

CHAPTER 51

SETTING UP AND BUILDING YOUR CONSULTING BUSINESS

Starting any new business takes a considerable amount of planning and resources and starting your own consulting business is no different. If you want to be successful there are many things to consider. How to get started? Do you work part-time or full-time? Do you work alone or team with others? Where do you find the jobs and how do you bid on the work? And last but not least, how do you get paid? This chapter provides the guidance you will need to answer these questions and successfully launch your consulting business.

HOW TO GET STARTED

The first decision you will face in the consulting business is whether to do consulting part-time or full-time when you start. The answer to this question will depend upon each individual, their skills, experience level, and ultimate goals.

Starting Part-Time. One option is to start a consulting business by working it part-time at night or on weekends or for a few days during the week [1]. Some people simply cannot afford to quit their present position due to financial reasons. These people build up their consulting business slowly over time until they can successfully leave their job to do consulting full-time. Starting a consulting business part-time allows one to try consulting to make sure this is what they really want to do on a permanent basis while minimizing the financial risks. If the person ultimately decides that consulting is not for them it provides a safety net since they have their existing job to fall back on.

Starting Full-Time. Starting your consulting business on a full-time basis is the other option. You leave your present job and start consulting full-time. This is the sink or swim option where you must quickly develop your

business for income. One benefit to this approach is the fact that you will be highly motivated to seek out new clients since you will have no other job or income to fall back on. Another benefit of quitting your job and starting full-time is that it allows you to focus all your energies on the business and not be distracted by an existing job or other activities. Working full-time also speaks loudly to potential clients about how serious you are about the business. Some engineers start their consulting venture this way because they have been laid off and cannot find work; this may be the only option available to them.

If you select to go the route of quitting your job and consulting full-time, if possible make sure you have at least one or two clients lined up and under contract before you turn in your resignation notice to your present employer. Starting your consulting business with several paying clients launches your business on a solid foundation.

Teaming with Other Consultants. Another great way to start your consulting career is finding and teaming with other consultants who are already established and successful. These consultants have established clients and know the tricks of the trade as they say. You do not need to team with someone who you are in direct competition with, but a consultant who has complementary talents. For instance, if you are electrical and have a hardware focus you might consider teaming with a software engineer. Or if you are electrical with a focus in motors, you might team with a mechanical engineer. Successful consultants are always looking for other consultants who have complementary skills to team with to enhance the overall chances for winning contracts. They also realize if a client is already hiring consultants for one reason there is probably a good chance they will hire other consultants for other complementary tasks.

Join a Consulting Firm. Before going out on your own, you might consider joining an established and successful consulting firm. You will have the opportunity to observe and learn how to market yourself, do client prospecting, bid jobs, and complete work. Oftentimes when working for a consulting firm, your assignments are short in duration and you rapidly move from job to job. This process of moving from job to job exposes you to new and improved methods, as well as seeing what does not work. Having learned what worked at one company and successfully being able to apply this to other companies is exactly what makes consultants so valuable and sought after.

Teaming with other consultants or joining a consulting firm has many benefits for someone trying to break into the business. By doing either of these you do not have to start from scratch and invent the wheel all over again. You are exposed to the in-house proven methods of successful consulting that you can adopt and utilize when you are ready to operate independently.

Regardless of the method you select for starting your business, the best action you can take in all cases is to join a consulting network. Conduct an

online search for “engineering consultants network” to determine potential networks that you can join in your area.

Join a Consulting Network. Most likely all your formal training has been in engineering and you probably have had little formal training in business development and consulting. This lack of training can hurt your chances for successfully starting up your consulting business. Therefore, returning for more business training is also a critical part of successfully starting up your consulting business. Unfortunately, most people do not have the time to return to school and earn a four-year business degree while consulting at the same time.

So how do you acquire these business skills? There is no better way than to join a consultant network. Consultant networks are set up to help engineers with the business side of consulting [2]. These networks offer focused classes on nearly every aspect of the consulting business from how to find clients, bid contacts, do the work, and the most important getting paid.

The engineering consultant networks often meet after business hours and are well attended by other engineering consultants. In addition, many companies will contact engineering consultant networks to find consultants. There is no better place to network than at a consultant’s network meeting where you can obtain business training, tips, and leads for potential jobs all in one place. Attending engineering consultant network meetings regularly for about the first 6 months after you start your consulting business is a smart move. Check with your local engineering society to determine when and where the consultant’s network meets. IEEE Consultants Network is one example of a highly developed and successful networking society spread throughout the United States [3].

This gets us to the next action recommended to successfully launch your consulting business, which is developing a business plan.

DEVELOPING A BUSINESS PLAN

Writing a business plan requires you to think through all the aspects of your consulting business and formulate a plan for success. The business plan identifies the focused, concise, and predetermined actions you intend to follow when starting and conducting your business. It will help you shape the type of engineering consulting you will be offering and what your practice does and does not do.

There are many excellent and free sources that can help engineering consultants develop a business plan [4–6]. Here is one example of a business plan outline. It starts with the executive summary where in one spot the key points of your entire plan are summarized. This is a statement of your consulting business objectives, mission, and keys to success.

Generalized Outline for Business Plan

- Executive summary
- Objectives, mission, keys to success
- Company summary
- Ownership
- Start-up plan
- Location
- Description of services
- Technical areas of consulting
- Unique capabilities
- Tools and support material
- Market analysis/Marketing and sales plan
- Companies and industry needs
- Size of market
- Revenue—potential for income
- Competition
- Marketing budget
- Networking and teaming plans
- Management summary
- Office and legal considerations
- Financial—expenses and cash flow
- Bidding contracts
- Risk summary and prioritize actions

The next section is the company summary where you identify the ownership, start-up plan, and locations you will be operating the business out of. Next is the description of services you will be providing. This is a summary of your technical area of consulting, what unique capabilities you offer, and the tools or support material needed.

Following this is the marketing analysis section where you identify the industry and companies you will be providing consulting. Part of this analysis is determining the size of the market in terms of consulting jobs available and the potential income for you. The other part of this section is analysis of your competition. Who are your competitors, what do they have to offer, and why are you better or different?

The next section will define your marketing and sales plan. Writing this section requires you to think through how you are going to market yourself to potential clients. Are you going to advertise, put up a website, or cold call? Where is your money and time best spent to find jobs and develop a client base?

The next section is how you are going to manage your business' day-to-day activities. Where is your office going to be located, how are you going to

handle bidding proposals, working, and what other services might you need—like tax and accounting services? What operating cash and capital are you going to need? What are the expenses and revenue? What is the projected cash flow of your business? And how do you intend to bid contracts, fixed price, time and material or some other method?

All good business plans include a risk management section. In this section, you identify the major risks associated with your consulting business and the actions you plan on taking to controlling and minimizing these risks. It is usually unmanaged or unforeseen risks and problems that ultimately result in you being unsuccessful. Identifying these risks upfront, and having a plan for dealing with them, is vital to being successful. What are some typical risks? Here is a list of some typical risks you should consider when starting your consulting business.

1. Lack of income early in the business.
2. Underestimating your costs or amount of time needed to complete jobs
3. Chasing unqualified leads
4. Identifying opportunities and turning them into actual paying jobs
5. The length of time it takes to actually get under contract (1 to 3 months)
6. The large amount of marketing and networking required
7. Working on a job while looking for your next job

Writing a good business plan is so important because it becomes the roadmap for operating your consulting business. In putting together this plan it will force you to think through your actions and hopefully identify what the optimum actions you can take which lead you to success. You should complete your business plan prior to launching your business.

Once you have a good business plan your activities should focus on finding and bidding jobs. During the normal course of business you will find some of your business plans will not work and therefore adjustments will be needed. For this reason, it is good to update your business plan on a yearly basis.

Defining Your Consulting Business

Defining your consulting business and exactly what services you are going to provide to what markets, as well as what you are not going to provide, is key to a successful business. The first consideration is how specialized the consulting service you are providing. As shown in Figure 51-1, when you have a generalized expertise you are offering it is highly likely that there will be many more clients looking for this, but also more competition from other consultants and lower pay. A good example is consulting in an Information Services (IS) market where you work networking the computers of a company or maintain servers. Or another example might be as a C++ software engineer developing code for companies. In either case, you have a generalized skill

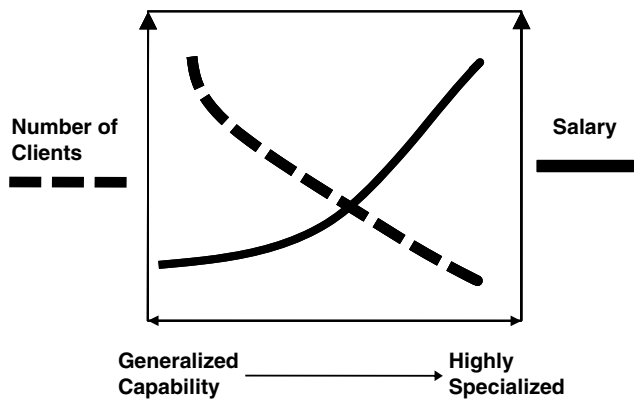


FIGURE 51-1 Generalized versus specialized consulting consideration for your business.

that many companies could utilize. For these types of consulting services usually experience is more important than possessing an advanced research degree.

Contrast this generalized consulting focus with an example of being a highly specialized consultant. For example, let’s assume you have a highly specialized expertise in fuel efficiency of commercial aircraft jet engines. In this case there may be only two or three companies interested in hiring you and if you work for one company in the market you will most likely not be working and consulting with others in this industry. However, since you are so specialized, it is highly likely that your pay is going to be significantly more. Most companies which are hiring specialized consulting services want to know they are getting the best out there, so they are going to be looking at credentials and expecting advanced degrees.

When times are good, being a specialized consultant in one industry has big rewards. However, if economic conditions turn bad for the industry you are consulting in, this can be devastating for your business.

Which brings us to the next area of clearly identifying what skills and talents are you going to offer as part of your consulting business. You should generate a list of your top 3 or 4 skills that you want to offer as part of your business. Next do some market research as to what industries these skills are needed in and if jobs exist. If you map these skills as shown in Table 51-1, you can quickly identify which skills and markets you should focus your business on.

For this very simple example you can see that industry 2 has multiple skills you can market and skill number 2 is a good skill to market in all industries. Correspondingly, skill 1 shows no mapping into any of the markets you have identified and, therefore, indicating this may not be a good skill to build your business on.

TABLE 51-1 Skills to Industry Map

Skills	Industry 1	Industry 2	Industry 3	
1				
2	X	X	X	Same skill multiple markets
3		X		
4		X		
		Multiple skills in same market		

CHECKING OUT THE COMPETITION AND LEARNING FROM OTHERS

You are not going to have the time to learn everything from scratch and more than likely there are going to be other engineers offering consulting services similar to you. There is a folklore that says “keep your friends close and your enemies even closer.” Well, your competition is not really an enemy but you should know what you are up against and the best way to do this is research their capabilities. How do you best check out what the competition is offering? Pretend you are interested in acquiring consulting services based on what you are offering and start a search to find consulting engineers who offer services in this area. The best place to start is with an on-line search. You should be searching using the keywords that you plan on using for your consulting service. Check out the competitor’s web sites. What services do they offer, how do they bid their time, who is or were their clients and, what industries are they working in? How is their web site set up, hosted, and organized? Do they reference papers or books written? What society memberships and credentials do they hold? More than likely your clients will be searching in the same fashion, seeing what you are seeing. So knowing in advance what they are going to find can help you set up your web site. Is the competition also going to be checking you out? Absolutely!

Spending several days online searching web sites, job postings, engineering journal ads, newspaper ads, and engineering consultant networks can provide a wealth of information to help you come up to speed quicker and significantly enhance your chances for success.

SUCCESSFUL MARKETING PLANS

What is your plan for marketing your consulting business? A good marketing plan involves significantly more than just developing a web site and often developing a company web site is only a small portion of the plan. Jay Conrad Levinson in his book, *Guerrilla Marketing: Secrets for Making Big Profits from Your Small Business*, is a must-read for a consulting engineering [7].

In his book Jay identifies some great ways to market your business on limited budgets and gives many practical tips on how to get more for your marketing dollars. Here are some of Jay's recommended methods plus others.

1. Networking and marketing on an eye-to-eye basis
2. Seminars and demonstrations
3. Trade shows
4. Cold calling (phone lists)
5. Company web site
6. Classified advertising (trade journals, society publications)
7. Emailing
8. Direct mailings
9. Brochures

All the experts agree that the most successful method of marketing is by networking and talking face-to-face with potential clients about your business. For this reason the best thing you can be doing is networking with people and marketing your business whether it is face-to-face or over the phone.

Where are the best places to network? Engineering society meetings, trade shows, and conferences where other engineers are attending. Nothing is more impressive than presenting a paper on a difficult problem you solved to a group of fellow engineers, all who are looking for solutions for their problems.

If you belong to engineering societies you may have access to phone and email lists. There are also companies that sell contact lists; however these lists are often expensive and not filtered for your type of clientele and only yield a few leads for thousands of names. Use caution when purchasing contact lists and check how up-to-date the contact information is and how the list can be filtered to your business needs.

Having a company web site is another good marketing tool. The web site should present your qualifications or biography, the focus of your business and any supporting material like customer endorsements, papers you have written or books, you have published. In addition, make sure your contact information is easy to find and, if appropriate, any links to other web sites. Having your company brochure on the web site to view and also download is another good marketing tool. Having your web site hosted where your domain name ends in your company name.com projects a more professional image. There are many web sites that allow you to do this for very minimal costs and have support tools that allow you to easily construct your web site. To find these sites simply search online.

Placing an ad in engineering trade journals and/or society publications is another good way to market your company. These publications go directly

to your target audience and are often read by people looking for consulting help.

Sending emails is the least expensive method of marketing if you already have an email contact list. Emails provide you with a means to send a colored company brochure for little cost directly to a potential client. Regular mail is another method of marketing but involves quite a bit more since you will need a contact list, printed hard copies of your marketing brochure, and paying postage. This method should be reserved for potential clients you have qualified as good candidates.

Your company brochure is the heart of your marketing plan. The brochure should summarize all the important aspects of your offering, contact information, and project a professional and polished image. This marketing piece will be used on your web site, sent via email, and left with clients after interviewing, as a reminder of your business. Developing an outstanding brochure is where you want to focus your early efforts when starting up your company.

In addition, you will need marketing tools like business cards and a 30-second commercial about your business. Your business card should have your contact information on the front and a summary of your company's offerings on the backside. Your 30-second commercial is how you tell people what you do and the outstanding points about your business. You use your 30-second commercial when networking and greeting potential clients.

Have you also considered a company name and logo? Your company name should be easy to remember and indicate the type of business you are in. Company names are registered with federal and state governments; make sure you check with these agencies so that you have not selected a name that is already in use by another company.

SETTING UP AN OFFICE

The least expensive way of setting up your office is by using your home. If you have a room where you can shut the door and work without being interrupted, it is ideal. To support your business you should have a good computer/lap top with Internet and email access, a printer with scanner capability, a separate business phone line, and faxing capability. Make sure you have a professional sounding voice mail so that clients can leave a message when you are out of the office. If possible a separate business cell phone is good to have, so clients can reach you no matter where you are. You should have a complete set of software to support both the business and technical aspects of your business. If you have to meet with clients you can use hotel lobbies, libraries, or quiet restaurants.

Once you are established and have sufficient income flowing in, you can move your home office to a professional building where you rent a small office and have support staff answering phone calls, handling your mail, and conference rooms for meetings and presentations.

Regardless of your office location you should set up regular business hours and work during those hours. Avoid using office hours for doing chores or running errands.

Meet with a banker and set up a separate banking account under your company name for depositing checks and paying bills. A separate bank account is one of the items the Internal Revenue Service (IRS) looks for when auditing your taxes. It is good to establish a relationship with a banker in the event that you need to get a loan for your company. Having a pre-established bank account and line of credit will make getting the loan much easier.

You will have to register your company with federal and state agencies and obtain a tax identification number. This can be your Social Security number to start with. Many corporations require you to have a federal tax identification number to consult for them. You will also have to declare the type of business you are running: sole proprietor, partnership, limited liability corporation (LLC), or corporation. The tax laws and legal liabilities for all these are different and this is where a good attorney or tax accountant can advise you.

Once your business is up and running it is recommended you meet with an accountant to help set up the business books and a tax specialist to help you with tax payments. As an independent consultant you must pay taxes on the income you earn. A tax specialist can also advise on what expenses of your business are tax deductible and what receipts you will need to keep.

Another place to check is the Small Business Administration for federal and state governments to see if you qualify for any programs that could support your business. These agencies are especially looking to help small businesses that are women- or minority-owned.

Finally, you should check with your local municipalities or city hall to see if there are restrictions on running a business out of your home. Some municipalities request you fill out a questionnaire regarding your business. They are worried about the environmental hazard aspects of your business and the impact of operating a business out of your home on the surrounding neighbors; especially if you are going to have a large number of clients calling on you regularly.

WHERE TO FIND JOBS

The next challenge you will face in launching your own consulting business is where to find the jobs. The answer to this question will depend on the skills you offer. However, generic to all consulting businesses, there are places you should be searching on a regular basis to find leads. Here are some of these places.

Job Ads. One good source for a consulting job is the job ads. Companies will post job ads on their web site or advertise in newspapers. When job openings are hard to fill and run for multiple weeks or even months most

companies will consider hiring a consultant to fill the position. If you have the skills to fill the position, then you are in excellent shape to approach the company about consulting. When you find job ads like these, you should contact the hiring manager directly if possible, and discuss filling the opening as a consultant. Acting in your favor is the fact that you can start immediately and do not have to quit another job. This allows the company to instantly fill a position that has been open for a long period of time.

One of your regularly planned weekly tasks will be to search company web sites for postings and newspapers for positions that fit your background.

Consulting Company. Consulting companies are always looking for engineers they can hire for existing and future jobs. These consulting companies run job ads and also like to collect resumes of many consultants so that they can list these people as part of their firm's talent bank. Therefore, searching the job ads and web sites of consulting companies is another good place to look for jobs. If during your searching you find something related to your business, set up a meeting with the consulting firm and interview.

Many consulting firms have standing agreements and contracts with corporations to supply help. Therefore, these consulting firms are usually the first place corporations go to when considering hiring help.

Corporation Contractor Department. Many corporations have a policy to hire a certain percentage of contract personnel because of the up and down fluctuations in the workload. Corporations like the ability of bringing on temporary contract personnel to help with the workload. When work is completed they simply let them go. This is much simpler than hiring permanent employees and then having to deal with lay-off issues when the work ends. To facilitate this activity many corporations create a special group in their procurement department that does nothing but hire part-time contractors. The procurement group is responsible for putting out notices and bid requests for contract personnel. Meeting with this procurements group and being listed as a qualified contractor for a corporation gets your name on the list of people to contact when work becomes available. By using your marketing skills to penetrate a corporation and making contact with the contractor procurement group. This group is another excellent place to look for jobs.

Government Small Business Agencies. Federal and state government agencies have a preferred small business bidders list they maintain and automatically send bid notices when procuring contractors and consultants. You can have your company added to the list by contacting these agencies. In addition, these lists of small businesses are also sent to major corporations who bid contracts where oftentimes a percentage of the bid has to be awarded to small businesses.

Business Section of Newspaper and Trade Journals. Another good place to search for jobs is in your local newspaper or any trade journals of your industry. Local newspapers and trade journals will carry stories of major contracts won by local companies. Due to this big contract win and sudden surge in business, these companies may be looking for consultants or

contractors to help. Monitoring newspaper and trade journal announcements to identify companies with newly awarded large contracts and then searching the company's web site for jobs or contacting the procurement department are also excellent places to look for jobs.

Engineering Society Meetings. When engineers are having troubles at work one of the places they go for help is an engineering society technical meeting in hopes of finding someone who might have knowledge about the problems they face and how to best solve the problems. Therefore, engineering society technical meetings are another excellent place to look for jobs. And volunteering to present at these technical meetings is an excellent marketing plan. Attending several society meetings each month is a good marketing plan.

Trade Show and Conference. Trade shows and conferences are also excellent places to find jobs. Many people attend these events with the desire to see the latest and greatest advances or find solutions to their problems. Having a small booth may be cost prohibitive for a single consultant but sharing the cost of a booth with five or six other consultants may be well within your financial means. By having a booth at a large trade show you can expect to get exposure to thousands of engineers in a single day.

Since you may not know exactly where your next consulting job may come from, you need to be prepared to discuss your business no matter where you go. Having your business card and company brochures with you at all times, as well as developing a 30-second commercial, are the best marketing tools in being prepared to find work.

One Contact Should Lead to Another and Another. Finally, one last tip to share is that you are going to experience many "NOs" during your search for finds job. Please do not take the NOs personally and when you receive one it should automatically trigger the response, "Do you know of anyone else who would be interested in my capabilities or can you recommend where I look?" It is highly unlikely you will ever run out of leads if you use this technique. Every contact could lead to at least one or two others naturally creating more leads and enhancing your chances of finding the next job.

BIDDING AND SUBMITTING PROPOSALS

There are several common methods of bidding proposals which include fixed price, time and material, or progress payments. A fixed-price bid means you are bidding the cost of your work for one fixed price regardless of the amount and time it takes to accomplish the objectives. Most companies like to award a fixed-price contract because they know the work will get done for a certain price and costs will not escalate if there are problems. If you bid a fix-price contract you should make sure the scope of work is well defined. You can easily achieve the goals and from your prior experience you will know in advance how long it will take [8]. If you are uncertain about completing any aspect of the work you should add what is referred to as "uncertainty cost

factor” to your bid. This usually involves adding 20% to 25% of additional cost to your estimate to cover any unforeseen problems in completing the work.

Another option to bid a proposal is time and material. For this type of bid you simply quote an hourly rate you will charge. The company buys your services and pays you for each hour of work you complete regardless of whether or not the objectives are met. Companies prefer not to do this since it provides little incentive for consultants to work quickly. In addition, the company agrees to reimburse you for any material expense you incur.

The next method of bidding a contract is progress payments. For this type of contract the company pays you just on the progress you make. Your pay is directly tied to key accomplishment or milestones planned as part of the work. As each milestone is successfully completed you receive a payment in an amount predetermined for the milestone. On very long contracts this allows you to receive payments during the contract and you do not have to wait until the very end to get any payments. This type of contract may have milestones that are bid on fixed prices tasks, time and material tasks, or a combination of both.

Make sure when you submit a bid that you are fully responsive to the requirements of the bid and you bid in your costs plus a profit which gets us to the next part of determining how much should you bid.

There are many ways to compute what you should bid as your costs. The following is one example and by no means the only way. The purpose of showing this example is to help you understand what to consider when bidding proposals to ensure you recoup your costs plus make a profit.

The hourly rate is obviously one important proposal bidding factor. If you consider yourself as capable of earning \$80,000 salary working for a company and you can live comfortably on this and willing to do consulting at this income level, you can estimate a hourly rate using the following method.

$$\$80,000 / (52 \text{ weeks} \times 40 \text{ hours per week}) = \$38.46 \text{ per hour.}$$

Now you need to add an overhead factor to cover all your costs associated with having a business and paying for your own benefits, taxes, legal, and accounting fees. Most companies add an overhead rate of approximately 60% to 80%. This means your hour rate to cover your benefits and overhead costs is

$$\$38.46 \times 1.8 = \$69.23 \text{ per hour}$$

However, this does not take into effect the fact that you are not going to get consulting jobs that will cover 100% of your time for the year. If you only get three consulting jobs during a year and only work 75% of the time possible, this means you need to increase your hourly rate to cover the dead time between jobs. This will bump up your hourly estimate to

$$\$69.23 / (.75) = \$92.30 \text{ per hour}$$

Finally, you are in the consulting business not to just cover your costs but to make a good profit in doing so. Assuming you wish to make a 30% profit for all your time and effort as a bonus, this increases your hourly estimate to

$$\$92.23 \times 1.3 = \$120 \text{ per hour.}$$

If your desire is not to simply replace your present income of \$80,000 but to make significantly more then you are going to have to charge significantly more per hour. If you would like to double your income having your consulting business, then you would have to double the hourly rate to \$240 per hour.

Hopefully this simple example highlights to you all the elements you need to consider when determining your hourly rate. What do consultants bid their hourly rate at? This is considered highly proprietary information and most consultants will not share this information with you. Your hourly rate is going to be based on market demand, your skills, and what you are willing to work for which is strictly a personal decision.

My purpose in sharing this with you is to get you to realize that there are many factors to consider when determining your hourly rate and it is not unusual for consulting engineers to bid an hourly rate of \$200 to \$300 per hour and get it. Very successful consulting engineers are able to bid hourly rates 2× to 4× these rates because clients are willing to pay for their expertise and what they have to offer. With the risk of sounding trite, it is all about supply and demand.

A general rule of thumb for bidding material is to multiply the cost of any material you purchase by 1.5 to cover taxes, shipping cost, and any loan interest you might incur.

Two items to consider when submitting a proposal are the amount of time you spend on the proposal and how much should you tell the company about solving the problems. If you are bidding a proposal all alone, you do not want to spend more than a few hours putting the bid together unless you are able to re-coup your proposal costs as part of the bid. Most companies do not pay consultants to submit a proposal and when you do not win the contract this is lost time and effort.

The next item of concern is putting too much detail into the proposal which may result in giving the client the answer they need to solve the problem without ever hiring you. You are actually hurting your chances for getting hired. You can get away from giving them too much detail by discussing your approach to the problems and how this successfully solved other similar problems rather than detailing out the solution. The detailed solution will be shared once under contract.

STATEMENT OF WORK, SPECIFICATION, AND THE CONTRACT

The three documents used by most corporations to help define the scope of work for bidders are the statement of work, specification, and contract. The

statement of work normally defines all the tasks to be bid and a schedule for when the work is to occur. The specification is a document that describes the technical requirements placed on the product or work and how the performance will be either tested or demonstrated. The contract is the document that normally defines the terms and condition for completing the work. In this document instructions are usually provided on how to submit costs, how the work will be funded, and special contractual items that should be considered. It is well worth your time to read and study these documents so you understand what will be required of you prior to signing on the dotted line. If you are unsure about items in the documents get clarification from the client and even seek legal advice if you have to.

During the proposal submittal and contract negotiations, items often change and agreements are reached that change conditions of the contract or might affect your bid. If this is the case, make sure you get it in writing and have updated and signed documents. If in the future, during the course of your work, you run into trouble, the only legal foundation you will have to support your side of the story are these signed documents.

Another item of concern for the consulting engineer is who holds the copyrights or patent rights to work completed during the contract. Most companies, as part of the contract, will require you to sign over all copy and patent rights to the company. You should be prepared for this and in the event you disagree, have an alternate plan you can propose. If you already hold copy and patent rights, you should highlight and document these prior to signing the contract. This will clarify any confusion as to what rights you hold prior to the start of the contract.

COMPLETING THE WORK

Once you have been selected and accepted the work, your efforts turn toward completing the work. If you are working on-site at the client's company, then your progress and ability to report issues will be easier to do than if you are working off-site. If you are working off-site, you should make an effort to meet with the project leader at least once a week where both of you can sit down uninterrupted and you report your progress and issues. Regardless if you are on-site or off-site, you should be submitting a weekly report that summarizes your progress, any issues of contention, and what is being done to resolve them. This written record is extremely valuable for documenting what was accomplished. With your weekly actions documented it is easier to write a final report at the end of the project highlighting all you have accomplished.

GETTING PAID—IT'S NOT ALWAYS GUARANTEED

Most companies will make payments 30–60 days after the invoice is submitted, approved, and processed for payment. You can mail an invoice to a

company only to have it sit on the approving manager's desks for weeks only because they were too busy to approve it and submit for payment. Even once it has been approved it still may take 1 to 2 more weeks to process and mail the check. This means, under normal circumstances, a consultant can expect it is going to take 30–60 days to receive payment once they complete the work and submit an invoice for payment. The bottom line for the consultant is the job is not done when they submit the invoice, but must continue to check for payment.

The best thing you can do as you enter the final days of the contract is draw up an invoice and go over it with the approving manager of the company. This action will allow you to get agreement on the terms of payment and the amount prior to officially submitting it. If there are issues, it gives you time to work out the issues and hopefully not slow down the payment. Taking this action may also save considerable time in the approval process. It will also give you a clear indication of whether you are at risk of receiving a payment.

There are indications a client or company may not be able to make payments or even try negotiating down your cost [9].

1. The funding of the project was severely cut prior to completion.
2. The approving manager, company owner, or executive bonuses are tied to the project.
3. The funding of the project was tied to a new successful product launch that did not occur.
4. There is a sudden and unplanned workforce reduction in the company.

The best way to avoid these disaster scenarios is by weekly meetings with the project manager and starting, prior to the end of the contract, to discuss the conditions for the final payment.

SUMMARY

There are many things to consider when thinking about becoming a consulting engineer. First on the list is how to best start a consulting business, part-time or full-time, work independently or team with other consultants. Next is developing a business plan that clearly spells out how you are planning to operate your business and details out the actions you intend to take. It is your business plan for success. One key component to this business plan is clearly defining the skills and services you plan on offering. When the skills you intend to offer match the needs of the paying clients you now have the right combination for a successful consulting business.

Obtaining your first clients will require you to develop a marketing plan and start the search. Be ready at any time to talk about your consulting business and target the high probability place to find jobs. Develop and use

your business tools, office, business cards, web site, and marketing brochures. Increase your chances for success when starting by minimizing costs and maximizing profits. Determine your hourly consulting rate and how you plan on bidding proposals fixed price, time and material, or progress payments.

Be aware of the legal documents companies utilize when asking for proposals and awarding work: statement of work, specification, and contract. Clarify and get agreement on all conditions of contract before you start and get it in writing.

Once the work starts and you are making progress as planned, documenting results and getting paid becomes important. Getting paid does not always go smoothly and may require special action on your part. Be ready!

There is no better place to learn the skills of the trade than through an engineering consultants' network. Check in your local area for consultant networks you can call upon for assistance.

This chapter is by no means inclusive of every item one should consider for running a successful consulting business, but is meant as an overview of the key items to consider when thinking about becoming a consultant. The intent is to make you aware of actions to take and provide guidelines to follow for successfully launching your consulting business. Owning your own business is wonderful and hopefully you are motivated to continue on with your dream to becoming a successful consulting engineer.

Have you identified any career actions you want to take as a result of reading this chapter? If so, please make sure to capture these ideas before you forget by recording them in the notes section at the back of the book.

ASSIGNMENTS AND DISCUSSION TOPICS

- 1 What should you consider when thinking about becoming a consulting engineer?
- 2 What is better: working alone or teaming with another consultant?
- 3 What benefits does teaming with another consulting engineer offer?
- 4 How important is it to define your business?
- 5 What are the elements of a successful marketing plan?
- 6 Where do you find jobs?
- 7 How do you determine your consulting fee?
- 8 What actions should you take while you are completing the work?

REFERENCES

1. Greebaum, Thomas L., *The Consultant's Manual*, John Wiley & Sons, 1990.
2. IEEE Consultants Network, <http://www.ieeeusa.org/business/default.asp>.
3. IEEE Local Network, <http://www.ieeeusa.org/business/localnetwork.asp>.

4. WWW.Score.org Business Plans, http://www.score.org/template_gallery.html?gclid=CPLg8aLF8JgCFQG7GgodnVc81A.
5. Good-to-Go Business Plans, <http://www.goodtogobusinessplans.com/>.
6. Free Engineering Consulting Business Plan, Morebuisness.com, <http://www.morebusiness.com/engineering-consulting-business-plan>.
7. Levinson, Jay Conrad, *Guerrilla Marketing: Secrets for Making Big Profits from Your Small Business*, Houghton Mifflin Company, 1998.
8. Sokal, Nathan O., "Fixed-Price Versus Time-and-Materials Consulting Contracts: Be Sure You Know What You're Getting Into," *IEEE USA Today's Engineer*, May 2001, http://www.todaysengineer.org/archives/te_archives/may01/te2.asp.
9. Sokal, Nathan O., "Consulting—How to Make Sure You Get Paid for Your Work," *IEEE USA Today's Engineer*, March 2001, http://www.todaysengineer.org/archives/te_archives/mar01/te1.asp.