

# **Engineering Financial Strategies**

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## Congratulations!!

Welcome to *Engineering Financial Strategies*, your do-it-yourself guide to improving your business Financial Health that works for your engineering firm.

Once you've been through this guide, you'll know precisely what it takes to write effective Engineering Financial Reports and supporting documentation. More importantly, you'll have a sample of three powerful Financial Reports to get you started.

This is the next step in your business story. From this point on, you won't have to stab in the dark – you'll have clear direction. You'll start to see some real results for your efforts.

Once completing the on-line courses at our web-site [www.engineeringbusinesspubs.com](http://www.engineeringbusinesspubs.com), you will be awarded with 7 PDH. The on-line courses include reading this guide and passing three tests on our web-site.

Currently 30 U.S States require licensed engineers to obtain continuing education credits (CEU) or professional development hours (PDH) in order to renew their license. The PDH awarded by our seminar will be accepted by your state licensing board. **I personally guarantee it.** If your state board rejects our on-line seminar PDH, please forward us a copy of the board's letter and we will refund to you the cost of the on-line seminar.

## How to Use this Guide

Each section covers an important aspect of your Financial Reports – these are terms and formulas used to create these reports. Understanding these reports will allow you to better understand the financial performance of your business.

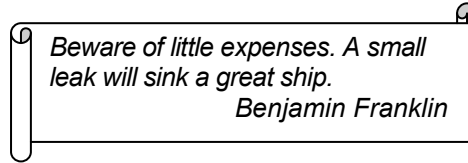
You will be surprised how much this guide will reveal about your business financial efforts. It will get you to think about important issues that may have never crossed your mind in the past. It may also uncover new issues. But it is never a better time to put together or update your Engineering Financial Strategies than now.

While reading please go ahead and jot down some notes in the spaces provided. It will help to improve your Engineering Financial Plan.

Later sections will go into greater depth describing how to develop a Increasing Profitability, Decreasing Expenses, the three main Financial Reports, and Financial Indicators.

Now, it's time to get started.

## The Engineering Business Financial Component



The Civil Engineering Business can be described as four components consisting of Operations, Financials, Clients, and the Offer. A diagram of the connection between these individual components was further discussed in the *Engineering Business Plan* guide. The guide can be found on our website [www.engineeringbusinesspubs.com](http://www.engineeringbusinesspubs.com). That diagram is redrawn in the Figure 1 below.

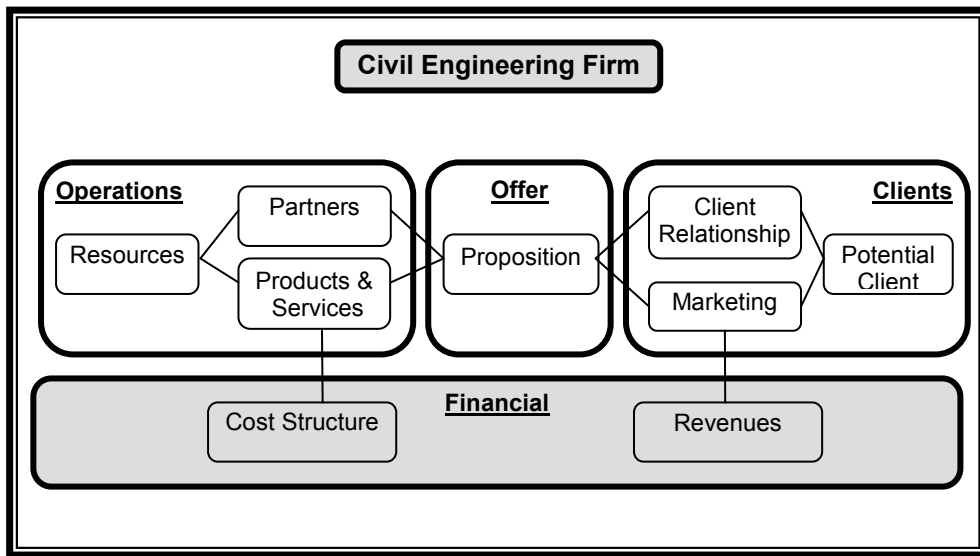


Figure 1 – Engineering Business Model with its Components

This guide discusses the Financial Component which consists of the Cost Structure and Revenues.

Let's get started with the Financial Plan.

### What is a Financial Plan

No matter what the economic conditions it is always important to run your business as efficiently as possible. A professional entrepreneur is extremely knowledgeable about their professions, but rarely are they experts in operating their company's. When the money is pouring in the door your reaction is to rapidly grow your business. When the money slows or stops coming in the door your first reaction is cutting costs and downsizing. Neither case is always the best course of action. Before making any decision it is better to review your

company's financial health, and then determine the markets direction, and then, if necessary, expand or condense the business.

In a growing market it is fairly easy to obtain new work for the firm by just providing a good service that is timely. When work slows a little or the company wants to grow, all the company has to do is to increase the networking opportunities and get the word out that the firm has expanded its services and is able to take on more clients. But when the markets drastically slow down, it's not enough to work as usual. The competition stiffens and the available jobs become less and less. At this point, the company will have to make some tough financial decisions.

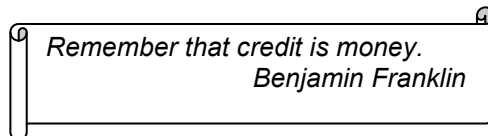
The goal of the Financial Plan is to create profits for the business and the necessary cash flow to operate efficiently. The business can not survive for long without profits. The Financial Plan will guide the company how to increase Receivables and decrease Payables. The difference between the two is profits. But the Financial Plan also provides directions for other issues. Such as increased company ownership of the business, long-term and short-term debt, and liquidity.

## Account Payable versus Accounts Receivables

Companies create capital by increasing incoming cash and reducing outgoing cash. These two accounts are known as Accounts Payable (AP) and Accounts Receivables (AR).

**Accounts Payable** - This account consist of debts that the company owes to creditors, but has not paid yet. When an invoice is received it is added to the account, and then removed once it has been paid.

**Accounts Receivable** – Money which is owed to a company by a customer for products and services provided on credit (invoiced). This is treated as a Current Asset on the Balance Sheet.



## 10 Keys to Increased Profitability



### ***Key 1: Increase Service Fees***

Increasing your services fees by a little can yield a significant increase in your profits. As an example, your firm has a service which charges \$1000 with a profit margin of 10% (\$100). If you increase the fee by 5% (\$50), your profit would increase by 50% (\$150). This small increase in fees is most likely not even noticeable to your clients, but it can be very noticeable on your company's Profit and Loss Statement.

## **Key 2: Company Size depends on the Workload**

The company should be set-up to allow for the number of employees to vary depending on the workload. This can be accomplished by hiring independent contractors or sub-consultants where possible: also known as out-sourcing. The only permanent employees are those that are absolutely necessary. Outsourcing allows the company to restructure to handle a large number of new contracts when the times are good and then reduce staff when there are few contracts during poor economic conditions.

Note: The independent contractor has an advantage over an employee. An independent contractor is able to obtain work from several different sources not just your firm. Some companies will need their services more than others at various times.

## **Key 3: Don't Focus on Sectors with Very Small Profit Margins**

Although during a tough economy companies may be forced to take on what ever comes along, don't focus your marketing efforts on those sectors that constantly contract with the firm with the cheapest offer. Professional services companies like engineering firms should never compete on price alone. A good engineer can save a developer thousands if not millions of dollars which will usually far exceed the engineer's fees. Sectors that haggle the service fees are usually not worth the expense. In essence don't buy the job. There are those clients that will expect that since times are rough you should provide even more concessions; free or drastically reduced fees to keep them as a client. It's almost never a good idea buying a project just to have work. Know where your company's break even point, and what sectors and services make the most profit. Anything less will force your business to possibly close.

## **Key 4: Contact Existing and Previous Clients for New Contracts**

The best source of new work is from existing or previous clients. If you did a good job for them in the past, they will be more than willing to use your services again. Even if they have gone with another engineer, they may want to contract with you again, because the new engineer has not treated them as well. In some cases, clients may have lost your contact information. In this case they would be glad to hear from you again.

There's nothing better in business than satisfied clients. This is the foremost marketing tool used in the engineering profession. Losing clients to other engineering firms, means an immediate loss in revenues and can only be regained by finding new clients. In order to find new clients you will have to set aside additional funds to market them, which will further reduce your bottom line. Your existing clients can increase your revenues by either awarding you with new projects or by assisting you in finding new clients. They may be so satisfied with your performance that they may not have noticed that you need additional work. Your clients know other people in the same industry who maybe also dissatisfied with their professional designers. Your clients will be your best marketer, and when their referrals call you they are already sold on you. Sometimes your clients may be a large

company requiring the services of several engineering firms. If they really like your performance, they might just give you a larger share of their available jobs. The best source of new work is always through your existing clients.

### **Key 5: Provide the Service You Said You Would**

Clients expect that the engineer will provide all of the services as stated in the contract. This is why the proposal is so important. The services to be provided should be as explicit as possible, and every attempt should be made to restate any vague language. Also a section in the proposal should include what is expected of the client. Before signing the Agreement make sure that both you and the client understand what is expected of both parties. If the customer believes you are to provide a service that is not in the contract, may cause serious problems later, and may cause the client to be disgruntled and not willing to do any more work with you. Whether the economy is in good times or tough explicit language in the contract is extremely important.

### **Key 6: Be Patient and Stay Focus in Your Marketing**

Marketing is always ongoing. The way you dress, your attitude, your correspondence, and all of your literature affect your marketing efforts. Sooner or later your future client will need your services, and you want them to pick up the phone and talk to you. In the mean time you are building a relationship with your current and future clients. It seems that marketing becomes top priority when the revenues fall. But in reality marketing should be consistent. Constantly evolving as the company grows. If you need to brush up on your marketing skills then refer to our guide *Engineering Marketing Strategies*.

### **Key 7: Provide Detailed Proposals to Positive Leads**

Engineering is a complicated profession that is guided by very detailed specifications and procedures, but why do engineering proposals delivered to clients are all too often vague without any structure? Very few projects performed by an engineer can be spelled out on one sheet of paper. Some clients may ask for a simple one page proposal, but they are the same ones to ask for freebies because they thought the service was included in the proposal. Engineers are not construction contractors. The professional service provided by one firm will not be the same as another engineering company. A complete professional proposal should include a cover letter, agreements, definitions, assumptions, services, fee schedule, and project schedule. A complete proposal separates your firm from the competition, and clearly shows what the client can expect from you. Refer to Chapter 3 for more details on preparing a proposal.

### **Key 8: Inform Your Clients of All of Your Available Services**

Every had clients hire an attorney to prepare and process entitlement applications. An attorney can be charging your client \$300 or more per hour and providing a service that is no more effective then if your company had prepared and processed the application. Attorneys love it when your clients

think that the best representative for Entitlements is them. Sure in some difficult sites that maybe the case, but 90% of the time they're not. When asking your client why they selected a lawyer, they may say something like I didn't know your firm could provide the same services. They may think that you only provide Tentative Maps and Development Plans. That's why it is so important to promptly show your services on all of your marketing materials. Believe it or not most people just don't know what all engineers can do, which means we might be leaving thousands of dollars on the table.

### **Key 9: Cross Promote Your Company and Services to Other Companies**

Many engineering companies sub-contract out several engineering tasks like Traffic Impact Analysis, Technical Drainage Studies, Surveying, Structural Analysis, Environmental Impact Studies, Geotechnical Reports, and many other tasks. If your firm provides these specialized services, it would be a good idea to let other engineering companies know. These firms may be seeking for someone to complete a Technical Drainage Study. In addition, they may also provide a service that your firm sub contracts. They may be great at Traffic Impact Analysis. Make an offer that if they will contract with your firm for Technical Drainage Studies, your firm will contract with them to provide Traffic Impact Analysis. Both firms can benefit from the agreement.

### **Key 10: Joint Venture with other Businesses to Increase Your Services**

Often engineering companies will team with other companies to bid for a project; especially government projects. Usually the primary has completed several government contracts, and is sub contracting your firm to handle a percentage of the work. Larger firms generally team with smaller firms to satisfy the government requirement that a certain percentage of the work must be contracted with a small business or disadvantaged business. The partnering also allows the companies to provide all of the services necessary to complete the task. Your firm is then not competing with other much larger companies. A less common practice and usually far more lucrative is to partner with other companies to seek land to design and build a project. This is discussed in greater detail in Chapter 8.

## **10 Keys to Keeping the Business Expenses Low**



Here are 10 ways your engineering company can trim costs without touching your core business.

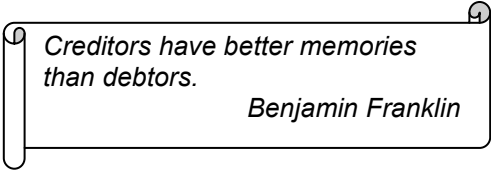
### **Key 11: Recording Your Expenses**

Probably the best key to reducing expenses is to accurately determine where the money is going and establishing controls. Recording expenses can accomplish three major tasks: cataloging, tracking, and control.

Cataloging Expenses - Using financial software to record your business expenses, is extremely useful if each expense item is categorized correctly. Marking receipts from convenience as fuel may not be quite right. Is a portion of the receipt for oil, radiator fluid, sodas, and snacks? Are office supplies receipts correctly annotated? A careful review of each receipt may reveal a number of discrepancies. Some expenses may be tax deductible while others may not be reimbursable.

Tracking Expenses - In addition, accurately categorizing expenses will reveal where the money is being spent. Does the office supplies budget appear to be a little high? What about business lunches? A review of the monthly expenses may indicate that certain expenses are not necessary while others in other categories are being underutilized. It will show any unexpected spikes in spending that may need to be addressed and discussed.

Control Expenses - Once you know where the money is being spent you can then set a budget for each line item and control expenses. How much plotter paper and ink is necessary? Can it be reduced by reviewing plot files on a computer monitor? Is plotting at a local printing shop cheaper than in-house? Every penny saved is added to the company's bottom line.



*Creditors have better memories  
than debtors.*  
Benjamin Franklin

## ***Key 12: Office Location***

Depending on the size of your business certain locations are more suited. Trying to operate a business that only has gross annual revenue of \$300,000 out of 4,000 square foot building may not be appropriate. There are many different locations to operate an engineering business; home-office, virtual office, executive suites, leasing professional office space, and owning an office building. Each has their advantages and disadvantages.

Home-Office – If your company is very small and you are able to obtain a business license for a home office, it can be a very good way to keep your expenses low. Obviously there are no leasing expenses and the space used is tax deductible. Check with the local government to make sure they will allow a business in your home. You will need to obtain a business license in order to render any professional services. Usually professional services entrepreneurs can obtain a license to operate out of their home, since clients will not be at the office or large deliveries of supplies will not be showing-up at the front door every day disrupting the neighborhood. But the question always arises when someone should leave the home office and open a business in a commercial building. This really depends on the revenues one is able to generate and whether one has outgrown their

available space. The best answer is probably to stay in your home as long as possible to keep the over-head expenses as low as possible. Initially, a professional license may be sufficient to grow the client list and establish enough revenue to operate the business. The disadvantage to the home office is that clients when visiting your office will not consider it as a real business, and may question the credibility of the firm.

Virtual Offices – These companies literally lease a space on the wall. The physical presence of the company is actually somewhere else. The basic package is nothing more than an address, a place to hang the business license, and mail service. Usually the business that lease virtual offices also offer additional services to the basic package such as phone service, fax service, community office, community conference rooms, and so on. This type of service is meant to be for a short period of time, but in some cases can be a more permanent situation. Leases are usually month to month. Again, the disadvantage to a virtual office is that clients when visiting your office may not believe your community office or conference room as a real business, and may question the credibility of the firm.

Executive Suites – A business that leases out individual offices with common uses such as rest rooms, break areas, lounges, conference rooms, spare office, mail service, parking, custodial service, secretarial staff, and phone answering service. In addition, the leasing includes the utility bills and phone book ad service. There are some major advantages to executive suites. First, you have a real commercial address, which adds credibility to the company. Clients can meet you in your office or in a conference room. Most leasing agreements are for a fairly short period of time usually one to three months, which has an advantage if the business doesn't do well and you need to move or terminate the lease. Disadvantage executive suite leases are higher than a traditional office space, usually two to three times per square foot. When it comes time to expand your business to include additional office space for new staff the executive suite option may not be attractive any longer. Also if you move the business to another executive suite complex or an office space, you may lose your company phone and fax numbers. To overcome this scenario try to find a building that has both executive suites and traditional offices for lease. Then when it comes time to expand you can move the business to a different location in the building and possibly maintain the address, and phone and fax numbers.

Leasing a Professional Office Space – If your company significantly grows to a size where the executive suite services are no longer economical, then it may be time for leasing a portion or all of an office building. The lease per square foot are usually low, but all of the services the executive suites provides, including the utilities, the company will now have to provide. The leases for office buildings are also much longer; usually three years or longer. Make sure that the client base is sufficient and the market conditions are right to maintain a lease that long. The disadvantages to a professional office space is that if business drastically slows down, the property managers may not be willing to renegotiate the lease and will hold you responsible for the full term of the lease. To avoid this scenario try to lease the facilities with a clause that will let you sub-lease the property. The ability to lease a portion of your office space if the need arises may save your company.

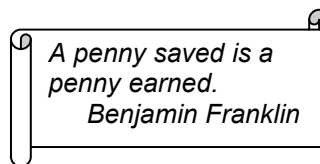
Owning a Professional Office Building – For a large firm this may be a better option than leasing a building. Obviously the business is responsible for the mortgage, but the company can lease portions of the building to create additional revenues. If the market is performing poorly and the engineering company is unable to attract sufficient amount of new contracts it can lease a greater portion of the building. There are disadvantages to owning an office building such as a possible mortgage, property taxes, insurance, but there are plenty advantages.

### ***Key 13: Using the Internet over the Postal Service***

In today technological world using stamps to mail anything should be done sparingly. Most communication can be done by email or visiting a website including sending invoices, drawings, letters, reports, and payments. Most everything can be done over the internet at little to no cost. Not only responding well to environmental concerns, using the electronic media and the internet cut your company costs. These costs include postage, envelopes, package material, paper, ink, and so on. Also utilizing electronic media and the internet, clients receive communications within minutes versus several days using the postal service.

### ***Key 14: Making use of Telecommuting***

Again taking advantage of today's technological world, much of the work in an engineering design firm does not have to be done in one central office. The standard engineering office consists of engineers, managers, designers, CAD Operators, and administrative staff. The company is paying for all of the office space, furniture, and utilities to house these individuals. Many of these individuals can work at home with company computers working on the designs. Software can be installed on the machines measuring the actual man hours on the projects and communications between the staff and management can be done over the internet. The employee does not have to spend time and money commuting to the office, and the company doesn't have to pay for the floor space. If after you send some of your employees to their home to work frees up significant office space, you just might be able to sub-lease that out to another business and increase your revenues. There are some disadvantages to having employees working at home. First, it is much harder to work at home with all of its distractions.



### ***Key 15: Negotiate better Lease Terms and Rates***

In a struggling economy property managers are desperate to keep their tenants. If your lease is about to expire, these managers maybe very interested in lowering your lease to help you and keep your business in their facility. If they are not negotiable well there are other commercial property that maybe more than willing to get your business.

### ***Key 16: Buying other Businesses Assets***

Why buy new equipment and furniture when there are plenty of businesses closing their doors no matter the economic conditions. There are always good deals at other businesses liquidation sales. They are usually in a hurry to unload their assets, and are willing to accept any reasonable offer. Other sources to check out are resellers and liquidators. They are usually found in second hand or refurbished Office Furniture stores.

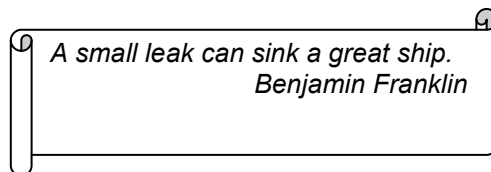
### ***Key 17: Control Office Expenses***

Try to keep the office supplies expenses as low as possible. Since office supplies are loose items staff may unknowingly abuse the supply. Take the case of pens. Pens are often left behind in the field, and then replaced once back at the office. If your average employees losses two pens per week that may be \$2 a week or \$104 a year. If you have 10 people employed by the business, which would be \$1,040 per year of loss profits. Some of the key areas to observe are listed below:

Cell Phone Usage – Only the staff members who spend time away from the office should have a company cell phone. Each staff member cell phone usage log should be reviewed. If the phone is being used for other than company matters, the additional minutes should be questioned. Were there is excess personal time on the cell phone; the company should billed the staff member. Another item to look at with cell phone usage is to reduce long distance charges by purchasing phone cards.

Photocopier and Plotters – If you are not careful, it is pretty easy to print a lot of paper. Especially, when you are printing draft copies. Drafts should be held to a minimum. In most cases drafts can be reviewed on the computer screen even large sheets like 24"x36", unless you have a really small screen, and in that case the office should invest in buying new monitors. Eating up a roll of plotter can be expenses when you include the cost of the roll and the plotter ink.

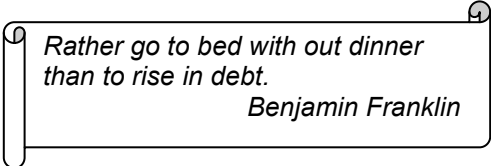
Keeping Track of Equipment and Supplies – As we mentioned above, even the smallest thing like losing pens can cost the company a lot of money. Keeping track of where the supplies are going, you may find out who unknowingly or willfully is being wasteful.



### ***Key 18: Marketing Budget***

In most cases the Marketing Budget should never be reduced. In fact, during a slowing economy the marketing efforts should be significantly increased. But with that said every effort should be made to question every marketing campaign. Is the money being spent, actually getting results? The good news is that most engineering marketing does not cost very much. If you find that your

firm is spending thousands of dollars on advertisements in the yellow pages, and none of your clients even noticed the advertisement, then it might be wise to reallocate your marketing budget to venues that actually gets results. For a good review of marketing for engineering companies take a look at our *Engineering Marketing Strategies* guide at our website [www.engineeringbusinesspubs.com](http://www.engineeringbusinesspubs.com)



*Rather go to bed with out dinner  
than to rise in debt.*  
Benjamin Franklin

### ***Key 19: Review Your Insurance Policies***

How much is your company spending on insurance? If you haven't compared insurance rates in several years, it's probably time to shop around. While you are doing this, re-evaluate your coverage. Increase your deductible to at least \$1,000 (then put this amount in an interest-bearing bank account until needed, so it's earning money for you rather than the insurance company). If you have several different policies, ask insurance companies to quote a single umbrella policy, which might lower your premium.

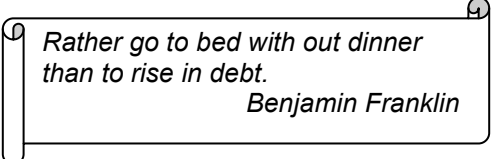
### ***Key 20: Business Taxes***

Every business has to pay taxes and fees. Waiting until tax filing day may be a little late to control how much those will be. There are two types of taxes; payroll taxes and business profit taxes. To avoid penalty fees the tax forms must be filled out correctly and they must be filed on time. The government will fine for filing late. You make a mistake on the forms it will lead to an overpayment or an underpayment. Either case cost your company money. To avoid these penalties you will need to (1) make out a calendar of due dates of specific tax forms and reports, (2) have the instructions for filling out each tax form and report on hand in hard-copy, and (3) make sure that the employee(s) that is filling out the reports is trained in doing so or has access to help. If you don't have the staff to file out these forms, make sure to hire a good accountant.

The first step to not paying more business taxes then necessary make sure that you are claiming as many business expenses as are possible. To ensure this you will need to (1) know what things qualify as a business expense, (2) what form or line the business expense will need to be accounted for on, and (3) how to keep track of your business expenses. The Internal Revenue Service (IRS) has a publication that explains of the qualified business expenses: Publication 535 - Business Expenses. Publication 535 goes over: deducting business expenses, employees' pay, retirement plans, rent expenses, interest, taxes, insurance, costs that you can deduct or capitalize, amortization, depletion, business bad debts, electric and clean-fuel vehicle deductions, miscellaneous business expenses, and where to get assistance.

## ENGINEERING FINANCIAL STRATEGIES

You will also need to keep track of your expenses. Your firm should have a filing system for all of the business receipts and invoices for supplies; a separate folder for employment tax expenses including a photocopy of the reports, forms, checks, and payment coupons that you submitted to the IRS and state department of income tax; receipts for use of petty cash; and signed employee expense forms that detail what expenses your firm reimbursed its employees for. Try to keep your receipts organized so if your firm is audited, you will be able to quickly retrieve the receipts that are needed to prove that the deductions were valid.



*Rather go to bed with out dinner  
than to rise in debt.*  
*Benjamin Franklin*

## Understanding Expense Reports



There are three key financial statements that every company needs to analyze to determine the financial health of their business: Balance Sheet, Income Statement, and Cash Flow Statement.

### Balance Sheet

The Balance Sheet shows whether there is sufficient growth of net worth or a decline in net worth. The Figure below is the Balance Sheet Outline. Note that the Assets are on the left hand side and the Liabilities and Equity are on the right hand side. Equity is also referred to as Net Worth and Shareholders' Equity.

Figure 1 - Balance Sheet Model

<b>Balance Sheet</b>	
<b>Assets</b>	<b>Liabilities</b>
Cash	Accounts Payable
Investments	Long-Term Debt
Accounts Receivables	<b>Equity</b>
Inventory	Stock
Fixed Assets	Retained Earnings
Intangibles	

The Statement summarizes the company's financial by expanding on the equation below.

$$Assets = Liabilities + Equity$$

The Balance Sheets answers three questions; who owns the business, how lean is the business, and how liquid is the business.

#### Who Owns the Business?

Who ever gave the company money to operate owns the business. If you have debt, the Lenders own the business. If you have stocks, the stockholders own the business. If you have retained earnings, the business owns the business.

The bank usually has priority on receiving. If your company doesn't pay the interest on the loan the bank will foreclose on the business and take the collateral. The business may even have to go into bankruptcy, because it can not meet its obligations on the loan.

Stockholders expect to see a return on their investments into your company. If they don't see their share values increasing, they will pull their money. If they are accustomed to receiving Dividends they will continue to receive Dividends. If not they will become alarmed that the company is not making sufficient profits, and will pull their investments.

The company may also own the business due to the amount of Assets and Cash. The company can continue to reinvest in itself to grow the company. Also to reduce the amount of outside control of the company can buy back stocks to keep the value high, it can also pay down the bank loans to reduce its long-term debt.

### How Lean is the Business?

A lean business has its Current Assets (Cash for Operations, Accounts Payable, and Inventory) slight ahead of its Current Liabilities (Accounts Payable). The difference between Current Assets and Current Liabilities is known as Working Capital. So a lean company has a small amount of Working Capital, which indicates good management of resources.

### How Liquid is the Business?

On the Balance Sheet the most liquid asset is Cash, and the least liquid are Fixed Assets like equipment and buildings and Intangibles like brand name and patents. A company is more liquid the further up the list and less liquid the further down the list. The liquidity of a company determines its ability to make changes if the market or the competition changes direction.

## **Income Statement**

The Income Statement is also known as the P&L, Profit and Loss, and Statement of Revenues and Expenditures. The Income Statement is based on the equation that profit is the difference between Revenues and Expenses. Other names for profit are earnings, income, and net income.

$$Profit = Revenues - Expenses$$

The Income Statement further breaks down the Expenses by Costs to determine the Gross Profit Margin, Operating Profit Margin, and the Net Profit Margin. The Income Statement can be summarized as shown in the Figure below.

Figure 2 - Income Statement Model

<b>Income Statement</b>
Sales
Less Cost of Goods Sold
<hr/>
Gross Margin
Less Operating Costs
<hr/>
Operating Margin
Less Taxes, Other
<hr/>
Net Income or Net Profit Margin

## Cash Flow Statement

Cash flow projections are critical to the success of your business. Having adequate cash flow is essential to keep your business running. If you are out of available cash, you run the risk of not being able to meet your obligations for payroll, accounts payable, and loan payments.

### Cash versus Accrual Method of Accounting

The Cash Flow Statement is a fairly simple Financial Report to understand. You have a starting cash amount at the beginning of the financial period. The company then generates and spends Cash during the financial period. And then at the end of the financial period you either have more or less cash than you began with. If you are like most other engineering companies that use the Accrual method of Accounting (Accounts Receivables), the Ending Cash Value will not be the same as Net Profit Margin. The Cash Flow Statements deals with the actual cash not credit. This Financial Report is summarized in the Figure below.

Figure 3 - Cash Flow Statement Model

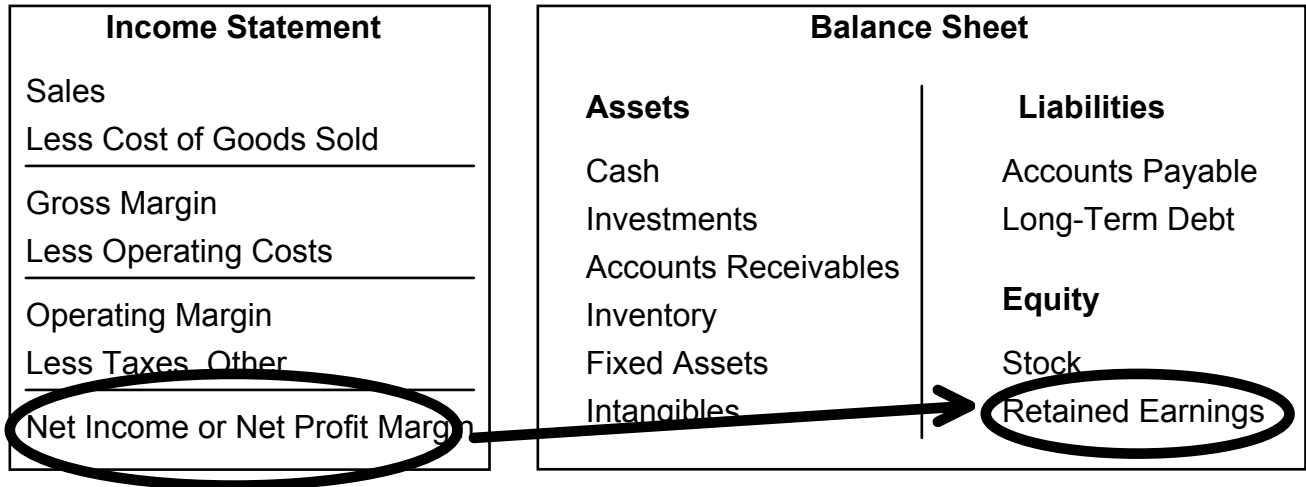
<b>Cash Flow Statement</b>
Beginning CASH
Plus CASH Collected
Less CASH Paid
<hr/>
Ending CASH

## Relationship between the Financial Statements

Now, let's look at how the three reports relate to one another.

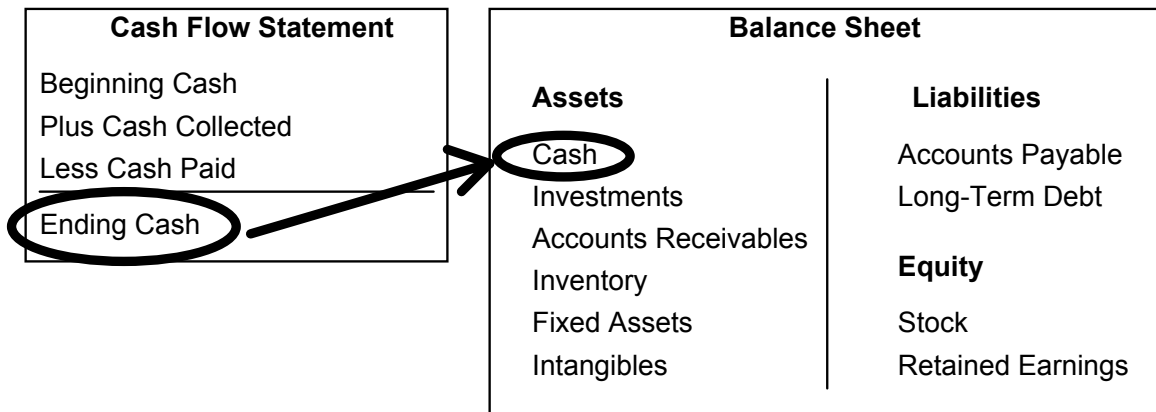
The Net Profit Margin (The Bottom Line) on the Income Statement is related to the Retained Earnings on the Balanced Sheet.

Figure 4 - Relationship between the Income Statement and the Balance Sheet



The Ending Cash (The Bottom Line) on the Cash Flow Statement is detailed description of the Cash line item on the Balanced Sheet.

Figure 5 - Relationship between the Cash Flow Statement and the Balance Sheet



Now let's look how these statements apply to an engineering company.

### Cash Sales

## ENGINEERING FINANCIAL STRATEGIES

A cash sale has just been agreed to between the client and the engineer for \$500 for a drainage compliance report. Cash is to be paid before the engineer gives the client the report. The engineer can finish the report in less than day. It will cost the engineering company \$250 to produce the report.

Figure 6 - Example Income Statement for a Cash Sale

<b>Income Statement</b>	
Sales	500
Cost of Goods	250
<hr/>	
Gross Margin	250
Operating Costs	0
<hr/>	
Operating Margin	250
Less Taxes, Other	0
<hr/>	
Net Income	250

Now let's use the Cash Flow Statement. The company's cash on hand has just increased by \$500. The cost to produce the report, mostly the engineer's salary, will be paid later.

Figure 7 - Example Cash Flow Statement for a Cash Sale

<b>Cash Flow Statement</b>	
Beginning CASH	
+ CASH Collected	500
- CASH Paid	0
<hr/>	
Ending CASH	500

Now let's fill out the Balance Sheet. The cost to produce the report is taken into account, yielding a Retained Earning of \$250.

Figure 8 - Example Balance Sheet for a Cash Sale

<b>Balance Sheet</b>			
<b>Assets</b>		<b>Liabilities</b>	
Cash	500	Accounts Payable	
Investments		Long-Term Debt	
Accounts Receivables			
Inventory	- 250	<b>Equity</b>	
Fixed Assets		Stock	
Intangibles		Retained Earnings	250
	250		250

Note: Retainers are Cash Sales. Because this money is received at the beginning of the contract, there is no credit extended to the client for the Retainer. Invoices are for services completed by the engineering company, which the company is extending credit to the client. Invoices are filed in the engineering company's Accounts Receivables records (See below).

Credit Sales

Most sales in an engineering company are with credit. An invoice is issued for services completed and the client pays the invoice 30 or more days later. A credit sale is handled a little different on the three statements. A month of services has been completed on a design contract and the engineer issues the client an invoice for \$5,000. The engineering company has spent \$3,500 to provide the month of services.

This transaction is recorded on the Income Statement as shown in the Figure below.

Figure 9 - Example Income Statement for a Credit Sale

<b>Income Statement</b>	
Sales	5,000
Cost of Goods	3,500
Gross Margin	1,500
Operating Costs	0
Operating Margin	1,500
Less Taxes, Other	0
Net Income	1,500

Since the Cash Flow Statement only shows the actual cash received this month, the company's cash on hand has not changed.

Figure 10 - Example Cash Flow Statement for a Credit Sale

<b>Cash Flow Statement</b>	
Beginning CASH	0
+ CASH Collected	0
- CASH Paid	0
<hr/>	
Ending CASH	0

The Balance Sheet reflects the transaction by adding \$5,000 to Accounts Receivables and costing the company \$3,500 to complete the services, which means the company has retained earnings of \$1,500. The Figure below summarizes this transaction on the Balance Sheet.

<b>Balance Sheet</b>	
<b>Assets</b>	
Cash	0
Investments	0
Accounts Receivables	+5,000
Inventory	- 3,500
Fixed Assets	
Intangibles	
	<hr/>
	+1,500
<b>Liabilities</b>	
Accounts Payable	
Long-Term Debt	
<b>Equity</b>	
Stock	
Retained Earnings	+1,500
	<hr/>
	+1,500

Now that the client has paid the invoice within the 30 days, how is this transaction reflected on the 3 statements? Since you sold nothing to earn this payment the Income Statement is not affected.

Figure 11 - Example Income Statement for Receiving Payment on a Credit Sale

<b>Income Statement</b>	
Sales	0
Cost of Goods	0
<hr/>	
Gross Margin	0
Operating Costs	0
<hr/>	
Operating Margin	0
Less Taxes, Other	0
<hr/>	
Net Income	0

Because the company has received cash, the Cash Flow Statement is affected. The company has collected \$5,000, and in this scenario there is no sub-consultants to be paid.

Figure 12 - Example Cash Flow Statement for Receiving Payment on a Credit Sale

<b>Cash Flow Statement</b>	
Beginning CASH	0
+ CASH Collected	5,000
- CASH Paid	0
<hr/>	
Ending CASH	5,000

The Balance Sheet shows that the company has received \$5,000 in cash and that \$5,000 has been removed from the Accounts Receivables.

## ENGINEERING FINANCIAL STRATEGIES

Figure 13 - Example Balance Sheet for Receiving Payment on a Credit Sale

<b>Balance Sheet</b>				
<b>Assets</b>			<b>Liabilities</b>	
Cash	+5,000		Accounts Payable	
Investments	0		Long-Term Debt	
Accounts Receivables - 5,000				
Inventory	0		<b>Equity</b>	
Fixed Assets			Stock	
Intangibles			Retained Earnings	
	0			0

### Expenses

Non-depreciated Expenses are items that are small ticket items. Office supplies usually fit this category. As an example let's say you purchased a new binding machine for \$350. On the Income Statement your net income is reduced by \$350.

Figure 14 - Example Income Statement for Non-Depreciating Expense

<b>Income Statement</b>	
Sales	0
Cost of Goods	0
Gross Margin	0
Operating Costs	350
Operating Margin	0
Less Taxes, Other	0
Net Income	- 350

The company's cash flow is also reduced by \$350 affecting the Cash Flow Statement.

## ENGINEERING FINANCIAL STRATEGIES

Figure 15 - Example Cash Flow Statement for Non-Depreciating Expense

<b>Cash Flow Statement</b>	
Beginning CASH	0
+ CASH Collected	0
- CASH Paid	- 350
Ending CASH	- 350

The Balance Sheet will show that the company's Cash and Retained Earnings have been reduced \$350.

Figure 16 - Example Balance Sheet for Non-Depreciating Expense

<b>Balance Sheet</b>			
<b>Assets</b>		<b>Liabilities</b>	
Cash	- 350	Accounts Payable	
Investments	0	Long-Term Debt	
Accounts Receivables	0	<b>Equity</b>	
Inventory	0	Stock	
Fixed Assets		Retained Earnings	-350
Intangibles			-350
- 350			-350

### Capitalized Expenses (Depreciating Assets)

Now let's see what happens when the company decides to purchase a new plotter for \$10,000. Since this is a large purchase, Accounting will want to depreciate it over a period of time, usually 5 years. On the day of the purchase the income statement will have not been affected.

## ENGINEERING FINANCIAL STRATEGIES

Figure 17 - Example Income Statement for Depreciating Expense - Day 1

<b>Income Statement</b>	
Sales	0
Cost of Goods	0
<hr/>	
Gross Margin	0
Operating Costs	0
<hr/>	
Operating Margin	0
Less Taxes, Other	0
<hr/>	
Net Income	0

Because the company has paid cash for the plotter, the Cash Flow Statement is affected. The company's cash on hand has been used to purchase a \$10,000 plotter.

Figure 18 - Example Cash Flow Statement for Depreciating Expense - Day 1

<b>Cash Flow Statement</b>	
Beginning CASH	0
+CASH Collected	0
- CASH Paid	- 10,000
<hr/>	
Ending CASH	- 10,000

The Balance Sheet will show that the company Cash has been reduced by \$10,000 and the Fixed Assets will be increased by \$10,000.

## ENGINEERING FINANCIAL STRATEGIES

Figure 19 - Example Balance Sheet for Depreciating Expense - Day 1

<b>Balance Sheet</b>			
<b>Assets</b>		<b>Liabilities</b>	
Cash	- 10,000	Accounts Payable	
Investments		Long-Term Debt	
Accounts Receivables			
Inventory		<b>Equity</b>	
Fixed Assets	+10,000	Stock	
Intangibles		Retained Earnings	
	0		0

Since the company decides to depreciate the value of the plotter over 5 years, each year the value of the plotter will be further reduced by one-fifth of its value (\$2,000/year). Each year the Income Statement will show that the Operating Costs and thus the Net Income has been reduced by \$2,000.

Figure 20 - Example Income Statement for Depreciating Expense - 1 Year Later

<b>Income Statement</b>	
Sales	0
Cost of Goods	0
Gross Margin	
	0
Operating Costs	- 2,000
Operating Margin	
	0
Less Taxes, Other	0
Net Income	
	- 2,000

Because the company has not received or paid out any cash, the Cash Flow Statement is not affected. The company's cash on hand has not changed due to depreciation.

ENGINEERING FINANCIAL STRATEGIES

Figure 21 - Example Cash Flow Statement for Depreciating Expense - 1 Year Later

<b>Cash Flow Statement</b>	
Beginning CASH	0
+ CASH Collected	0
- CASH Paid	0
<hr/>	
Ending CASH	0

Due to the new plotter, the Balance Sheet for the whole year will show the company's cash has been reduced by \$10,000, and the value of the \$10,000 plotter in Fixed Assets has decreased in value by \$2,000. Also the Retained Earnings will be reduced by \$2,000. This is summarized in the Figure below.

Figure 22 - Example Balance Sheet for Depreciating Expense - 1 Year Later

<b>Balance Sheet</b>			
<b>Assets</b>		<b>Liabilities</b>	
Cash	- 10,000	Accounts Payable	
Investments		Long-Term Debt	
Accounts Receivables		<b>Equity</b>	
Inventory		Stock	
Fixed Assets		Retained Earnings	- 2,000
Plotter	+10,000		
Less Accum Deprec-	2,000		
Intangibles			<hr/>
	<hr/>		- 2,000
	- 2,000		

At the end of the second year the Balance Sheet will show that the Fixed Assets has depreciated another \$2,000, and the Retained Earnings has also decreased by \$2,000 The Figure below summarizes the Balance Sheet for this asset depreciation.

Figure 23 - Example Balance Sheet for Depreciating Expense - 2 Years Later

<b>Balance Sheet</b>			
<b>Assets</b>		<b>Liabilities</b>	
Cash	0	Accounts Payable	
Investments	0	Long-Term Debt	
Accounts Receivables	0		
Inventory	0	<b>Equity</b>	
Fixed Assets	- 2,000	Stock	
Intangibles	_____	Retained Earnings	- 2,000
	- 2,000		- 2,000

## Working with the Budget

Often when the engineering market begins a downward slide there are several indicators ahead of time. It is important for the firm to be constantly on the watch anticipating these changes in the market forces, and begin making plans to compensate as early as possible. In 2008, the land development industry saw the residential market fall by as much as 60% in some areas of the country. Those who recognize the down turn early in 2007 had already made adjustments to their budgets by increasing their presence in the commercial development market and adjusting their budgets.

Although there was no way of projecting how big of an impact the decline would have on the companies' bottom lines, it was obvious that some affect would occur. The first indicator was that most home loan's with Adjustable Rate Mortgages (ARMs) were about to be readjusted. At first this didn't seem too big of a concern until foreclosures began to rapidly increase from the norm. Beginning in 2008 banks basically stopped lending. Developer's bank loans were being pulled and new loans were non-existing. Needless to say most development stopped. The next indicator occurred at the end of the first quarter of 2008 when gas prices rapidly increased to above \$4 per gallon. Wallets and bank accounts were being squeezed. People could not afford the rising prices and were struggling to meet their monthly mortgage payments and rents.

A successful company is constantly watching their budgets and reviewing market projections. The market indicators in 2007 and 2008 were telling engineering companies in land development that their revenues were most like to decrease by mid 2008. In order to keep the doors open the companies' budgets needed to be reviewed and determined what expenditures needed to be reduced or eliminated. As the revenues began decreasing the budgets were again adjusted. Finally as the recession deepened, the indicators started to suggest that the revenues in land development

design would slow to a trickle. Throughout the downward slide of the economy, budgets were reviewed again and again, and each time additional cuts were necessary.

When your company's targeted market begins to shrink the last resort should be laying-off employees. The first action that should be taken is to increase revenues by collecting on invoices and marketing for new projects. In a down turning market it is absolutely imperative to collect on outstanding debts. Long term outstanding debts (over 90 days) are most likely not to be collected. Any new projects the company is able to obtain should have a long life to stabilize the revenue streams into the company. The average length of time for a recession is about eighteen months. If your future projected revenues far exceed this timeline, then your firm should be able to weather the recession as long as your clients continue to pay. Contracts with short time lines (less than 3 months) actually cost the company more money due to the additional marketing efforts to maintain revenues. The survival of the company depends on revenues.

The Sample Budget Sheet at the end of this guide shows the budget for a small professional services firm. As the market indicators begin showing that the company's revenues were anticipated to be decreasing, the company calculated that the net yearly loss for the company would be \$15,535. In order to make the necessary changes to head off this loss the company immediately implemented several cost savings.

First, the company decided to reduce the line item budgets for advertising, auto expenses, depreciation, and travel and expenses. Although advertising was reduced from \$8,187 (about \$682 per month) to \$2,000 (about \$167 per month), marketing efforts remained the same by refocusing the company's strategies into less costly activities like speaking engagements, writing articles in various trade magazines, and calling old clients. These efforts may actually improve the company's name recognition in the community. The auto expense budget was also reduced by decreasing the amount of out of office trips and making use of multiple deliveries per trip. Depreciated items not in use were sold to remove the negative impact. Travel and Entertainment was almost completely removed by replacing out of state seminars with online courses. By being aware of the market conditions, the company's projected Income changed from a Projected Loss to a projected Profit.

ENGINEERING FINANCIAL STRATEGIES

**SAMPLE  
Budget Sheet**

Steve's Civil Engineering Firm's Revised Budget (Owner and 1 employee)

	BEFORE		AFTER	
	Year to Date	%	Year to Date	%
<b>SALES</b>				
Fix-Fee Contracted Budgets	\$165,600	77.71%	\$165,600	77.71%
T&M	\$45,000	21.12%	\$45,000	21.12%
Reimbursable	\$2,503	1.17%	\$2,503	1.17%
Write-Offs	\$0	0.00%	\$0	0.00%
<b>TOTAL SALES</b>	<b>\$213,103</b>	<b>100%</b>	<b>\$213,103</b>	<b>100%</b>
<b>COST OF SALES</b>				
Purchases	\$500	0.38%	\$500	0.38%
Outside Vendors	\$12,000	9.02%	\$12,000	9.02%
Equipment & Supplies	\$750	0.56%	\$750	0.56%
<b>TOTAL COST OF SALES</b>	<b>\$13,250</b>	<b>6.22%</b>	<b>\$13,250</b>	<b>6.22%</b>
<b>GROSS PROFIT</b>	<b>\$199,853</b>	<b>93.78%</b>	<b>\$199,853</b>	<b>93.78%</b>
<b>OPERATING EXPENSES</b>				
Salaries and Wages	\$139,261	64.66%	\$139,261	71.70%
Partners' Salaries	\$0	0.00%	\$0	0.00%
Taxes on Payroll	\$27,852	12.93%	\$27,852	14.34%
→ <b>Advertising</b>	→ <b>\$8,187</b>	3.80%	→ <b>\$2,000</b>	1.03%
→ <b>Auto Expenses</b>	→ <b>\$3,152</b>	1.46%	→ <b>\$900</b>	0.46%
Bad Debt Expenses	\$320	0.15%	\$320	0.16%
Copier Service	\$906	0.42%	\$906	0.47%
→ <b>Depreciation</b>	→ <b>\$9,297</b>	4.32%	→ <b>\$0</b>	0.00%
Dues/Subscriptions	\$417	0.19%	\$417	0.21%
Insurance	\$2,434	1.13%	\$2,434	1.25%
Internet Service	\$45	0.02%	\$45	0.02%
Professional Liability Insurance	\$2,600	1.21%	\$2,600	1.34%
Health Insurance	\$1,474	0.68%	\$1,474	0.76%
Legal and Accounting	\$2,828	1.31%	\$2,828	1.46%
Office Expense	\$1,813	0.84%	\$1,813	0.93%
Rent	\$8,688	4.03%	\$8,688	4.47%
Repairs & Maintenance	\$1,359	0.63%	\$1,359	0.70%
Supplies	\$356	0.17%	\$356	0.18%
Business License	\$100	0.05%	\$100	0.05%
Telephone	\$648	0.30%	\$648	0.33%
→ <b>Travel &amp; Entertainment</b>	→ <b>\$3,651</b>	1.70%	→ <b>\$227</b>	0.12%
Utilities	\$0	0.00%	\$0	0.00%
<b>TOTAL OPERATING EXPENSES</b>	<b>\$215,388</b>	<b>100.00%</b>	<b>\$194,228</b>	<b>100.00%</b>
<b>TOTAL OPERATING PROFIT</b>	<b>(\$15,535)</b>	<b>-7.29%</b>	<b>\$5,625</b>	<b>2.64%</b>

## SAMPLE Income Statement

Steve's Civil Engineering Firm's P&L (Owner and 1 employee)

	2009	
	Year to Date	%
<b>SALES</b>		
Fix-Fee Contracted Budgets	\$165,600	77.71%
Time & Material	\$45,000	21.12%
Reimbursable	\$2,503	1.17%
Write-Offs	\$0	0.00%
<b>TOTAL SALES</b>	<b>\$213,103</b>	<b>100%</b>
<b>COST OF SALES</b>		
Purchases	\$500	0.38%
Outside Vendors	\$12,000	9.02%
Equipment Supplies	\$750	0.56%
<b>TOTAL COST OF SALES</b>	<b>\$13,250</b>	<b>6.22%</b>
<b>GROSS PROFIT</b>	<b>\$199,853</b>	<b>93.78%</b>
<b>OPERATING EXPENSES</b>		
Salaries and Wages	\$139,261	64.66%
Partners' Salaries	\$0	0.00%
Taxes on Payroll	\$27,852	12.93%
Advertising	\$8,187	3.80%
Auto Expenses	\$3,152	1.46%
Bad Debt Expenses	\$320	0.15%
Copier Service	\$906	0.42%
Depreciation	\$9,297	4.32%
Dues/Subscriptions	\$417	0.19%
Insurance	\$2,434	1.13%
Internet Service	\$45	0.02%
Professional Liability Insurance	\$2,600	1.21%
Health Insurance	\$1,474	0.68%
Legal and Accounting	\$2,828	1.31%
Office Expense	\$1,813	0.84%
Rent	\$8,688	4.03%
Repairs & Maintenance	\$1,359	0.63%
Supplies	\$356	0.17%
Business License	\$100	0.05%
Telephone	\$648	0.30%
Travel & Entertainment	\$3,651	1.70%
Utilities	\$0	0.00%
<b>TOTAL OPERATING EXPENSES</b>	<b>\$215,388</b>	<b>100.00%</b>
<b>TOTAL OPERATING PROFIT</b>	<b>(\$15,535)</b>	<b>-7.29%</b>
<b>TAXES</b>		
State Taxes	\$0	0%
Federal Taxes	\$0	0%
<b>NET PROFIT MARGIN</b>	<b>(\$15,535)</b>	<b>-7.29%</b>

## SAMPLE Cash Flow Statement

Steve's Civil Engineering Firm's Projected Cash Flow

<b>CASH FLOW STATEMENT</b>			
	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>
<b>BEGINNING CASH BALANCE</b>	<b>\$145,000</b>	<b>\$130,612</b>	<b>\$129,384</b>
<b>CASH RECEIVED</b>			
Cash from Operations	\$2,450	\$2,450	\$2,575
Cash Sales	\$25,500	\$25,500	\$26,775
Cash from Receivables	\$175,250	\$175,250	\$184,000
<b>SUBTOTAL CASH FROM OPERATIONS</b>	<b>\$203,200</b>	<b>\$203,200</b>	<b>\$213,350</b>
<b>ADDITIONAL CASH RECEIVED</b>			
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	\$2,500	\$0	\$0
Sales of Long-term Assets	\$5,500	\$0	\$0
New Investments Received	\$0	\$0	\$0
<b>SUBTOTAL CASH RECEIVED</b>	<b>\$8,000</b>	<b>\$0</b>	<b>\$0</b>
<b>EXPENDITURES</b>			
Expenditures from Operations	\$215,388	\$194,228	\$194,228
Cash Spending	\$0	\$0	\$0
Payment of Accounts Payable	\$10,200	\$10,200	\$10,200
<b>SUBTOTAL SPENT ON OPERATIONS</b>	<b>\$225,588</b>	<b>\$204,428</b>	<b>\$204,428</b>
<b>ADDITIONAL CASH SPENT</b>			
Sales Tax, VAT, HST/GST Paid Out	\$0	\$0	\$0
Principal Repayment of Current Borrowing	\$0	\$0	\$0
Other Liabilities Principal Repayment	\$0	\$0	\$0
Long-term Liabilities Principal Repayment	\$0	\$0	\$0
Purchase Other Current Assets	\$0	\$0	\$0
Purchase Other Long-term Assets	\$0	\$0	\$0
Dividends	\$0	\$0	\$0
<b>SUBTOTAL CASH SPENT</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>NET CASH FLOW</b>	<b>(\$14,388)</b>	<b>(\$1,228)</b>	<b>\$8,922</b>
<b>CASH BALANCE</b>	<b>\$130,612</b>	<b>\$129,384</b>	<b>\$138,306</b>

## SAMPLE Balance Sheet

Steve's Civil Engineering Firm's Projected Balance Sheet

	FY 2009	FY 2010	FY 2011
<b>ASSETS</b>			
<b>CURRENT ASSETS</b>			
Cash	\$130,612	\$129,384	\$138,306
Accounts Receivable	\$75,000	\$75,000	\$75,000
Other Current Assets	\$15,500	\$15,500	\$15,500
<b>SUBTOTAL CURRENT ASSETS</b>	<b>\$221,112</b>	<b>\$219,884</b>	<b>\$228,806</b>
<b>LONG-TERM ASSETS</b>			
Long-term Assets	\$56,500	\$56,500	\$56,500
Accumulated Depreciation	(\$4,300)	(\$4,300)	(\$4,300)
<b>SUBTOTAL LONG-TERM ASSETS</b>	<b>\$52,200</b>	<b>\$52,200</b>	<b>\$52,200</b>
<b>SUBTOTAL ASSETS</b>	<b>\$273,312</b>	<b>\$272,084</b>	<b>\$281,006</b>
<b>LIABILITIES</b>			
<b>CURRENT LIABILITIES</b>			
Accounts Payable	\$10,200	\$10,200	\$10,200
Current Borrowing	\$0	\$0	\$0
Long-Term Debt	\$0	\$0	\$0
Other Current Liabilities	\$0	\$0	\$0
<b>SUBTOTAL LIABILITIES</b>	<b>\$10,200</b>	<b>\$10,200</b>	<b>\$10,200</b>
<b>EQUITY</b>			
Paid-In Capital (Stock)	\$278,647	\$256,259	\$260,081
Retained Earnings	(\$15,535)	\$5,625	\$10,725
<b>SUBTOTAL EQUITY</b>	<b>\$263,112</b>	<b>\$261,585</b>	<b>\$270,806</b>

Financial reports use a number of financial terms that may be unfamiliar to many engineers. Let's take a look at some of the more common terms.

## Financial Terms

**Beginning Cash Balance** – The available cash at the beginning of the period.

### Cash Received

**Cash from Operations** – (a.k.a. Operating Cash Flow) is basically the revenues minus operating expenses

**Cash Sales** – In general engineering companies provide a service. They produce products, like reports and drawings, but these items are included in the services they provide. Most cash sales for engineering companies are through retainers on service contracts.

**Cash from Receivables** – Most if not all payments made to engineering companies except Retainers are on Receivables, which are payment on invoices.

### Additional Cash Received

**Sales Tax, VAT, HST/GST Received** – These are taxes on sells. Sales tax is usually based a percentage of the sale for a product not a service. VAT is a Value Added Tax and is mostly utilized in the European Union, although United States Congress is considering the same tax. VAT is on a product and not services. HST and GST is the Canadian Harmonized Sales Tax and Goods and Services Tax. Again the United States Congress is considering adding these taxes to the tax code.

**New Current Borrowing** – This cash the company has received by borrowing from a lending institution and will pay back within a fiscal year.

**New Other Liabilities (interest free)** – These are other loans without interest. The typical interest free loans are from founders, family members, or friends.

**New Long Term Liabilities** – These are loans that will be paid back to the lender over a period longer than one year.

**Sales of Other Current Assets** – As the company grows older equipment, furniture, and other assets will be replaced with newer items. These assets were of small individual value and the costs were not depreciated over a period of several years. The sell of these assets fit this category.

**Sales of Long-term Assets** – These assets were high ticket amount that were depreciated over a period of several years.

**New Investments Received** – This is money received from investors, company owners. The money is invested in hopes that it will the company to grow, but the money is at risk.

**Cost of Goods Sold (COGS)** - COGS is the direct expense a company incurs in making a product or supplying a service such as raw materials and labor. Yes, its true engineering companies do produce products, such as technical reports and development plans. COGS are also referred to as the Cost of Sales. The COGS do not include indirect expenses such as administrative or selling expense. If a company keeps an inventory or product or raw materials, the cost of goods sold needs to account for changes to beginning and ending inventories. The cost of goods sold is calculated:

$$\text{Goods Available for Sale} = \text{Starting Inventory} + \text{Additions}$$

$$\text{Cost of Goods Sold} = \text{Goods Available} - \text{Ending Inventory}$$

**Current Liabilities** – This is a liability in the immediate future. This includes wages, taxes, and accounts payable.

**Equity** – On the company's balance sheet, the amount of the funds contributed by the owners (the stockholders) plus the retained earnings (or losses). The term is referred to as "shareholders' equity".

## **Expenditures**

**Expenditures from Operations** – These are expenses incurred for creating the product or service. This may include raw materials, labor cost, leasing equipment, and sub-consultants.

**Cash Spending** – This includes all expenses not done on credit which are shown as Accounts Payable.

## **Additional Cash Spent**

**Sales Tax, VAT, HST/GST Paid Out** – These are taxes on sells. Sales tax is usually based a percentage of the sale for a product not a service. VAT is a Value Added Tax and is mostly utilized in the European Union, although United States Congress is considering the same tax. VAT is on a product and not services. HST and GST is the Canadian Harmonized Sales Tax and Goods and

Services Tax. Again the United States Congress is considering adding these taxes to the tax code

**Principal Repayment of Current Borrowing** – This expense does not include the interest or fees on the loan. The loan period is less than one year.

**Other Liabilities Principal Repayment** – Any payments on the principal of any liabilities.

**Long-term Liabilities Principal Repayment** – Payments made on the principal of any long-term loans. Long-term loans are debts with terms longer than one year.

**Purchase Other Current Assets** – Any purchase of equipment, furniture, appliances, or other tangible items that will not be depreciated over a period of several years.

**Purchase Other Long-term Assets** – Any purchase of real estate, equipment, furniture, appliances, or tangible items that will be depreciated over a period of several years.

**Dividends Payment of Accounts Payable** – Payment of a part of a company's profits to its shareholders.

**Gross Profit Margin** – Gross profits margin are your profits for the period before operating expenses, fixed expenses, taxes, or interest. This is calculated as your sales minus your Cost of Goods Sold (COGS).

**Inventory** – Total inventory which includes normal inventory, safety stock, and work in progress. This is usually zero for engineering companies, since there are no real on the shelf products to be sold.

**Long-Term Assets** – This includes buildings and equipment (less depreciation), real estate, and other assets that are not readily turned into income or cash.

**Long-Term Liabilities** – This includes mortgage, deferred taxes, notes payable, and other long term liabilities.

**Net Cash Flow** – Amount of cash remaining after a transaction and deductions and expenses have been subtracted.

$$\text{Net Cashflow} = \text{Cash Inflows} - \text{Cash Outflows}$$

**Net Worth** – This value is known as shareholders' (or owners') equity and is determined by subtracting liabilities on the balance sheet from assets.

**Other Current Assets (Income)** – Any other income your company receives that was not through its operations. This includes the sale of appreciated property and securities.

**Pretax Margin (\$)** - Pretax margin is a ratio of the company's pretax profits divided by operating revenues.

**Pre-tax Return on Assets** - Indicates profit as a percentage of Total Assets before taxes. It is calculated by dividing a company's annual Pretax Earnings by its Total Assets. Measures a company's ability to manage and allocate resources. An indicator of how profitable a company is relative to its total assets.

**Pre-tax Return on Net Worth** - Indicates shareholders' earnings before taxes for each dollar invested. This ratio is not applicable if the subject company's Net Worth for the period being analyzed has a negative value. It is calculated by dividing a company's annual Pretax Earnings by its Total Assets. An indicator of how profitable a company is relative to its total assets.

**Sales Growth (%)** – This value indicates how fast the company is growing, and is normally indicated as a percentage growth from the prior years sales.

**Total Current Assets** – This is any cash or assets that can be quickly turned into cash. This includes prepaid expenses, accounts receivable, most securities and your inventory.

**Total Liabilities** – All liabilities including the Current Liabilities, Long-Term Debt, and any other miscellaneous liabilities the company may have.

**Working Capital (Net Working Capital)** - This ratio is calculated by subtracting Current Liabilities from Current Assets. This is another measure of cash position. Positive means the company is able to pay off short-term liabilities. Negative means the company is unable to meet its short-term liabilities.

## ***Financial Indicators***

Financial ratios are used as indicators that allow you to determine the health of your business. If used correctly you can zero in on areas of the business that may need attention. These areas may include solvency, liquidity, operational efficiency, and profitability.

### *Profitability Metrics*

Most of the Profit Ratios are based on the Income Statement. They are separated into three categories; Margin Ratios, Return Ratios, and Shareholder Earnings Ratios.

### Margin Ratios

Net Profit Margin (%) – This ratio is calculated dividing Sells into Net Profit. For large engineering companies this figure maybe 10 to 12%. The profit margin indicates how much profit a company makes for every \$1 it generates in revenue. Smaller engineering companies with very little over-head cost this figure maybe 30 to 40% or even higher.

$$\frac{\text{Net Income}}{\text{Net Sales}}$$

Gross Profit Margin (%) – This figure let's us know the percentage of a company's operating revenue to sales. Operating revenue is the company's sales revenue minus the cost of good sold.

$$\frac{\text{Gross Profit}}{\text{Net Sales}}$$

Operating (Net) Profit Margin (%) – This figure let's us know what percentage of sale amounts are left after removing the Cost of Goods Sold and the Operating Costs. The net profit margin is the ratio of net profits to sales. This is the best indicator of the company's efficiency in that net profit takes into consideration all expenses of the company. You want the net profit margin to be as high as possible.

$$\frac{\text{Operating Profit}}{\text{Net Sales}}$$

Relative R&D (Research and Development) – This figure let's us know what percentage of sales the company is spending on creating new products and services for the market.

$$\frac{\text{R \& D Expense}}{\text{Net Sales}}$$

### Return Ratios

Return on Assets – This figure let's us know well our Investment in Assets is performing in producing income for the company.

$$\frac{\text{Net Income}}{\text{Total Assets}}$$

Asset Turnover (Sales to Fixed Assets) – This ratio let's us know the capital-intensity of a business and how efficient the company is in producing sells with its resources. Companies that require a large infrastructure in order to produce or deliver their product, such as utility companies, require a large asset base to generate sales.

$$\frac{\text{Sales}}{\text{Fixed Assets}}$$

Return on Investment – This is the ratio that most investors will ask about. The figure yields a percentage which indicates how well the company performs at generating profit from investments.

$$\frac{\text{Net Income}}{\text{Long – Term Debt} + \text{Equity}}$$

Return on Equity – This figure shows the profits generated from the company's holdings which include stocks and retained earnings. This ratio is calculated by dividing Net Profit by Net Worth, expressed as a percentage.

$$\frac{\text{Net Profit}}{\text{Equity}}$$

### Shareholder Ratios

Earnings per Share – This figure simply show profitability per share of stock.

$$\frac{\text{Earnings Available to Common Stockholders}}{\text{Average Number of Common Shares Outstanding}}$$

Price/Earnings Ratio – The figure results in the multiplier that you may have heard a financial news program. You may hear a multiplier of 35, which means the purchaser of the stock paid 35 times the earnings per share of stock.

$$\frac{\text{Market Price per Share of Common Stock}}{\text{Earnings per Share}}$$

### *Liquidity Metrics and Working Capital*

First what is Working Capital? It simply is the difference between the company's Assets and Liabilities.

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

Since the company's Assets are Cash, Accounts Receivables and Inventory and the Liabilities are the Accounts Payable, the equation can be rewritten as:

$$\text{Working Capital} = \text{Cash} + \text{Accounts Receivable} + \text{Inventory} - \text{Accounts Payable}$$

Working Capital to Sales – This figure shows how the Working Capital is generating Sales. The number should as low as possible.

$$\frac{\textit{Working Capital}}{\textit{Total Sales}}$$

Working Capital Turnover – This figure is a show of efficiency; how well Working Capital is used. Since this is the same as Working Capital to Sales only flipped the higher the number the better.

$$\frac{\textit{Total Sales}}{\textit{Working Capital}}$$

Sales/Net Worth - This ratio is calculated by dividing Total Sales by Net Worth.

$$\frac{\textit{Total Sales}}{\textit{Net Worth}}$$

Current Ratio – This ratio is a measure of the company's ability to meet financial obligations and is expressed as the number of times current assets exceed current liabilities. It is determined by dividing the current assets by current liabilities based on the most recent quarter. The current ratio is used to provide guidance on a company's immediate financial health and its ability to meet current obligations. A high ratio indicates that a company can pay its creditors. A number less than one indicate potential cash flow problems.

$$\frac{\textit{Current Assets}}{\textit{Current Liabilities}}$$

Quick Ratio (Acid Test) – The equation is similar to the Current Ratio except it removes the Inventory from the Current Assets. Since the inventory generally moves much slower than Cash and Accounts Payable, the equation gets its name as quick. This ratio measures a company's ability to meet its current obligations using its most liquid assets. It is determined as the sum of cash and receivables divided by the total current liabilities. The quick ratio is another measure of a company's immediate financial condition.

$$\frac{\textit{Current Assets} - \textit{Inventory}}{\textit{Current Liabilities}}$$

Note sometimes the ratio also removes Accounts Receivables from the Current Assets. In this case the equation looks like this:

## ENGINEERING FINANCIAL STRATEGIES

$$\frac{\text{Cash} + \text{Accounts Receivables} + \text{Short Term Investments}}{\text{Current Liabilities}}$$

Note: Most engineering companies do not have much in their inventory. They do not have a stack of designs ready to go for the next client. So usually the inventory cost is extremely low.

Inventory to Working Capital – This figure let's us know how much of the Working Capital is tied up in Inventory. A negative value for Working Capital does not give an answer. This is why it is probably better to compare this number with the value for Inventory to Current Assets.

$$\frac{\text{Inventory}}{\text{Working Capital}}$$

Days' Supply of Inventory – The figure measures how many days inventory is stored. Again for engineering companies' Inventory should be very low, and the number of days stored should be few.

$$\frac{\text{Inventory}}{\text{Cost of Goods Sold} / 365}$$

Inventory Turnover – This number gives the number of times the inventory moves in a period of time; monthly or yearly. This ratio is calculated by dividing the Cost of Sales by the average Inventory balance. The resulting Inventory Turnover ratio indicates how fast the company's products are moving on the marketplace. For the inventory ratio, a higher number is better.

$$\frac{\text{Cost of Goods Sold}}{\text{Inventory}}$$

Accounts Receivable to Working Capital - This figure let's us know what portion of the Working Capital is tied up in Accounts Receivable. The problem is that Working Capital can be negative. So this value is not very reliable.

$$\frac{\text{Accounts Receivable}}{\text{Working Capital}}$$

Days' Supply of Inventory – The figure lets us know how long to collect payments from our clients.

$$\frac{\text{Accounts Receivables}}{\text{Net Sales} / 365}$$

## ENGINEERING FINANCIAL STRATEGIES

Accounts Receivables Turnover – This number determines how many times payments occur over a given accounting period. So if the number of turns is 4 in a year, the company is receiving payments every three months (90 days); not very good.

$$\frac{\text{Net Credit Sales}}{\text{Accounts Receivables}}$$

Bad Debt Percentage – This figure shows the expected number of accounts that will not be paid at the end of the period. For an engineering company this number should be low. If a client is not expected to pay then either drop the client or make sure they pay before they receive the deliverables. For some engineering firms this is a big problem.

$$\frac{\text{Allowance for Doubtful Accounts}}{\text{Gross Accounts Receivables}}$$

Accounts Payable to Working Capital - This figure lets us know what portion of the Working Capital is composed of Accounts Payable. The problem is that Working Capital can be negative. So this value is not very reliable.

$$\frac{\text{Accounts Payable}}{\text{Working Capital}}$$

Days' Payables Outstanding – This figure shows how long it takes us to pay our vendors; the longer the better. A number between 30 to 60 days is about right. Much longer and vendors may not want to extend credit to your firm.

$$\frac{\text{Accounts Payable}}{\text{Average Purchases per Day} / 365} = \frac{\text{Sales}}{365}$$

Payment Days - This ratio is calculated by multiplying average Accounts Payable by 365, which is then divided by new Accounts Payable.

$$\frac{\text{Average Accounts Payable}}{\text{New Accounts Payable}} \times 365 \text{ days}$$

Accounts Payable Turnover - This ratio is a measure of how quickly the business pays its bills. It divides the total new Accounts Payable for the year by the average Accounts Payable balance.

$$\frac{\text{Total New Accounts Payable}}{\text{Average Accounts Payable}}$$

## ENGINEERING FINANCIAL STRATEGIES

Accounts Receivable Turnover - This ratio is calculated by dividing Sales on Credit by Accounts Receivable. This is a measure of how well your business collects its debts.

$$\frac{\text{Net Credit Sales}}{\text{Accounts Receivables}}$$

Collection Days - This ratio is calculated by multiplying Accounts Receivable by 360, which is then divided by annual Sales on Credit. Generally, 30 days is exceptionally good, 60 days is bothersome, and 90 days or more is a real problem.

$$\frac{\text{Accounts Receivables} \times 360}{\text{Net Credit Sales}}$$

Accounts Receivables to Accounts Payable – This number shows that the company has the necessary future revenues to pay the company's future expenses. If you are maximizing your Working Capital the Accounts Payable will be much larger than the Accounts Receivables.

$$\frac{\text{Account Receivable}}{\text{Accounts Payable} + \text{Accrued Expenses}}$$

### Cash Ratios

The Cash Ratios are based on the Cash Flow Statement. The ratios are separated into three categories; operating cash flow, investing cash flow and financing cash flows.

Operating Cash Index – The index compares the profits to income. This index is a very good indicator for an engineering company. If this number is substantially different from 1 it means that the company is have time collecting on its invoices.

$$\frac{\text{Cash from Operations}}{\text{Net Income}}$$

Cash Ratio – This number shows that the company has the ability to its debts.

$$\frac{\text{Cash Equivalents} + \text{Martable Securities}}{\text{Current Liabilities}}$$

Cash to Working Capital – The intent of this number is to show the amount of Working Capital that is cash, but if the Working Capital is very small or negative the ratio is irrelevant. A better indicator is Cash to Current Assets.

$$\frac{\text{Cash}}{\text{Working Capital}}$$

Cash Turnover Ratio – This number shows the company how many times cash was realized in sales. The bigger the number becomes the better. Everyone wants their money working hard for them.

$$\frac{\text{Sales}}{\text{Cash} + \text{Marketable Securities}}$$

Cash Flow Ratio – This number shows whether the company is making enough cash from its sells to cover its expenses. Obviously a number greater than 1 is preferred.

$$\frac{\text{Cash Flow from Operations}}{\text{Current Liabilities}}$$

Cash to Cash Dividends – This number shows whether the company has enough Cash to cover the dividends obligations.

$$\frac{\text{Operating Cash Flow} - \text{Preferred Dividends}}{\text{Common Stock Cash Dividends}}$$

Cash Flow Adequacy Ratio – This ratio is used to answer a lot of questions about how much debt the company can take on with the Cash it is receiving form its Operations. Using the Ratio the may discern that it does not have the necessary Cash to increase its Inventory or other new debts.

$$\frac{\text{Cash from Operations}}{\text{Capital Investments} + \text{Inventory Additions} + \text{Dividends} + \text{Debt Uses}}$$

Mandatory Cash Flow Index – This number shows the company that either it has the ability to take care of its mandatory debt or not. Notice that Dividends are removed from the Cash Flow, because Dividends are not mandatory.

$$\frac{\text{Cash Used in Operations} + (\text{Cash Used for Financing Activities} - \text{Dividends})}{\text{Total Sources of Cash}}$$

Defensive Interval – This number shows the company how many days the company can continue to operate on its Current Assets. The Inventory value is removed you may not be able to sell the in a couple of days. Engineering companies usually do not have any much in inventory (Inventory = 0)

## ENGINEERING FINANCIAL STRATEGIES

$$\frac{\text{Current Assets} - \text{Inventory}}{\text{Daily Cash Operating Expenses}}$$

Dividend Payout of Cash from Operations – This number shows whether the company can pay its Dividends from its generated Cash. You want the number to be far less than 100%

$$\frac{\text{Dividends}}{\text{Cash from Operations}}$$

Depreciation Impact Ratio – This number shows what percentage of the company's Cash from operation is actually depreciation.

$$\frac{\text{Depreciation}}{\text{Cash from Operations}}$$

Depreciation to Total Fixed Assets – This number indicates the age of fixed assets.

$$\frac{\text{Accumulated Depreciation}}{\text{Total Fixed Assets}}$$

### *Financing Ratios*

Debt to Equity – This ratio is a comparison of the right side of the Balance Sheet. Where is the company's money coming from: debt, stock, or retained earnings? If the number is larger than 1, the company maybe overburden with debt.

$$\frac{\text{Total Debit}}{\text{Total Equity}}$$

Debt Ratio – This number is another way to determine if the company is overburden with debt. This is indicated if the value is greater than 1. So you will want the Net Assets to be much larger than Total Liabilities.

$$\frac{\text{Total Liabilities}}{\text{Net Assets}}$$

Cash to Long-Term Debt – This number also determines the company's ability to pay its debts. But has some really larger debts that are to be paid off over a period of many years, the value may be much lower than 1.

$$\frac{\text{Cash and Cash Equivalents}}{\text{Long - Term Debt}}$$

Long-Term Debt Payment Ratio – The information for this formula is from the Cash Flow Statement. The number shows for the current year how much money the company received by issuing debt versus how much the company paid in obligation on the debt.

$$\frac{\text{Cash Applied to Long - Term Debt}}{\text{Cash Supplied by Long - Term Debt}}$$

Percent of Cash Sources Required for Long-Term Debt – This number shows what portion of the generated Cash is dedicated to paying the company's debt.

$$\frac{\text{Cash Applied to Long - Term Debt}}{\text{Total Sources of Cash}}$$

Short-Term Debt to All Debt Ratio – This number shows what portion of the company's Total Debt is Short-Term Debt.

$$\frac{\text{Short - Term Debt}}{\text{Short - Term Debt} + \text{Long - Term Debt}}$$

Long-Term Debt to All Debt Ratio – This number shows what portion of the company's Total Debt is Long-Term Debt.

$$\frac{\text{Long - Term Debt}}{\text{Short - Term Debt} + \text{Long - Term Debt}}$$

Cash to Current Maturities of Long-Term Debt – This number shows how much the company is obligated to pay on its Long-Term Debt right now versus how Cash it has available. The ratio determines if the company is capable of paying its Long-Term Debt.

$$\frac{\text{Cash} + \text{Cash Equivalents}}{\text{Current Maturities of Long - Term Debt}}$$

Fixed Charge Coverage – This number shows that the company has the ability to pay for its fixed charges. The Earnings should be much larger than the fixed charges. Your engineering company may need to modify the Earnings to better reflect your business.

## ENGINEERING FINANCIAL STRATEGIES

$$\frac{\text{Earnings Before Interest, Taxes, and Lease Payments}}{\text{Interest Expense and Lease Payments}}$$

Receivables to Long-Term Debt – This number also show that the company has the ability to pay its long term debts. Once the Accounts Receivables have been collected, the company can pay the debt.

$$\frac{\text{Accounts Re ceivables}}{\text{Long – Term Debt}}$$

### Equities Ratio

Dividend Payout – This number compares how much the company has earned versus how much has been out to Dividends.

$$\frac{\text{Dividends per Common Share}}{\text{Earnings per Share}}$$

Percentage of Earnings Retained – This number also compares how much the company pays out to dividends versus the company's income.

$$\frac{\text{Net Income – All Dividends}}{\text{Net Income}}$$

External Financing Index – This number shows what percentage of the company generated Cash is from Operations versus Cash from financing and investing. The value shows whether the company is generating sufficient cash to operate on its own or if it needs external funding.

$$\frac{\text{Cash from Operations}}{\text{Total External Financing Sources}}$$

### Capital Investment Ratios

Reinvestment Ratio – This number shows whether the company is keeping its Capital Investments new. If you are hanging on to old equipment and not investing in new technology, this number will be low. If you are replacing old equipment with new technology, the number will be higher.

$$\frac{\text{Capital Investments}}{\text{Depreciation + Sale of Assets}}$$

## ENGINEERING FINANCIAL STRATEGIES

Capital Investment per Dollar of Cash – This number indicates how much the company Cash is going towards Capital Assets. The company may want to pile-up Cash or it may want to increase its assets.

$$\frac{\textit{Capital Investments}}{\textit{Total Sources of Cash}}$$

Current Liability to Liability - This ratio is calculated by dividing Current Liabilities by Total Liabilities.

$$\frac{\textit{CurrentLiabilities}}{\textit{Total Liabilities}}$$

## About the Author

Joe Alvin Haun, PE, MSE

Joe Haun is a highly experienced Civil Engineer, author, public speaker, and business advisor who have worked in the engineering profession since 1983.

Mr. Haun's early career was in the United States Air Force as an Engineer Assistant. A Desert Storm veteran he has a unique perspective of the Middle East.

Mr. Haun graduated from the University of Las Vegas, Nevada in 1994 with a BS degree in Civil Engineering and in 1995 with a MSE in Civil and Environmental Engineering.

Mr. Haun worked with several engineering firms in the Las Vegas valley until February 2005 when open his own engineering company HAUNTEC, which has grown to a designing multi-million dollar projects in Nevada and Utah and in the countries of Iraq and Costa Rica. Review his growing company's website at [www.haunteceng.com](http://www.haunteceng.com) to see the firm's latest capabilities.

Mr. Haun has published articles in engineering magazines and has given speeches on water resources, and is currently working on several articles on permeable pavements.

In 2009, Mr. Haun started Engineering Business Seminars and Publications to. His first publication is the "Engineering Business Success." He has created many self-study engineering business seminars for Professional Development Hours credits. Visit the web-site [www.engineeringbusinesspubs.com](http://www.engineeringbusinesspubs.com) to review the latest seminars and publications.

## Recommended Reading List

Engineers are constantly learning about new techniques, products and design methods. Improving your skills as a business leader is no different. Reading books is one of the best ways to improve your skills. Below is a list of books we recommend.

- *Engineering Business Success* by Joe A Haun (book)
  - *Engineering Business Plan* by Joe A Haun (seminar)
  - *Engineering Marketing Strategies* by Joe A Haun (seminar)
  - *Engineering Operations Strategies* by Joe A Haun (seminar)
  - *Engineering Financial Strategies* by Joe A Haun (seminar)
  - *Engineering Proposal Strategies* by Joe A Haun (seminar)
  - *Engineering Joint Venture Strategies* by Joe A Haun (seminar)
  - *7 Habits of Highly Effective People* by Steven Covey
  - *First Things First* by Steven Covey
  - *Awaken the Giant Within* by Anthony Robbins
  - *Unlimited Power* by Anthony Robbins
  - *The E-Myth Revisited* by Michael E. Gerber
  - *Get Clients Now* by C. J. Hayden
  - *Dress for Success* by John T. Molloy
- 
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  - ❖ Our on-line seminars include the manual, down-loadable from the web-site [www.engineeringbusinesspubs.com](http://www.engineeringbusinesspubs.com) , and sample letters and forms. After completing the seminars the participant will receive a PDH certificate showing the number of units awarded.

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