CHAPTER 19

THE LEADING REASONS ENGINEERS ARE NOT SUCCESSFUL

Most engineers are and were rated in the top quarter of their high school graduating class as evident from surveys conducted on the admission criteria for engineering universities [1–4]. Admission to engineering schools requires above average grades in math and science [5]. In order to graduate, the average engineering student must spend four years studying a variety of extremely complex and abstract subjects. Therefore, one would expect these highly trained and intelligent engineers would be highly successful once they leave school.

However, this is not the case. Some engineers are not successful on the job principally because they do not develop the broad outlook and basic human relations skills that are so important to achieving in a team environment. In this chapter, we will explore some of the most common reasons why engineers are not successful and how you can easily avoid making these career blunders.

DEFINITION OF BEING UNSUCCESSFUL

The definition of being unsuccessful takes on many different meanings for people. First, it is necessary to describe what this is. If a person is reassigned or removed from a project against their will because they are too disruptive to the team or fail to get the work done, this should be considered as being unsuccessful. The most unsuccessful action is termination from the company.

Being unsuccessful may come in more subtle forms. For example, success is thought of as moving up the corporate ladder. Therefore, stagnation at the same level year after year rather than advancing can also be unsuccessful.

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Receiving minimal raises, being assigned trivial duties, constant reassignment, or continual transfer, are all forms of being unsuccessful. Being pigeon-holed into one job or only one type of assignment can also be. The engineer can also be technically unsuccessful as well. If the engineer fails to resolve technical problems or the company loses a significant amount of money because of a poor technical approach, these might also be considered as unsuccessful.

The definition of being unsuccessful is different for every person. What is common to all, is the engineer does not reach the goals they intended to reach and there is no career growth. Let's explore some of the common causes of being unsuccessful for engineers.

LEADING CAUSES FOR BEING UNSUCCESSFUL

Studies have shown that there are a wide variety of root causes for engineers being unsuccessful [6]. Probably, the most common and noteworthy among these are:

1. Inept or poor communication skills
2. Poor relations with the supervisor
3. Inflexibility
4. Poor and lax work habits
5. Too much independence
6. Technical incompetence

These reasons for being unsuccessful are highlighted since they cross all technical fields and are probably the most prevalent ones cited on job appraisals. They are the problems that are likely to continue to haunt you throughout your career unless you aggressively do something to correct them. A special item to note is that the top four reasons are related to people skills and not engineering skills.

INEPT OR POOR COMMUNICATION SKILLS

Good communication skills are absolutely necessary to move up in the company. The inability to effectively communicate is what often keeps an engineer from advancing.

Good communication skills are required in a variety of areas. For example, good communication skills are required for reporting progress to management, giving specific direction to subordinates, dealing with customers, describing complex problems over the phone, presiding at meetings, writing specifications or reports, and even interfacing with people over computer networks and in video conferences.

Engineers get paid to resolve complex problems using communication skills to bring together the resources, people, and technical knowledge necessary for success. Lack of good communication skills could limit the success of the project and your career.

By nature and training, engineers tend to focus on technicalities rather than people and this often tends to make engineers poor communicators. Many believe technical skills are all that count and they will be rewarded accordingly. Technical skills do make up a portion of the criteria for advancement but communication skills are also another important part of the criteria.

An engineer who is able to communicate clearly (in writing and verbally) and has a good technical understanding is usually recognized by superiors as someone with high potential. To illustrate how important good communication skills can be, let's look at some examples.

Clear, concise, and easily understandable writing is a must for engineers who often write specifications and technical reports. These specifications usually define requirements for a product or process. Poorly written specifications for these products or processes can cause a multitude of problems. First, poorly written specifications need to be interpreted and rewritten so that the true meaning becomes apparent. This can cause delays in the start of the project because it appears the product is being designed to unsafe or potentially life-threatening specifications. All of this may result in cost and schedule overruns, potential lawsuits, or even death.

▶ ***Career Tip.*** Take writing classes and improve your capabilities.

Poor technical writing skills can be improved upon, but it takes time, practice, and more practice. One way to improve your writing skills is by taking technical writing courses at your local college or university. Another way I discovered to be helpful was look for guidance in old reports, specifications, or other documents previously generated by other people in the organization. If they are notable, adapt their outlines, forms, and style of writing as much as you can. Getting your hands on an old report that was well received can save you hours of rewriting and editing.

Clear and concise verbal skills are a must for career advancement. You need to be able to do this during your meetings with management as well as with fellow employees. You must be able to verbally communicate the important points contained in the technical charts, graphs, and reports that you have written. You must also be able to verbally give clear and concise instructions to people so they know what must be done. This is especially true when working on potentially dangerous projects such as nuclear reactors, high-voltage equipment, or with corrosive and poisonous chemicals.

Developing good verbal skills takes time, and you can take advantage of shortcuts by listening and studying how engineers in the upper echelon of the organization report verbally. On what do they put the most emphasis—cost,

schedule, or technical aspects? What is the standard form for presenting verbal results? Do they use projectors, handouts, drawings, computer plots, or some other type of graphics to support verbal reports? Seeking out opportunities to speak before groups or perhaps present technical papers is excellent training.

There are organizations that help to improve speaking skills. Probably the most common of these is the Toastmasters [7]. This is a national organization with local chapters dedicated to helping people learn how to make speeches and presentations in front of a group. By studying the speaking styles within your company, and through practice, you can significantly improve your verbal communication skills.

▶ ***Career Tip.*** Practice giving your verbal reports before you go into a meeting. Enroll in classes on making presentations. Refer to my website for information on making Great Technical Presentations (www.careerdevelopmentcoaches.com)

Poor verbal and written skills can be overcome, but this will take time. Once an engineer has made a poor impression with written reports or verbal presentations, they may not be asked to assist in certain key activities because of the initial impression. For this reason, communication skills are extremely important for the new engineer during the first year. Communication skills may even rank higher than technical skills since new engineers are not given the more technically challenging tasks.

POOR RELATIONS WITH THE SUPERVISOR

The personal relationship an engineer has with their supervisor is probably the dominant factor in determining success. Many engineers, and especially recent graduates, do not understand this and greatly underestimate the importance of their supervisor. They naively believe that if they do a good job, their supervisor will always recognize it and they will be successful. Doing a good job is not enough. What counts is doing the right job and having your supervisor recognize this. Previously, it was highlighted that in the business world, there may be many solutions to a problem. The challenge is to pick the right solution. This is where the engineer/supervisor relationship comes in.

In order to advance, you must have a good relationship with your supervisor. Engineers must be able to discuss problems, report progress or lack of it, identify solutions, and finally get the supervisor's approval. The engineer must understand their role on the team and relationship with the supervisor as one of cooperation and providing assistance.

The quality of your work will greatly suffer if the relationship with your supervisor is not good. Your supervisor is not your enemy; they have been in your position before and have a pretty good understanding of what needs

to be done and how to do it. He needs your cooperation and support, not a strained and troublesome relationship. This relationship with your supervisor should be similar to that of a hand and a glove; the hand and glove go together. You and your supervisor work tightly together and depend upon each other to get the work done.

How would you rate your relationship with your supervisor? Would you classify it as good or would you classify it as poor? Or have you never really thought about it? If things are going well between you and your supervisor you should be able to openly and candidly discuss work and problems. You should feel you can ask for guidance and it should be given willingly. Your supervisor should be defining a course of action and you should be implementing it. Not all relationships run that smoothly and there will be disagreements. The important thing is that you can air your differences, agree to disagree and move on. The optimal is to have things run smoothly.

There are danger signs to watch for in your relationship with your supervisor. The first is that the two of you are usually in disagreement. Do they always seem to be saying white when you're saying black? Are they nagging and berating you and discounting your work? Does your supervisor continually redo all your work with no explanation or continually give you a sense that you are incompetent? If you answer yes to any of these questions, then it's time to realize you have a very poor relationship with your supervisor, which can be career limiting for you. It's time to sit down with your supervisor, and discuss your observations and feelings.

▶ ***Career Tip.*** Don't ignore poor relationships with your supervisor; they will only get worse unless you work to improve them.

Try to find a common ground. Identify what you can agree upon and concentrate on this rather than on how much you disagree. Identify what you can do to help the situation. Ask for inputs. Do not ignore the situation; it will only get worse.

If the poor relations are caused by different technical opinions, the best thing to do is agree to disagree. This is where you both agree that there is an honest difference of opinion. You are each declaring that you respect the other's opinion but you disagree. By doing this, you are allowing each other to feel their opinion is valuable, just not your choice or way of thinking. Neither of you is right or wrong.

If you disagree with your supervisor on your performance, it is a different matter. To change an opinion of your performance, you will have to start performing the way they want you to and not the way you want to. You will have to clearly demonstrate actions that meet any criteria. Changing your supervisor's opinion will be hard and it will take time. It will also take a large amount of effort on your part. If, after trying all this, you feel you are not making any progress, it is time to move on and look for a new supervisor/department to work in.

INFLEXIBILITY

There are a couple of sayings that characterize inflexible behavior. The first is "There are two ways to do the job, the wrong way, and my way." The second is "If you want things done right, you have to do them yourself."

If you find yourself agreeing with these approaches to problems, chances are you are very inflexible. It may even be a problem that could be limiting your career advancement.

The objective of most classes when you are in college is to learn how to apply well-defined rules and formulas to come up with the one right answer. All other methods lose points and your grade drops. This leaves the engineer with the impression that there is only one right answer and all others are incorrect. On the job, however, problems are not well-defined and there exists a multitude of correct answers. If you apply this attitude of only one right answer exists, and it is your's, you more than likely will come across as inflexible.

Solving problems on the job requires a team effort, with inputs and solutions suggested or derived from many people. Often cost and schedules do not allow you to score a perfect 100. In fact, the final solution may be far from optimal. All this requires the engineer to maintain a balance in his work. Remain as flexible as possible and, with time and experience, you will learn to find the optimum solution.

Being inflexible can cause the team and you a multitude of problems. Most people will pull away from someone who is too inflexible. If you are inflexible, others will feel you will only implement your own solution to the problem and their suggestions do not really count. This is being unsuccessful for a team leader. Clearly, working on a team requires that you consider inputs from everyone and choose the best solution regardless of whose idea it may be.

Engineers have different backgrounds, styles, and formal schooling. Therefore, you must be able to work with each of these different styles. Flexibility is the key word. You must change your style in relation to those around you to stimulate them, as well as yourself, in order to get the best performance. An example I like to use is that of the coach of a successful football team who displays a different style when talking to the defensive line than he does when talking to the quarterback. He must be flexible and change his style in order to get the most from his players. Similarly, you must be flexible to get the most out of your career.

There are several questions you can ask yourself to help determine if you are flexible or inflexible. If you are presented new information, do you take the time to evaluate it or simply discount it since you already have the best solution? Do you tend to deal with all people and problems in the same way, or do you try to tailor your approach to that particular problem or circumstance to attain the best result? Do you ever change your mind?

▶ ***Career Tip.*** Ask your coworkers if they consider you flexible. The answers may surprise you!

Do you strictly follow every company policy, procedure, and regulation, with no exceptions? Is there, and has there always been, only one correct way to get the task accomplished?

Flexibility is key to career growth. Inflexibility is only good when it comes to compromising personal, moral, or ethical standards.

POOR OR LAX WORK HABITS

Poor or lax work habits as well as work schedules are other reasons why engineers fail. Poor or lax work habits and schedules can take many different avenues. Are you easily distracted as you go about your workday? Do people come and go continually in your office, leaving you with the feeling you just never seem to have the time to complete the work at hand? Are you unable to concentrate for very long on a problem before you find yourself wandering off to another problem? In other words, do you jump to the next problem or task before you have completed the present one? Do you spend too much time visiting with other people and having friendly non-work-related conversations? Do you get caught up in all the details and never seem to find a solution? Does it seem there is always some little detail coming up at the last minute to nullify your work? These are all signs of poor or lax work habits.

▶ ***Career Tip.*** Poor work habits left unchecked will cause your career to be unsuccessful.

The reason these habits are so career limiting is the dramatic effect they have on the quality and quantity of work you accomplish. Being easily distracted can turn an easy, short task into a major one. This type of performance causes cost overruns and missed schedules. Jumping from problem to problem leaves you with nothing ever being completed. You have worked on everything as the supervisor wanted you to, but you have accomplished nothing. Again, this is being in an unsuccessful mode for the engineer.

Getting caught up in the details and wandering aimlessly is very career limiting. The engineers of today are in the middle of an information explosion; they must be able to sort through massive amounts of information to determine what is important and what is not. In order to do this, they must be well-disciplined and organized. This means having methods of sorting and storing information, keeping good records, and summarizing whenever possible. It means you have the ability to organize and run complex experiments and keep track of all variables.

Lack of discipline and being disorganized are two major reasons why most projects fail or end in cost overruns. I cannot believe the number of times experiments or tests had to be rerun simply because the engineer was not organized, failed to pay attention to details, or never bothered to record test conditions or results. Poor and lax work habits cost the company time and profits and could even lead to injury or death in extreme cases.

TOO MUCH INDEPENDENCE

Most engineers are members of a design team. Team members must work closely with each other and draw from each other in order to accomplish their goals. If an engineer becomes too independent, the team can suffer. Some engineers believe they can do it all and try to take on bigger assignments than they are capable of handling. Others want to work alone with no one overseeing their work. In either case, these engineers often go off into a corner and get stuck because they are too timid or have too much ego to ask other team members for help. The net result is that their inability to solve the problems is often discovered too late by the team. Everyone is affected and the outcome is poor performance.

Don't be too independent; it is too career limiting. Try as best you can to be a team player. Take the time to share results with other team members, and do not be afraid to ask questions and get clarification if you need it. You may not have all the solutions but neither does anyone else on the team. By sharing ideas and discussing problems you may find that someone else may have the answer you are looking for. Better yet, you may have the answer to someone else's problem. You will find the solutions through sharing and working together as a team. Remember, any team regardless of the sport (football, baseball, volleyball) needs all of its team members working together to score. Your work team is no different.

If you are a loner, it will take some time to make the transition to team efforts. Take things slowly at first and at a minimum, at least show up for team meetings. If you are afraid to share your work in front of everyone, then schedule special time to review your work with only the team leader. Try to find at least one other person on the team with whom you feel comfortable sharing results. The point is that you must adapt to survive, and only you can do it.

If you are a team person but are experiencing problems working on the team, try to discover why. Is it personalities, different backgrounds, or the way the team is organized? Try to identify specific things causing you problems. Ask if others are having similar problems. You may find that you are not alone. Some teams gel and everything clicks; other teams develop a multitude of problems and try your patience. Stick with it. Teams do not last forever and there will be another team and other tasks. The best way to move up is to do your best on the present task, and prove you are ready for a more

challenging one. If you're not up to the challenge of the present task, what makes you think you will do any better on a more difficult one?

TECHNICAL INCOMPETENCE

Last on the list of reasons why engineers fail is technical incompetence [6]. This comes as a surprise to most people. An engineer must learn to face technical challenges to accomplish two things. The first is to broaden his technical knowledge and experience base. The second is to technically update himself periodically throughout his career. To neglect either results in being unsuccessful in the long run.

The products of today are extremely complex, requiring a multitude of engineering disciplines working together to successfully get them out the door. Take, for example, a copy machine. This machine requires that electrical, mechanical, optical, and chemical processes must all work together. If you expect some day to advance to the position of team leader, you had better expand or broaden your background to be able to deal with each of these disciplines. To be a really good team leader, you must understand the customer. This may mean looking into sales and marketing and broadening your knowledge of these fields also. The point here is that to continue career development you must broaden the scope of your knowledge.

If you prefer to remain competent in one area only, then you must periodically update your knowledge in that field. This updating may take the form of attending seminars or returning for classes at a university. Why is this necessary? Because the world of engineering is rapidly changing and not updating yourself could result in being unsuccessful in the long run.

YOU DON'T KNOW WHAT YOU DON'T KNOW

The first time my lead engineer said to me "You don't know what you don't know and these are the things that often stop you from being successful," I was totally dumbfounded. "What do you mean by that," I asked? He proceeded to explain it in very simple terms. He said the things you learned in school and understand, you already know about and you can usually come up with a solution or manage the problems to find a solution. However, if you do not know about something that is capable of causing your project to be unsuccessful, then you cannot prepare for this in advance and are most often doomed to suffer a setback. Therefore, in engineering, it is not the things you know that will hurt you, it is the things that you do not know that are the most likely to cause you to fail. To illustrate this, here are some simple examples. In electronics class, the professor lectures on how to build a great amplifier. However, when it comes time in the lab to build up the amplifier circuit, what you don't know is that all good amplifier circuits need to have great grounding and shielding otherwise they will oscillate and become useless. So,

if you are unaware of this, you will most likely build a useless oscillator rather than a superior amplifier.

Another example you might consider is chemistry class. You study chemical reactions and plan a lab experiment. However, no one mentions to you that the test tubes need to be completely clean and the water has to be filtered ultrapure before you start. Not knowing this, you march into the lab and start mixing chemicals, only to get completely unexpected results since you used contaminated test tubes and unclean water.

▶ ***Career Tip.*** Life is too short to make unnecessary mistakes. Learn from others what you don't know.

So I asked how I would find out about the things I don't know. My lead engineer replied that this is where having great relationships with your coworkers and great networking skills come in. He pointed out that the chances of you doing something so totally unique that no one in the entire company has ever done before are very, very slim. Knowing this is the case, it is your task and challenge to find the people who have done similar tasks, and spend some time discussing your approach and things to watch out for. This is a lesson I have high regard for and has saved me from setbacks many times.

BULL IN A CHINA SHOP

Engineers usually become very excited when a new project is launched and want to get things moving quickly. They rush into the assignment and do not take the time to come up with a well thought-out plan. They feel the need to just get going. The important thing is to show activity and progress quickly.

In the engineer's rush for progress, they end up stepping on peoples' toes, wasting effort, and usually end up breaking things. The perfect analogy is a bull in a china shop. Fine china shops are usually very small with many displays around the shop. One has to move carefully and make sure not to knock over or break anything. Well, a bull is not a graceful animal and a china shop is no place for one. The bull will move about with no regard for the china knocking down displays and breaking china.

Some engineers have the mentality of a "bull in a china shop" when it comes to working in a lab or dealing with people. Their method of dealing with equipment is beat it when it doesn't work, throw things around, and in general break equipment. When it comes to dealing with people, they are often abrupt and abrasive resulting in alienation of team members. They end up causing more problems than they solve.

Just remember, the best thing you can do with a bull is get them out of the shop and isolate them in a field far, far away from anything they can destroy. Don't be a bull in a china shop when it comes to engineering.

TAKING ON MORE THAN YOU CAN HANDLE

One setback experienced by some engineers is simply taking on way too much; they greatly overestimate the amount of work they can handle. Rather than doing an excellent job on small easy obtainable tasks, they try to take on more tasks and accept assignments they are incapable of completing. They simply do not have the time and resources to complete the project. This results in the manager perceiving the engineer as incapable of completing the assignment. An analogy here is the student who takes an extra credit load to graduate early, only to do poorly in several classes resulting in lower grades and a lower GPA.

Contrast this with an engineer who knows their limitations and selects easily manageable assignments and gets them done in advance of the deadline. The manager perceives this engineer as ready to take on more and a good candidate for promotion. The analogy here is the student who reduces the credit load and graduates a quarter later, but was able to raise the GPA since they had more time to concentrate on their classes and get better grades.

TRYING TO DO TOO MUCH TOO FAST

The analogy here is that your ultimate goal is to run a marathon. But you are at the infant stage. You must first learn to sit up, crawl, stand up, walk, jog, run, sprint, and then run a marathon. This is the successful way to get from the infant stage to running in a marathon; you build up to it. This is the same for engineering projects.

There are some managers who believe going through all these stages is too costly and if the team is really going to accomplish their goal on time, they need to start out running 10 miles a day when they have not learned to walk. This is usually not going to work.

A perfect example I have personally experienced was the build and test of multiple computer boards for a computer. The design team built all the computer boards at once since we were behind schedule and rather than testing each board individually in the box, the decision was made to just plug all the boards into the box and turn on the power to see if it worked. If it worked, we would instantly be on track. Why wait to test the boards individually? This will take too much time. Let's just start running marathons from day one.

When the power was turned on, there was an immediate flash and smoke came rising out of the box setting off the fire detection systems. After the smoke cleared, it was discovered that two of the boards had their power supply lines mistakenly tied to the ground, which shorted out the power supply in the box, burned up traces in the backplane and completely destroyed the two boards as well as damaging other boards in the box. It was a disaster.

It took us six months to get back to the point of test where the box burned up. This time the team made sure everything worked at each step along the way before we moved on. We learned to sit up, crawl, stand up, walk, jog, run, sprint, and finally run a marathon.

▶ ***Career Tip.*** Have a development plan that is achievable with intermediate steps that will lead you to winning a marathon.

THINGS TAKE LONGER THAN PLANNED

Some engineers are extremely optimistic about the time it takes to accomplish tasks. They assume everything is going to go perfectly the first time and plan their tasks accordingly, leaving no time for rework, errors correction, or unforeseen delays. As a result, they are forever reporting to management they are behind.

When planning out your tasks, plan in extra time that will allow you to recover from setbacks and unforeseen delays. Some of the most common examples for engineers are: allowing for the time to get parts ordered and received, time to rework products for unexpected failures, and the amount of time it takes to get things done when several people are involved. As the number of people that are required to touch the product or help in some way goes up, the chances for delay increase dramatically.

Some projects I have worked on have come to a screaming halt when the procurement person left for a 2-week vacation in the middle of parts ordering. Or the quality department shut down the operations while equipment was recalibrated. Or the assembly materials like glue and lubricants suddenly went out-of-date, and the production line was shut down until new material was ordered and put into the line.

A classic example that happened to me was the need for a special oscilloscope to take measurements on a circuit to complete the testing. The lab did not have one but I was able to locate the correct model of the oscilloscope on the other side of the plant. I quickly ran over to the lab and grabbed the oscilloscope and started walking back to the lab thinking I only lost about two hours. Not realizing the plant was a union shop and to move any equipment in the plant, a union person had to move it. About halfway back to the lab, I was stopped in my tracks by the union steward who quickly pointed out the violation and quickly relieved me of the oscilloscope. To teach the engineer a lesson not to move any equipment, the union steward made sure the oscilloscope arrived at the lab about two days later. So what started out as an unexpected delay of an hour turned into a 2-day delay. It was all totally unplanned and definitely put me way behind my overly optimistic schedule. After that instance, I made sure to always plan a little padding in my schedule in case I ran into unforeseen delays.

▶ ***Career Tip.*** Plan a little extra time in your schedule to help with unforeseen problems and you will complete your work on schedule most of the time.

Most people would realize this is the case in life and adjust accordingly; especially after going to college and pursuing a degree. Very few students today complete their degree in a 4-year plan, even though they have a plan to do so. The norm is more like 5 years. This gets to the next example of being overly optimistic when being a team leader and developing plans.

OVERLY OPTIMISTIC PROGRESS SCHEDULING

Industry rewards those who can get things done quicker than planned and under cost. As a result, when engineers become team leaders, they will generate a project plan that assumes everything will go perfectly as planned or they generate a plan that shows completion of the project ahead of the actual due date. For some reason, many team leaders often conveniently forget how long things really take and come up with a schedule that has progress being made in terms of hours and days, when these tasks normally take days and weeks to accomplish. The schedule is designed to make the leader appear as a hero.

The reality of the situation is that the team leader has generated an overly optimistic project schedule with a very low probability of successfully completing it as planned. Then just several days into the plan, the first setback occurs putting the team behind schedule for the rest of the project with no hope of recovery. For the remainder of the project, because of overly optimistic planning, the team is reporting to management as being behind schedule. Not a good situation to be in, especially if the completion date for the project is several years away.

The key here is developing a project plan or schedule that is based on realistic task duration with planned recovery times if setbacks should occur. If you are assigned to a project that has an overly optimistic plan or schedule, you are going to have to discuss this with your supervisor so that they are aware of the situation.

▶ ***Career Tip.*** Schedule realistic progress.

NOT WILLING TO PUT IN THE EXTRA EFFORT

Most managers realize people can accomplish about 80% of what they plan to do. Many distractions and delays come into play during the normal work day that impede or slow down an employee's progress. To counter this, a manager may assign each employee about 120% of the normal daily work, hoping to get

a full 100% daily output, if they are 80% efficient. Simply raising the expected output is a manager's only hope to accomplish work as planned.

Another method of making up for employee inefficiencies is by putting in extra effort. Engineering companies may have the unwritten rule that engineers do what it takes to get the job done, which is what they are paid for. Many engineering companies expect employees to put in the extra effort if it is required to stay on track or make up for errors. The combination of overly optimistic scheduling, running at 80% efficiency, and the belief that most engineers are willing to put in the extra effort generally results in management expecting employees to put in extra time. This usually translates to late nights and weekend work schedules. Oftentimes, you donate your time for the good of the company.

If you are not willing to put in the extra effort, it will be evident to your managers and coworkers. If you are looking for career advancement, this is not the image you want to portray to management.

SUMMARY

Being successful at the university does not guarantee success in the business world of engineering, and even very successful engineers can fail once they leave the university. The most common causes of engineers being unsuccessful are poor communication skills, poor relations with the supervisor, inflexibility, poor work habits, too much independence, and technical incompetence.

Being unsuccessful can take many forms. Some of these forms are stagnation at one level in the company, minimal raises, constant reassignment, poor assignments, and ultimately, being dismissed. Setbacks need not be final, and with effort you can turn your performance around. To do so, you must constantly work at improving yourself on a daily basis.

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 is the definition of being unsuccessful for you?

2 Why are communication skills so important for an engineer?

3 Is having good people skills really a requirement for an engineer?

4 How can you avoid having too much independence?

REFERENCES

1. Burkin, Kurt, *US College Admissions Criteria*, University of Wisconsin-Madison, http://www.education.umd.edu/EDPA/faculty/cabrera/College%20Admission%20Criteria.pdf.

2. Barreto, David, and Quevedo, Antonio, "Student Profile of the Incoming First Year Class of the College of Engineering at UPRM and Their Academic Performance After Their First Year," presented at 2005 ASEE Annual Conference, Portland, OR, June 13, 2005.
3. University of Texas Tech Admissions website, http://www.admissions.ttu.edu/freshman/requirements/default.asp.
4. Purdue University admissions website, http://www.ipfw.edu/admissions/requirements/beginning.shtml.
5. College Admissions Info website, http://www.collegeadmissions.ws/college2.php.
6. McAlister, J., "Why Engineers Fail," *Machine Design Magazine*, February 23, 1984.
7. http://www.toastmasters.org/.