CHAPTER **46**

GETTING A MASTER'S DEGREE SO WORTH IT!

Before we start this chapter let's communicate a very clear and concise answer to the question, Getting a Master's Degree, Is It Worth It?

Yes!

Now that you know the answer to that question let's expand on this answer by exploring the benefits and options available to you.

THE BENEFITS TO GETTING A MASTER'S DEGREE

Let's get immediately to the bottom line regarding a master's degree and how it relates to salary. The National Association of Colleges and Employers data shows a person holding a master's degree makes about 10 to 15% more than the same engineers with only a bachelor's degree [1]. For a newly graduated engineer with a master's degree this amounts to about \$7,000 to \$9,000 more a year based on engineering salary surveys conducted by the Institute of Electrical and Electronic Engineers (IEEE), *Machine Design Magazine*, and others [2–5]. If you are interested in how your salary compares to others in your field check the websites www.payscale.com or www.hitechsalary.com. Doing an Internet search on "engineering salaries" is another great source.

Let's next look at what a 10% to 15% difference in salary means over the lifetime of an engineer. If you assume the engineer follows the average growth during a career of 40 years, the difference in earning power for obtaining a master's degree can amount up to earning \$2 to \$3 million more over a career. Since a master's degree is often a ticket to rapid advancement and more opportunity for a leadership position that pays more the figure of \$2 to \$3 million is actually a low estimate. What could you do with a couple extra million dollars?

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Second, many companies in industry consider a master's degree as minimum qualification to do meaningful technical work. Do you want to be on the leading edge of development and design? Or do you want to be delegated the more mundane and less challenging engineering tasks? The choice is yours.

TYPES OF MASTER'S DEGREES

Not all master's degrees are the same. As shown in Figure 46-1, a person returning for a master's degree has several options. To generalize, there are three basic categories an engineer can pursue when returning for a master's degree. These include:

- 1. Master's degree in business.
- 2. Master's degree in technology management.
- 3. Master's degree in engineering.

A master's in business is usually obtained through the school of business in most universities. This type of master's degree has nothing to do with engineering but is pure business in content. The common types of degrees in this area are a master's in finance, business administration, accounting, or economics. The master's in finance is primarily focused on running the financial aspects of the corporation and generally people who obtain this degree work in the banking/investment industry. A second type of master's degree in the school of business is a master's in business administration. With this type of degree you are taught the administrative aspects of a company manager. These include such things as department budgeting, personnel administration, and project management. Pursuing these degrees means leaving engineering and going into management dealing with money and personnel issues within the company. Most often you become a leader for non-engineering teams.

At the opposite end of the spectrum is returning for a master's degree in engineering. If you pursue this course, you are looking at developing your technical expertise and will remain an engineer. These types of master's degrees follow the general engineering disciplines like electrical, mechanical, chemical, or computer science. These programs are run out of the school of engineering similar to your bachelor's degree.

In the middle category is a new type of degree many universities are offering to help engineers with their careers. These degrees are referred to as master's in Technology Management, Technology Development, Technology Innovations, or Production. The focus of this new category of master's degrees is on educating a person with an engineering degree how to become a successful manager in a high-technology company. I have

Types of Master's Degrees

Master's in Business

- Master of Finance
- Master of Business Administration
- Master of Accounting
- Master of Economics

Pursuing these degrees means leaving engineering and going into management dealing with strictly money and management issues of the company.

Most often you become a leader for non-engineering teams.

Master's in Technology

- Master of Technology Management
- Master of Technology Development
- Master of Production
- Master of Technology Innovation

Pursuing these degrees means leaving engineering and going into management dealing with engineering and technology issues of the company.

Most often you become an engineering department manager responsible for leading and directing the technical team with finance and technical responsibility.

Master's in Engineering

- Master of Chemical Engineering
- Master of Software Engineering
- Master of Mechanical Engineering
- Master of Electrical Engineering

Pursuing these degrees means remaining in engineering and becoming a technical expert in your field.

Most often you become a technical staff engineer, leading the design of products. You are responsible for the technical performance of the product and do not deal with the financial or management issues.

FIGURE 46-1 Comparison of types of master's degrees.

had the opportunity to teach programs at Tufts University in Massachusetts, Santa Clara University and Stanford in California, and the University of Minnesota [6–9].

These degree programs are tightly aligned and often run through the School of Engineering versus the School of Business. The instructors are usually former engineers who have become managers of engineering teams. The students receive training in engineering, business administration, and managing people. They are well-structured classes that prepare the students to become the future leaders of high-technology corporations.

SELECTING A MASTER'S DEGREE PROGRAM AND STARTING

The first step is to determine your long-range career path. Are you going to remain technical or switch into more of a manager role? To help you with this decision talk to engineers who are managers, like your supervisor. Next, spend some time talking to engineers who decided to remain technical. Compare the different types of tasks both do on a daily basis. Which do you find yourself more aligning with—manager or technical staff? This will be a good indication as to which is the best choice for you. Next, network with people who have recently returned for their master's degree. Ask what universities they attended and why? How did they balance life, work, and school? What made them choose the path they selected?

The second step to getting your master's degree is to contact the local universities in your area and educate yourself on the types of programs they offer. What you have to do to get into the program, how much does it cost, and what types of degrees do they offer? Meet with a university counselor and discuss your goals and plans. Use the university guidance to structure a plan leading to the degree you want.

In the same time frame you are talking to the university, check with your supervisor and the Human Resources department to determine the policies and regulations that need to be followed. What qualifications do you need to meet to get the company to pay your tuition?

Once you have completed your due diligence, you must put the wheels in motion and enroll in a program.

Most university master's degree programs start in the fall and run through a 2-year program. Therefore, the optimum time to start the process for returning for your master's degree is in the first quarter of the year. It will take 4 to 6 months to fill out all the forms and get approval for acceptance. Do not wait until the last minute to apply. If you wait until late summer to start, more than likely you will not be accepted in time and consequently have to wait until the following year to start.

Career Tip. Most master's degree programs run on a 2-year cycle that starts in the Fall. You need to start the process of applying in early spring in order to be ready for the fall start. The sooner you get started on earning your master's degree, the quicker you finish.

You can do this. It is not as hard as one would think it would be. It will require you to make some adjustments in your life to fit everything in, but it is all doable. **Career Tip.** The only person holding you back is you!

When you finally start to attend classes and socialize with other people like yourself who are returning to school, you find it gets easier and the enthusiasm is contagious. You will be socializing with people who are going through the same trials and tribulations as you are. Use your class time to socialize and network with others. Your classmates can be excellent sources of information on how to handle, and effectively deal with, problems you may be encountering.

AVOID THE FATAL ERRORS

One of the fatal mistakes that you can make when returning for your master's degree is not to plan for the impact it will have on your family or significant other. Returning for a master's degree is going to take you away from your family for a significant amount of time in order to attend classes and complete homework assignments. This means other family members will have to make up for your absence—especially your spouse in terms of daily and weekly chores. If you do not have a plan in advance on how you are going to return to school, and get your spouse's buy-in, you are headed for trouble.

The people who I have witnessed getting in trouble are the people who thought returning for a master's degree was an excuse not to have to contribute to the daily family life. The engineer returning to school assumed they would work normal 8 to 10 hour days, attend classes after-hours, and then spend all the other weeknights and weekends completing assignments. They failed to realize, or just assumed, the spouse would do double duty since they were no longer around to help the family out. They decided to check out of the marriage for two years. Most spouses do not like to do double duty for the two years it takes to get the degree.

Career Tip. Obtain your family members' support when returning for a master's degree. Determine your plan and actions to ensure a good life balance.

My experience when teaching in master's degree programs was that a few students would fail to involve the family in the decision and the net result was, by the time the students had earned their degree, the spouse was fed up and filed for divorce. Please don't let this happen to you. Sit down early on and involve your spouse, children, or significant other, in your plan to return to school. Make sure they understand why you are returning and the benefits and challenges that will be involved. If you get their input before you start, you will be setting yourself up for success. However, you must be the one who comes up with a plan to maintain your contributions to the family since you will be away and studying so much. Including the people in your life who will be affected will make them more supportive.

GREAT TIPS FOR MAKING IT EASIER

Here are tips that should make it easier for you:

- **1.** Find at least two people in your company who have successfully completed the program you have selected. Network with them and discuss the classes, assignments, and problems they encountered. Human Resources is a great place to find out who these people are in the company.
- **2.** Get copies of assignments from previous students to see what was required. The scope of the project, the final output, and grading criteria. Use these as templates and starting points for your assignments.
- **3.** Have your contacts at work who have been through the program, review your assignments or projects to get feedback on how to improve.
- **4.** The first night of class pass around an attendance list and obtain everyone's cell phone number, work number, and email address.
- 5. When assigned a team project work virtually after-hours. Have a meeting spot or conference call-in number. Discuss team member roles and responsibilities. Keep great meeting notes and distribute by email. Spend time at your first meeting just getting to know each other. Go around and have each person discuss their background and why they are returning for their degree.
- 6. When special assignments are due, have the team members show up extra early to run through material or presentation material.
- 7. Ask to see if the instructors will come to your company and make a presentation. If the instructors are willing to conduct a lunch hour brown bag or after-hours presentation, line up your boss and other workers who might be interested in the material.
- 8. Here are some great tips for dealing with the family:
 - **a.** Combine your study time with the kids' study time. Sit around the kitchen table doing your homework together. My kids' grades actually improved after they saw dad studying so much.
 - **b.** Make study time fun by giving rewards when the kids or you complete it. Finally, reward your spouse and children every time you complete a major milestone or class. One night my kids actually reminded me that my project was due and I needed to complete it so we could all go out afterward as a reward. I told them we would go roller skating as a reward and they were really looking forward to this.

- **c.** Take the kids to the university with you at night and study there. Let them see where you are going and what you are doing. I even found a study hall next to a gym. So when we all completed our homework, we got to play basketball as a family.
- **d.** Spend a date night with your spouse alone where the two of you can reconnect.
- **e.** Reward yourself. Determine what healthy and morally uplifting thing you can do to reward yourself. It does not have to be big and the rewards should be all along the way. Not just at the end when you complete the degree.
- **f.** Finally, plan something big when you receive your degree. Maybe a family vacation or weekend get-away for you and your spouse.

SUMMARY

Hopefully by this point in the chapter you are thoroughly convinced, with all things considered, getting your master's degree is well worth the effort. With the proper planning and guidance you can do this.

If completed successfully, it will pay large dividends for the remainder of your career. There are multiple choices when selecting what type of master's degree you are going to pursue. Make sure you understand the differences and select the degree you are most comfortable with. Plan for the impact it is going to have on your family and be proactive in managing problems when they arise. Do not make the fatal mistake of obtaining a master's degree and losing your family. You do not have to do this entirely on your own. Many others have successfully obtained their master's degree. Seek these people and coworkers out and call upon them for help.

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 Conduct a web search of engineering master's degree programs in your local area. Identify the potential programs you would be interested in.
- 2 Select one of the programs and explore what the program requires.
- **3** Contact people at your work who already successfully completed the program and get their guidance about the program.
- 4 Develop a plan of tasks leading up to enrollment and starting.
- 5 Discuss your ideas with your spouse or significant other.

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- 5. Bokorney, Judy, "Salaries Still Rising," Evaluation Engineering Magazine, April 2007.
- 6. Tufts University. Gordon Institute (TGI) is a nationally recognized center within the School of Engineering that focuses on innovation, entrepreneurship, and engineering leadership. TGI has recently been honored by the National Academy of Engineering for Innovation in Engineering and Technology Education. For further information go to gordon.tufts.edu.
- 7. Santa Clara University. The goal of the Santa Clara University Engineering Management and Leadership program is to support the development of technical project managers. To this end, we require that half of the Engineering Management degree units be devoted to a technical stem, drawn from one or more of the other engineering departments. The remaining units are in management-leadership-related studies. For further information go to www.scu.edu/engineering/emgt/grad/progms.cfm.
- 8. Stanford. The Management of Science and Engineering (MS&E). Department provides education and research opportunities associated with the development of knowledge, tools, and methods required to make decisions and to shape policies, to configure organizational structures, to design engineering systems, and to solve problems associated with the information-intensive technology-based economy. For further information go to www.stanford.edu/dept/MSandE/about/index. html.
- 9. University of Minnesota, Center for the Development of Technology Leaders (CDTL). For high-tech companies, business success is all about mastering the gray zone—that area of the company where business, engineering, science, and technologies converge. CDTL programs and activities help high-tech professionals, managers, and leaders, grow their businesses by showing them ways to explore and maximize growth in the gray zone. For more information go to www.cdtl.umn.edu.