TEAM SKILLS
ESSENTIAL FOR SUCCESSFUL ENGINEERS

The complexities of today's products require teams of engineers working together in a unified, efficient, and productive fashion toward common goals. The teams are often composed of engineers with different expertise such as electrical, mechanical, chemical, and software. Engineers working in this environment need team skills to perform. Team skills do not come naturally to most people; however, these skills can be learned and with practice can be added to the engineers' skill set. In this chapter, we first discuss why team skills are important for your career and then specific team skills engineers can use to become a great team player.

WHY HAVING TEAM SKILLS IS SO IMPORTANT TO YOUR CAREER

The value of team work has been a subject of research for quite some time and was first recognized in books by Bradford and Cohen, *Managing for Excellence*, and Tom Peters, *Thriving on Chaos* [1,2]. Roger Allen from The Center for Organizational Design, Inc., puts it eloquently when he states "In spite of our technological advances, our competitive advantage lies in our ability to work together effectively" [3]. Technology and knowledge is proliferating at faster rates than ever before because of the Internet, and the ability to acquire new technology literally overnight whether it is next door or from another country on the other side of the earth. This means all engineering teams are starting out with the same basic knowledge and the team that best works together is going to be the most successful. I believe perfect examples of this are the Lego League and First Robotics where students compete with each other starting from a basic kit common to all. The team that usually wins is the team that has discovered how to work together productively to foster the best ideas, solve

problems, and discover new and improved methods of accomplishing work [4,5].

I firmly believe that the United States' ability to continue to be the leader in technology development is directly related to how well we train our engineers and scientists to work together in teams. I applaud both of these organizations for their efforts and encourage all engineers and scientists to volunteer some of their time to help support these activities.

Glenn Parker, in his book *Team Players and Teamwork,* identifies the top benefits companies receive from high-performing teams [6]. As you read this list, keep in mind, these are the same reasons engineers are promoted and advance in a company.

1. Greater productivity (getting more done than others)
2. Effective use of resources (doing more with less)
3. Better problem solving (ability to solve difficult problems)
4. Better quality products and services (more sales, less rework, and repair)
5. Creativity and innovation (develop new products)
6. Higher quality decisions (ability to know what is best)

The conclusion you can draw from this list is: what is good for the team is also good for your career.

▶ *Career Tip.* What is good for the team is also good for your career.

Sooner or later, all assignments come to an end and you have to transition to new assignments and/or new teams. Generally, managers who are responsible for putting together a new team will want to select the best members possible to ensure success, especially if the new assignment is very difficult. The jargon in industry is selecting "A" team members. The two key requirements of becoming a part of the "A" team are great technical skills and great team skills. If you have great technical skills and are also recognized as a great team player by management, you have career power and an advantage over others. Senior management will seek you out for the more difficult assignments and ask you to join new teams. In other words, career advancing opportunities seek you out rather than you having to go hunt for them. With great team skills, you are a more desirable worker and consequently more likely to stay employed during downturns.

▶ *Career Tip.* Develop great team skills and be recognized as an "A" team person.

Another benefit of being a great team player is hiring ability. James Challenger, in his book *The Challenger Guide: Job-Hunting Success for Mid-Career Professionals*, identifies that one of the best skills a person can possess are great team skills and this is a major trait employers look for when hiring people [6]. Highlighting your teamwork skills during an interview can be the factor that makes you stand out from the rest of the candidates and gives the employer the reason to hire you.

SUGGESTIONS ON HOW TO BE A GREAT TEAM PLAYER

The actions you take or the skills you practice will vary upon the stage of formation the team is in. The stages a team goes through while performing work have been highly researched and studied [7–9]. These stages are

1. Forming
2. Storming
3. Norming
4. Performing

Forming Stage. This stage usually occurs at the beginning when the team is first formed and they are meeting for the first few times. Most people are new to the project and just getting acquainted with each other and the objectives of the team. During this stage, most members are quiet and in learning mode, many are concerned about expectations and how much time this is going take. Are the assignments going to be difficult and who is responsible for what? Here are some skills and/or actions you can take during this phase to help the team out.

1. Ask the leader and/or other team members to introduce everyone and be prepared with your 30-second response in what you do and your skills. After the meeting, stay around and socialize with the key people on the team you will be interfacing with.
2. Ask the leader to share their vision of the team, its objectives, and the project tasks.
3. Discuss and ask questions about the team's roles, responsibilities, and logistics. For example, the organization chart, meeting times, the duration of meetings, and expectation of members for reporting progress.
4. Volunteer to help the leader in any way you can: taking notes, arranging rooms, or running the projector. Volunteer for action items.
5. When asking another member of the team a question, start out by saying the person's first name. For example, I would like to ask Bob a question about . . . . This helps everyone on the team learn and memorize each other's names.

▶ *Career Tip.* During the forming stage, start out on the right foot by helping the leader as much as possible. Volunteer for action items.

Storming Stage. This stage usually occurs after several meetings have taken place and people have a somewhat better grasp of the team objectives. Note I said somewhat better understanding. During this stage, team members usually feel comfortable enough to speak up about what is bothering them, what the problems are, and why progress is not being made. This, as the title suggests, is a turbulent or stormy time for the team. In some cases, everything about the team is challenged: the objective, organization, member roles, and methods of how work is accomplished and reported on. Everything is fair game to question and members want to know why they are doing it this way. Although turbulent, this is a good stage for the team to pass through because they are more unified as objectives, processes, and roles are agreed upon, and the members can focus on the real work at hand.

If the team fails to pass through this stage without issues resolved and agreements reached, more than likely the team is going to be divided and may end up as a dysfunctional team not accomplishing their objectives in an efficient manner or even failing. Here are some skills and/or actions you can take during this phase to help the team out.

1. Ask for clarification about anything you do not understand.
2. Remind the team of the need to find solutions to problems and ask for others' suggestions.
3. Be a facilitator and list the problems and help identify solutions.
4. When opposing sides seem to be in a deadlock, work to identify a compromise position both sides can live with.
5. Ask to list what is "absolutely necessary" and what is "nice to have."
6. Ask if two opposing sides can "agree to disagree that they have honest differences of opinions"; and move on for the sake of the team.
7. Ask for a recess or timeout for people to cool down and think through things.
8. Finally, one very bold move you can take to break the paralyzing arguments is to ask the team if there are any members who would like to resign since they feel too uncomfortable about continuing on the team.

▶ *Career Tip.* The art of compromise is a vital team skill.

Norming Stage. This stage follows the storming stage. In the norming stage, people realize they have to "go along to get along." At this point on the team, development members have learned all the complaining and heated

discussions are no longer productive and they need to get down to real work. The team has settled on how they are going to operate, interface with each other, and deal with problems and the objectives. They are more into agreeing and getting along. A team spirit emerges and a sense of cooperation prevails in order to get at the real work at hand. Here are some skills and/or actions you can take during this phase to help the team.

1. Ask what is the near-term, most important items for the team to focus on.
2. Review the big picture and overall progress toward the final goals.
3. Encourage discussion of results and any issues people have identified.
4. Ask if anyone needs additional help.
5. Challenge the team to think of better methods, higher efficiency means, or ask for their help in streamlining.
6. Ask what can go wrong and how to prevent it.

There are two threats to the team's progress at this stage. The first threat is that people become complacent simply to get the work done and turn in poor work, thus the need for emphasis on high-quality work. The second threat is new members joining the team and pushing the team back into storming stage while the new members come up to speed on why the team has settled on its present operating methods and objectives. The team leader needs to spend special time with any new member discussing the progress to date and reasons why the team is operating the way it is.

▶ *Career Tip.* Don't settle for mediocre team work; challenge yourself and others to do the best they can.

Performing Stage. This is the final stage of team formation and at this point, the team is what some people call a "well-oiled machine" producing high-quality work. The team has made significant progress toward its final objective. The members are interfacing with each other as needed and problems are being raised and resolved. The team and meetings have settled into a highly productive routine. Here are some skills and/or actions you can take during this phase to help the team.

1. Volunteer to lead training efforts for new people.
2. Coordinate any new outside training needed for the team.
3. Ask if you can run the meeting, or take over any parts to help balance the workload of others. Redistribute the workload.
4. Volunteer to create a milestone chart that shows progress of the team.
5. Highlight and/or compliment team members' accomplishments during the past week.

6. Organize a team celebration and invite management when the project is completed.
7. Submit the team for awards.

▶ *Career Tip.* Turning in high-quality work on your team assignments and getting done ahead of schedule is a career accelerator.

So far, we have identified the four stages teams go through and great team skills you can practice at each of the stages. However, there are other team skills that should be used during all stages of team development. In the next section, the great team skills that can be and should be used during all stages of team development are discussed.

COURTEOUS TEAM SKILLS TO USE ALL THE TIME

The following team skills are great actions you can take ANY time you are attending a team meeting. They are relevant in any of the four stages of team development and are basically commonsense: polite and courteous actions that foster respect and understanding toward your fellow teammates.

1. Do not talk over people or cut them off in mid-sentence. Have the good manners and courtesy to wait until they have finished before responding.
2. When someone is sharing an idea with you use active listening and paraphrasing skills to acknowledge back to the person that you have heard them.
3. Praise in public, but do not overdo it.
4. Thank people for their contributions.
5. Ask to see the data supporting their conclusion before you pass judgment.
6. Live up to your commitments and deadlines; get your work done on time. When you are going to be late with your work, notify people affected in advance of deadlines and negotiate a new due date.
7. Show up to meetings early, be prepared to discuss your results, and show technical data to support your work if possible.
8. Find things you have in common with others on the team.
9. Take time to socialize with other members of the team either before or after meetings.
10. Volunteer for action items.
11. Go the extra mile to make sure things are working out for people who depend on your work.

12. Identify early on who are the people you are dependent on for work (your suppliers) and who are the people you are doing work for (your customers). Spend time getting to know your suppliers' and customers' needs, problems, and desires.

13. Ask quiet people their opinions.

DESTRUCTIVE TEAM ACTIONS TO AVOID

Please check any of your diversity biases, pet gripes, ego, and bad attitude, at the conference room door before going to a team meeting, especially if the meeting is going to be a stormy one. Being identified by others as a problem team member who is abrasive to others, and does not produce high-quality work on time, is very career limiting. You can win a single battle at the meeting and in doing so alienate others on the team from ever supporting you again. Your net result is that you won the battle but lost the war. Here are actions to stay away from when you are on a team.

1. Talking over others at team meetings before they are finished and not allowing other people to be heard. Dominating the meeting with your ideas and actions.

2. Attacking people personally at meetings. Here are some examples: I hate this idea, you're totally wrong, that's stupid, you know nothing about this, this will never work, and I think the correct thing to do is . . . .

3. Escalating the tone and harshness of your words when in a heated debate. Shouting at people to win an argument.

4. Surprising other teammates with unexpected results at meetings and embarrassing them just so that you can say "I told you so."

5. Always thinking of reasons why things will not work instead of thinking of reasons why they will work. For example, we tried that already, no budget, it's never been done before, what makes you think you can do it, that's too hard to do, no one will let us do that, the boss will never approve that, it's not my problem, so I am not going to worry about it, ...

6. Sidetrack the meeting by bringing up nonrelevant subjects that are fun to talk about but do not help the team.

From the two lists, it is easy to see there are twice as many positive and constructive team actions and skills you can utilize than destructive. Human nature for some people is to select the destructive actions at meetings. My challenge to you is to sit at your next team meeting and observe the team members in action. Count the constructive and destructive actions that occur without letting anyone know. I think you will be greatly surprised at the number of destructive actions. If you are on a team dominated by destructive

acting members, there is something very simple you can do to help turn this round. Let me share with you what one of our team members recently did to turn a negative situation.

Our company is a proud contributor to the "Relay for Life" charity that raises money for cancer research. During the 4-week time period to raise money for the cause, one of the team members on a very difficult assignment became fed up with all the negative and destructive remarks of the team. So to help the team realize they needed to change their attitude in order to start performing, he got a large piggy bank and fined everyone a quarter (25¢) every time they made a negative or destructive remark at a team meeting.

The quarter was considered a contribution for the "Relay for Life" cause and the person had to instantly deposit the quarter into the piggy bank at the meeting in front of everyone. This was a very clever and non–threatening way to point out to people how negative they really were. People joked about being caught and paid the quarter at first. They even threw in dollar bills to be allowed to get all the negative responses and frustration out at once. During the first week of fining people, he collected nearly $80. By the end of the fund-raising, he had collected a little over $200 for "Relay for Life." If you quickly do the math, at a quarter a remark, this means the team members made over 800 destructive remarks during the 4-week time. By the end, most of the team members, and this includes myself, thought twice about making a negative remark, especially since everyone else on the team seized the chance to point at you during the meeting and identify you had just made a negative remark. The negative remarks subsided and the team moved to positive constructive actions rather than turning the meeting into complaint sessions.

SUMMARY

The great team player senses what contributions need to be made and automatically takes action without being asked. The great team player places the group's objectives, methods, and processes over their own personal goals and is more concerned about how he or she can best support the group in achieving its objectives.

The great team player plays many roles as the team moves through the stages of development from forming, to storming, to norming, and finally performing. These roles include facilitator, listener, cheerleader, challenger, collaborator, peacemaker, and even leader at times. The great team player is always cautious and respectful of others.

Practicing the team skills identified in this chapter is not hard to do, but requires a conscious effort and determination to simply "honor and play by the TEAM'S rules." People may feel that if they are not dominating the meeting, giving advice, or the leader of a team, they will never be noticed. However, as teams come and go, it will become obvious the successful teams follow you as you move from team to team. Management will definitely notice.

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 team are you on now and what stage are they in the formation process?
2 Name several things you can do to help the team during the formation process?
3 Have you ever worked on a dysfunctional team, and if so, what do you attribute the causes to?
4 What actions are always appropriate regardless of the stage of development the team is in?

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