANY NAME** competitive edge is its expertise as follows:

1. Obtaining low-cost financing specific to the buyer.

2. Conducting studies to establish project feasibility.
3. Maintaining an A-Plus rating with the Better Business Bureau.

5.2 Marketing Strategy

The following sections detail the marketing strategy for **COMPANY NAME**.

5.3 Sales Strategy

The captive power market in the state of California will be focused and integrated with the private customers outside the multilateral/bilateral aid programs. To sell to this type of market, **COMPANY NAME** needs to have these seven important propositions:

1. Proven expertise in project financing arrangements.
2. Direct negotiation approaches with the clients.
3. Strategic alliances with a reputable local company who has experience as either an EPC company or developer in Southern Californian power sector, capability, and the in-house facilities to perform the detailed engineering, procurement, and construction of power projects.
4. Competitiveness in pricing.
5. Creative payment terms.
6. Contributions in enhancing the local manufacturing sector by making it more efficient and competitive.
7. Proven expertise in the EPC of reliable and efficient power system.

5.3.1 Sales Forecast

COMPANY NAME is planning to increase sales substantially in 2011. This is considered reasonable due to the opportunities available in the industry.

The year of 2012 will offer the highest sales, as many clients will begin the implementation of their projects.

Table: Sales Forecast

Sales Forecast			
	2010	2011	2012
Sales			
Engineering & Architect (E&A)	\$149,645	\$154,134	\$158,758
Engineering & Construction	\$299,317	\$308,297	\$317,545
Project management (PM)	\$189,353	\$195,034	\$200,885
Total Sales	\$638,315	\$657,465	\$677,188
Direct Cost of Sales	2010	2011	2012
Materials and Supplies	\$156,586	\$161,284	\$166,122
Subcontractors	\$23,677	\$24,387	\$25,119
Casual Labor	\$840	\$865	\$891
Subtotal Direct Cost of Sales	\$181,103	\$186,536	\$192,132

5.4 Milestones

COMPANY NAME detailed milestones are shown in the following table and chart. The related budgets are included with the expenses shown in the projected Profit and Loss statement, which is in the financial analysis that comes in Chapter 7 of this plan.

COMPANY NAME currently owns three production vehicles outright with no liability. The company would like to designate a small portion of the funds to repair those vehicles as opposed to purchasing new ones.

Table: Milestones

Milestones					
Milestone	Start Date	End Date	Budget	Manager	Department
Attain Production Facility	7/17/2010	12/31/2010	\$850,000		Owner
Upgrade Office Equipment	7/17/2010	12/31/2010	\$6,000		Owner
Inventory	7/17/2010	11/1/2010	\$115,000		Owner
Auto Maintenance	7/17/2010	11/1/2010	\$3,000		Owner
Totals			\$974,000		

6.0 Management Summary

COMPANY NAME is led by INSERT NAME, the sole owner and manager of the company.

When projects have been secured, then project offices will be established and project personnel and staff will be recruited. Project office organization and staff will encompass the engineering, procurement, and construction divisions.

The administrative section obtains outside services from Central and Southern Californian professional firms for tax reporting, legal and contract consulting, and immigration "consultants." It is expected that these services will continue to be contracted out as the cost of full-time staff positions in these specialists will be large.

6.1 Personnel Plan

The following table summarizes the company's personnel plan for the three years of this business plan for **Reder Construction**.

Table: Personnel

Personnel Plan			
	2010	2011	2012
President Director/Chief Representative	\$0	\$0	\$0
Electricians	\$69,120	\$71,194	\$73,329
Helper	\$23,040	\$23,731	\$24,443
Secretary	\$19,200	\$19,776	\$20,369
Total People	5	6	7
Total Payroll	\$111,360	\$114,701	\$118,141

7.0 Financial Plan

The following sections present the financial analysis for **COMPANY NAME**.

7.1 Important Assumptions

The accompanying table lists **COMPANY NAME**'s main assumptions for developing its financial projections. The most sensitive assumption is collection days. **COMPANY NAME** would like to improve collection days to take pressure off of its working capital.

7.2 Break-even Analysis

The following table and chart summarize the Break-even Analysis, including monthly units and sales break-even points.

Table: Break-even Analysis

Break-even Analysis	
Monthly Revenue Break-even	\$16,816

Assumptions:	
Average Percent Variable Cost	28%
Estimated Monthly Fixed Cost	\$12,045

7.3 Projected Profit and Loss

The detailed monthly pro-forma income statement for the first year is included in the appendix. The annual estimates are included below.

Table: Profit and Loss

Pro Forma Profit and Loss			
	2010	2011	2012
Sales	\$638,315	\$657,465	\$677,188
Direct Cost of Sales	\$181,103	\$186,536	\$192,132
Power System Studies	\$0	\$0	\$0
Total Cost of Sales	\$181,103	\$186,536	\$192,132
Gross Margin	\$457,212	\$470,929	\$485,056
Gross Margin %	71.63%	71.63%	71.63%
Expenses			
Payroll	\$111,360	\$114,701	\$118,141
Sales and Marketing and Other Expenses	\$0	\$0	\$0
Depreciation	\$2,796	\$2,744	\$2,689
Accounting	\$2,100	\$2,163	\$2,228
Auto Expense	\$17,652	\$18,182	\$18,727
Computer Expense	\$418	\$431	\$443
Dues and Subscriptions	\$275	\$283	\$292
Interest Expense	\$3,876	\$3,992	\$4,112
Office Supplies	\$528	\$544	\$560

Taxes and Licenses	\$1,625	\$1,674	\$1,724
Telephone	\$3,912	\$4,029	\$4,150
Total Operating Expenses	\$144,542	\$148,743	\$153,066
Profit Before Interest and Taxes	\$312,670	\$322,186	\$331,990
EBITDA	\$315,466	\$324,930	\$334,679
Interest Expense	\$46,430	\$46,430	\$46,430
Taxes Incurred	\$66,560	\$68,939	\$71,390
Net Profit	\$199,680	\$206,817	\$214,170
Net Profit/Sales	31.28%	31.46%	31.63%

7.4 Projected Cash Flow

Cash flow projections are critical to the company's success. The monthly cash flow is shown in the chart, with one bar representing the cash flow per month and the other representing the monthly balance. The annual cash flow figures are included here in the following table. Detailed monthly numbers are included in the appendix.

COMPANY NAME plans to purchase real estate after attaining grant funding in order to have a fully operational workshop and warehouse to handle the increased demand of future customers wanting custom green technology installed in their home and businesses.

Table: Cash Flow

Pro Forma Cash Flow			
	2010	2011	2012
Cash Received			
Cash from Operations			
Cash Sales	\$638,315	\$657,465	\$677,188
Subtotal Cash from Operations	\$638,315	\$657,465	\$677,188
Additional Cash Received			
Sales Tax, VAT, HST/GST Received	\$0	\$0	\$0
New Current Borrowing	\$0	\$0	\$0
New Other Liabilities (interest-free)	\$0	\$0	\$0
New Long-term Liabilities	\$0	\$0	\$0
Sales of Other Current Assets	\$0	\$0	\$0
Sales of Long-term Assets	\$0	\$0	\$0
New Investment Received	\$1,600,000	\$0	\$0
Subtotal Cash Received	\$2,238,315	\$657,465	\$677,188

Expenditures	2010	2011	2012
Expenditures from Operations			
Cash Spending	\$111,360	\$114,701	\$118,141
Bill Payments	\$290,384	\$332,532	\$332,196
Subtotal Spent on Operations	\$401,744	\$447,233	\$450,337

Additional Cash Spent			
Sales Tax, VAT, HST/GST Paid Out	\$0	\$0	\$0
Principal Repayment of Current Borrowing	\$2,000	\$0	\$0
Other Liabilities Principal Repayment	\$0	\$0	\$0
Long-term Liabilities Principal Repayment	\$55,920	\$55,920	\$55,920
Purchase Other Current Assets	\$121,800	\$0	\$0
Purchase Long-term Assets	\$900,000	\$0	\$0
Dividends	\$0	\$0	\$0
Subtotal Cash Spent	\$1,481,464	\$503,153	\$506,257
Net Cash Flow	\$756,851	\$154,312	\$170,931
Cash Balance	\$781,851	\$936,163	\$1,107,094

7.5 Projected Balance Sheet

The following Balance Sheet table shows healthy growth of net worth and a strong financial position. The monthly estimates are included in the appendix.

Table: Balance Sheet

Pro Forma Balance Sheet	2010	2011	2012
	Assets		
Current Assets			
Cash	\$781,851	\$936,163	\$1,107,094
Other Current Assets	\$135,800	\$135,800	\$135,800
Total Current Assets	\$917,651	\$1,071,963	\$1,242,894
Long-term Assets			
Long-term Assets	\$2,143,965	\$2,143,965	\$2,143,965
Accumulated Depreciation	\$2,796	\$5,540	\$8,229
Total Long-term Assets	\$2,141,169	\$2,138,425	\$2,135,736
Total Assets	\$3,058,820	\$3,210,388	\$3,378,630
Liabilities and Capital	2010	2011	2012
Current Liabilities			
Accounts Payable	\$32,029	\$26,911	\$27,339
Current Borrowing	\$0	\$0	\$0
Other Current Liabilities	\$0	\$0	\$0

Subtotal Current Liabilities	\$32,029	\$26,911	\$27,339
Long-term Liabilities	\$458,080	\$402,160	\$346,240
Total Liabilities	\$490,109	\$429,071	\$373,579
Paid-in Capital	\$1,620,000	\$1,620,000	\$1,620,000
Retained Earnings	\$746,965	\$948,711	\$1,161,317
Earnings	\$201,746	\$212,606	\$223,734
Total Capital	\$2,568,711	\$2,781,317	\$3,005,051
Total Liabilities and Capital	\$3,058,820	\$3,210,388	\$3,378,630
Net Worth	\$2,568,711	\$2,781,317	\$3,005,051

7.6 Business Ratios

Business ratios for the years of this plan are shown below. Industry profile ratios based on the Standard Industrial Classification (SIC) code 8711, Engineering Services, are shown for comparison.

Table: Ratios

Ratio Analysis				
	2010	2011	2012	Industry Profile
Sales Growth	64.74%	3.00%	3.00%	8.99%
Percent of Total Assets				
Other Current Assets	0.92%	0.82%	0.72%	47.95%
Total Current Assets	18.07%	27.87%	36.03%	75.78%
Long-term Assets	81.93%	72.13%	63.97%	24.22%
Total Assets	100.00%	100.00%	100.00%	100.00%
Current Liabilities				
Current Liabilities	2.27%	1.71%	1.56%	37.02%
Long-term Liabilities	33.93%	29.94%	26.61%	17.33%
Total Liabilities	36.19%	31.65%	28.17%	54.35%
Net Worth	63.81%	68.35%	71.83%	45.65%
Percent of Sales				
Sales	100.00%	100.00%	100.00%	100.00%
Gross Margin	71.63%	71.63%	71.63%	100.00%
Selling, General & Administrative Expenses	15.24%	15.26%	15.29%	71.53%
Advertising Expenses	0.03%	0.04%	0.04%	0.43%

Profit Before Interest and Taxes	48.98%	49.00%	49.02%	3.52%
Main Ratios				
Current	7.97	16.28	23.10	1.67
Quick	7.97	16.28	23.10	1.34
Total Debt to Total Assets	36.19%	31.65%	28.17%	58.87%
Pre-tax Return on Net Worth	27.54%	23.50%	20.58%	19.83%
Pre-tax Return on Assets	17.57%	16.06%	14.78%	8.16%

Additional Ratios	2010	2011	2012	
Net Profit Margin	31.28%	31.46%	31.63%	n.a
Return on Equity	20.66%	17.62%	15.43%	n.a
Activity Ratios				
Accounts Payable Turnover	10.03	12.17	12.17	n.a
Payment Days	27	33	30	n.a
Total Asset Turnover	0.42	0.38	0.35	n.a
Debt Ratios				
Debt to Net Worth	0.57	0.46	0.39	n.a
Current Liab. to Liab.	0.06	0.05	0.06	n.a
Liquidity Ratios				
Net Working Capital	\$239,476	\$449,037	\$665,896	n.a
Interest Coverage	6.73	6.94	7.15	n.a
Additional Ratios				
Assets to Sales	2.37	2.61	2.85	n.a
Current Debt/Total Assets	2%	2%	2%	n.a
Acid Test	7.97	16.28	23.10	n.a
Sales/Net Worth	0.66	0.56	0.49	n.a
Dividend Payout	0.00	0.00	0.00	n.a

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