PART THREE

TEAMWORK AND PROJECT MANAGEMENT

CHAPTERS

CHAPTER 11: DEFINING A HIGH PERFORMANCE TEAM

Chapter outline

- How teams develop
- What makes a team succeed
- What causes teams to fail

In each of your EDC projects, you will work on a team. Teamwork makes the engineering design process more efficient and productive, and teams are being used more and more frequently in all professions you may enter. The following two factors explain the importance of teamwork.

1. <u>Teams make the engineering design process more efficient and productive</u>:

   - The varied expertise and experience of team members allow the team to approach problems from many perspectives and thereby produce a good variety of possible solutions.

   - A team can divide up work to make the best use of each member's knowledge and skills.

   - Because team members work interdependently toward shared goals, they can motivate each other to work at the highest level.

2. <u>Teamwork is valued no matter what profession you enter</u>.

   Teams have become a fundamental feature of organizations. You will find teams in factories, corporate offices, research laboratories, universities, hospitals, law offices, government agencies, and other places. According to Harvey Robbins and Michael Finley (1995), two authorities on teamwork, "The world is teeming with teams":

   > Work teams, project teams, customer support teams, supplier teams, design teams, planning teams, quality teams. Functional teams, and cross-functional teams....Advisory teams and action teams. Teams with a structure and a charter, and teams that come together on an ad-hoc basis, do something, and fade back into the woodwork. Senior-level teams and rank-and-file teams. Leader-led teams and leader-less teams (p.7).

Teams have become integral to organizations largely because of the accelerating complexity of the decisions that need to be made. According to researchers Carl Larson and Frank LaFasto (1989):

> Whatever the problems are that occupy our attention, it is probable that the more significant they are to our collective well being or to the success of our institutions and enterprises, the more complex they are likely to be. Solving these complex problems demands the integration of many divergent points of view and the effective collaboration of many individuals (p. 17).

If you have been on a team in soccer, debate, chess, or other activity, you know that successful teams don't just happen; they are built by individuals working together. This chapter offers you a deeper understanding of how teams develop, what makes them succeed, and why they fail. In subsequent chapters, we will explore ways to make a team work.

11.1 HOW TEAMS DEVELOP

A team is more than a group of people working together. A "real" team is:

> Two or more people who recognize and share a commitment to a specific, common goal and who collaborate in their efforts to achieve that goal (O'Brien, 1995, p. 3).

A real team is distinctly different from what Katzenbach and Smith (1993) call a **pseudo team**: a group of people who are trying to reach a shared objective or goal, but who **do not** share a unified commitment to a common goal and instead put their individual goals before those of the team. A real team is also different from a **working group**: a group of people who need to coordinate their individual work, but who do not share a common goal or a need to collaborate.

Real teams take time and work to develop. Research shows a predictable path from one stage to the next. Knowing that these stages occur and being prepared to do what is necessary to move forward should alleviate some of the anxiety you might feel as your team comes together. It is normal to feel that you are operating out of your comfort zone at times, but doing so is necessary and usually unavoidable.

The chart below illustrates a model for understanding team development, first proposed in 1965 by Bruce W. Tuckman, a former professor of economics who now works in the business sector. Tuckman identified four stages of team development: forming, storming, norming, and performing.
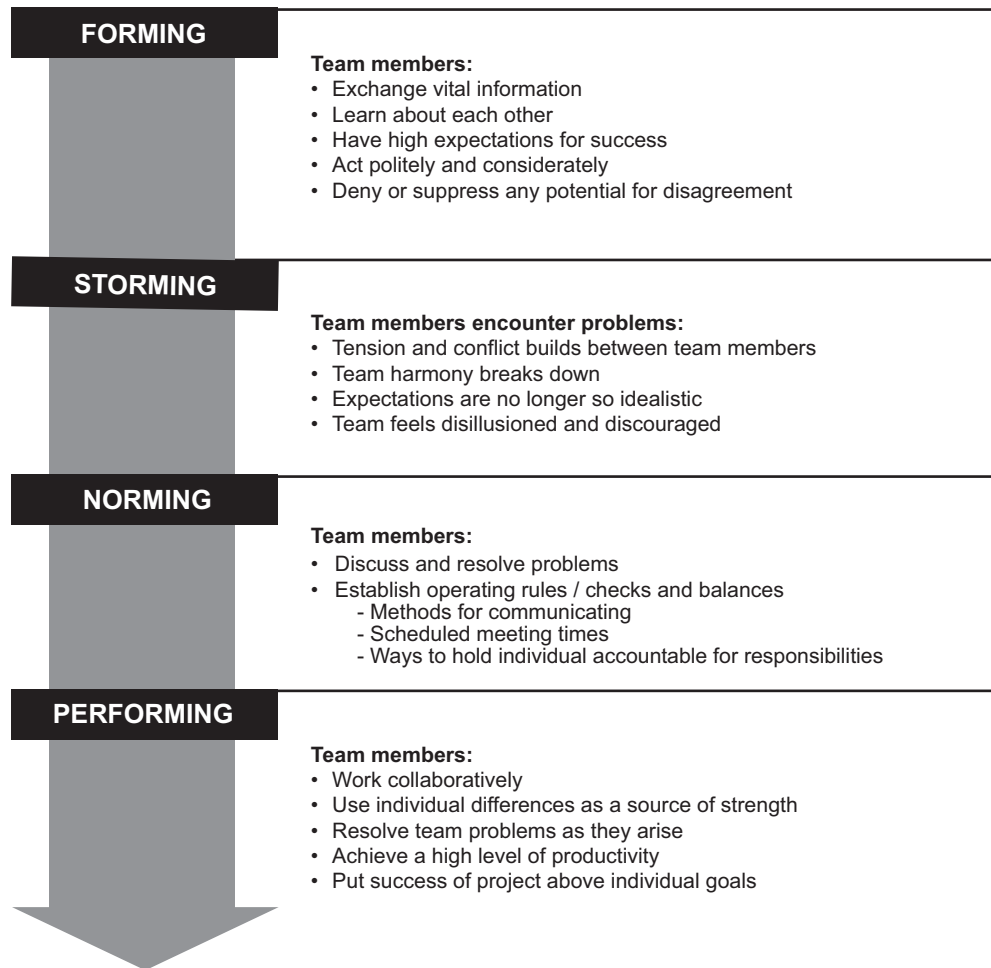
FORMING

Team members:
- Exchange vital information
- Learn about each other
- Have high expectations for success
- Act politely and considerately
- Deny or suppress any potential for disagreement

STORMING

Team members encounter problems:
- Tension and conflict builds between team members
- Team harmony breaks down
- Expectations are no longer so idealistic
- Team feels disillusioned and discouraged

NORMING

Team members:
- Discuss and resolve problems
- Establish operating rules / checks and balances
    - Methods for communicating
    - Scheduled meeting times
    - Ways to hold individual accountable for responsibilities

PERFORMING

Team members:
- Work collaboratively
- Use individual differences as a source of strength
- Resolve team problems as they arise
- Achieve a high level of productivity
- Put success of project above individual goals

Figure 11.1: Stages of team development

Here is what happens at each stage:

- Forming: "No problem."

  When you are assigned to a team, you are in the forming stage. You will exchange information about where you live, what your schedule is, when and where you can meet, how you can contact each other, etc. Usually, expectations for the team and its success are high. Everyone is polite and considerate, and disagreements or conflicts aren't evident.

- Storming: "Boy, have we got problems!"

  Somewhere along the way, the team begins to encounter problems that don't solve themselves. Members begin to feel tense and anxious about the success of the project. Emotions can run high. Turmoil begins to swirl beneath the surface, if not out in the open. Some team members may begin to feel disillusioned and discouraged.

  Here's how one student, "Toni," describes her team's storming stage:

> The storming stage began while we were choosing an alternative for the Apollo project. Small personality conflicts began to arise as we discovered which team members were more aggressive. We also discovered which team members were more willing to compromise. The "key event" that marked the storming stage was the choosing of an alternative for the Apollo Project. It seemed as though one team member was pretty unwilling to compromise on her design, which is why we ended up choosing that design. She felt that her design was best and was not really willing to make any changes to it or let anyone else help out with the construction of the design. This frustrated some of the other team members, which led to the storming stage.

- <u>Norming</u>: "We are going to have to do something about these problems."

  Most teams try to avoid conflict and confrontation, hoping the problems will work themselves out over time. They almost never do. Members need to discuss and resolve conflicts and establish a consensus about how to work together efficiently and considerately. This process helps them become a real team with shared goals Members need to establish operating rules about communication and accountability. They will need to try out these rules, periodically assess how well they are working, and revise them if necessary. Tools such as the process check and peer review (Chapter 12) can help.

  Here's how Toni characterized her team's norming stage:

  > During the norming stage we began to recognize our differences. We also discovered our individual strengths and weaknesses and began to work on improving our weaknesses. We realized we were all unique individuals and that we would have to learn to accept each other's differences if we were going to be able to work together. However, with our team, the "norming" stage was not one that was verbalized. We never sat down to talk through our differences. We did, however, draft a written version of our Individual and Team Performance Standards. We also wrote up a Team Decision Making Guideline. I, personally, took a step back and tried to analyze my own weaknesses and figure out how I could improve. Thus by analyzing our own weaknesses, we were able to function better as a team. The norming stage was characterized by the fact that fewer conflicts were occurring and we were working together much more efficiently.

- <u>Performing</u>: "We resolve problems as soon as they arise."

   Team members have figured out how to work collaboratively and are now able to use their differences as a source of strength, not weakness. While problems will continue to arise, the team feels comfortable and confident in confronting and resolving them so as not to jeopardize the success of the project. Members begin to enjoy working together and are glad they don't have to do the project alone. They often get so involved and excited about what they are doing that they lose track of time, and the success of the project becomes more important than individual goals.

   Teams may also evolve into what Katzenbach and Smith (1993) call a high performing team: a team whose members are deeply committed to each other's growth and success. Members of a high performing team genuinely care about each other as people, not just teammates, making the team experience exhilarating and rewarding.

   Toni describes her team's performing stage this way:

   > We actually began to enjoy working with each other on our project. We learned how to best use our individual strengths, and we discovered that our differences of opinion could be used to strengthen rather than weaken the team. As expected, problems continued to arise due to differences of opinion and personality. However, the team tried to solve these problems in a mature manner by discussing them openly. Despite small conflicts that occur, the team is continuing to make progress on the project. Though we have generally been functioning as a real team, we have not yet become a high performing team due to the fact that small personality differences still exist.

Toni's last comments suggest how difficult it is to become a "high performing" team. Still, it is clear that her team has come a long way during the 10-week project. Members are able to squarely face conflicts that arise and appreciate each member's abilities and personality.

11.2 WHAT MAKES A TEAM SUCCEED

According to Carl Larson and Frank LaFasto (1989), a team needs eight factors to succeed:

1. <u>A clear, challenging, and urgent goal</u>. Team members share a concrete vision of success. They need to feel challenged but not overwhelmed. After interviewing members of more than 75 teams, Larson and LaFasto (1989) concluded that "high performance teams have both a clear understanding of the goal to be achieved and a belief that the goal embodies a worthwhile or important result." In her work with teams, consultant Maureen O'Brien (1995) always begins by asking, "'What significant contribution does your team make to the organization, the community, society, the world?'....My goal is to have teams think about and verbalize not just

what they do, but why they do it, and therefore, why it is critical that they do it well" (p. 16).

Your project may offer value to:

- an organization that is wasting resources
- users whose needs aren't being met
- society, which will benefit from the team's design
- the team members themselves in allowing them to develop important skills, stretch themselves, or be creative and break new ground

At first you may not think that your EDC project has what LaFasto and Larson call an "elevating goal." But even the most mundane-seeming projects have value to some group of people. One team spent time defining the value of a project that seemed unpromising: designing a Web-based system for directing Mudd Library users to biographical resources:

> Any student can testify to spending a large amount of time in the university library. This is usually the result of bad research techniques, poor library organization, or insufficient search capabilities. It was brought to our attention that a biographical search system was needed to improve searching capabilities within the Seeley G. Mudd Library for Science and Engineering (SEL). When librarians are not readily available, library users have no easy way of finding biographical resources they need. There is no specific database that can guide them to these reference materials. Instead they must resort to outdated methods...to aid them in their times of distress. Library patrons probably could find the biographical resources using this system, but the search would be long and tedious.

The team discovered the value of its long-range goal by looking at the problem from the users' perspective or, as it were, "feeling the users' pain."

Another team found value in their project—preventing a new kind of paint from freezing during shipment and storage in cold climates—by setting a more personal goal. When their lack of motivation resulted in low grades on their project, they decided to master the skills and tools taught in EDC. This spurred them to become a high performing team and deliver a product that greatly impressed the client.

However you find your elevating goal—through interviews with your client, researching competing technologies, talking over ideas with your team—you will discover that defining your team's valuable long-range goal will help you perform at the highest level.

2. <u>A results-driven team structure</u>. The success of the team is measured by results, not effort, and the team is structured to achieve those results. Specifically:

   • Each team member has a clear role and is held accountable for his or her contribution.

   • The team has an effective communication system, keeping all team members informed in a timely way.

   • Team members give each other prompt and helpful feedback on their performance so each can do his or her best work.

   • Decisions are based on facts and data, not on preferences, hunches, or assumptions.

3. <u>Competent team members</u>. To do their project well, team members need technical skills and knowledge. They also need to know how to work with others and be able to identify, confront, and resolve issues as they arise. Many students in EDC say this is their first team experience with others who are as smart and responsible as they are. They talk about how important it is to trust your teammates.

4. <u>A unified commitment to the team and its goals</u>. Every member must be willing to do whatever it takes to make the team successful, including helping each other out if the need arises.

   The most common reason teams fail or fall short of their potential is lack of commitment from all members. Granted, it isn't easy to strike a balance between your own needs and those of your team. Teams that are always in agreement risk "groupthink" and fail to capitalize on their multiple perspectives and ways of doing things. On the other hand, teams in which everyone thinks independently and refuses to concede can get bogged down by "analysis paralysis," which makes it impossible to act as a team.

   To promote commitment, teams should make sure that all members get a chance to participate in decisions and feel they are being heard.

5. <u>A collaborative climate</u>. To work well together, members should have **defined roles, mutual accountability,** and **clear lines of communication.**

   Team members must trust each other. Trust emerges among team members when they are

   • honest (no secrets or cliques)

   • open (willing to share ideas and take suggestions)

   • consistent (behavior is predictable and reliable)

   • respectful

6. <u>Clear standards of excellence</u>. Standards should be measurable whenever possible. For example, if your team decides that participation is one mea-

sure of individual performance, you might keep track of attendance at meetings, frequency of communication, and success at meeting deadlines.

To make standards of excellence work for the team:

- Establish individual and team standards. **Individual standards** involve actively participating in meetings, listening to and considering the suggestions of others, delivering products in a complete form and on time, and helping teammates when needed. **Team standards** include focusing on the goal, making productive use of meeting time, keeping everyone informed on a timely basis, and having clear measurements for success.

- Hold yourself and each other accountable to team standards; go back to your team standards when the team starts "storming." One student said the most important advice she could offer to EDC students is "to make team standards": "I have found that team standards ensure that everyone on a team works and works hard. Whenever my team had a problem with someone not working like he should be, we simply looked at the team standards and explained that we all agreed on the standards."

- Don't let your team settle for less than its best. The team must continually raise its standards to stretch its performance.

7. <u>External support</u>. It is our job as faculty to make sure you have the resources to achieve your team's goal. Although resources are not endless, instructors will do their best to see that you have what you need and to make sure your goal is realistic and attainable. If team members are not receiving the support they need, the team should request a meeting with its instructors to address this issue constructively.

8. <u>Principled leadership</u>. Good leaders are honest, trustworthy, open to others' ideas, willing to do things differently, and faithful to your commitments. Leadership can be decided in a variety of ways. You can rotate leadership or have different leaders for different aspects of the project. What is important is that a team has leadership, not that it has a leader. All of you are leaders; that is part of the reason you are at Northwestern University. See Chapter 12 for a more detailed discussion of leadership.

11.3 WHAT CAUSES TEAMS TO FAIL

Although most teams in EDC perform well, each year a number of teams fail at teamwork. The most common causes of team problems are:

- Lack of unified commitment

  The most common problem for teams occurs when not everyone is committed to the team and its success. Usually this happens when some members are more concerned with their own goals and success than those of the team. As a result, they don't do their share of the work well, on time, or at all.

- Lack of collaboration

  When team communication is not open, honest, and respectful, collaboration breaks down. Members become secretive and cliquish, and destroy the most important element for teamwork: trust.

- Poor time management

  Teams often assume they will have all the time they need; they rarely do and then fall behind. Members need to manage their time to get the most done whenever they meet.

- Failure to get to know each other

  Many teams start off eager to solve the problem they have been presented with, but fail to get to know each other. Members need to know each other's skills, interests, and style of communication so they can work well together under pressure.

In the following chapters, you will learn specific methods for becoming a high performance team.

11.4 REFERENCES

Harrington-Mackin, D. (1994). *The team building tool kit: tips, tactics, and rules for effective workplace teams*. New York: Amacom.

Katzenbach, J. & Smith, D. (1993). *The wisdom of teams: creating the high performance organization*. Boston: Harvard Business School Press.

Larson, C. & LaFasto, F. (1989). Teamwork: *What must go right/what can go wrong*. Newbury Park: Sage.

O'Brien, M. (1995). *Who's got the ball? (and other nagging questions about team life)*. San Francisco: Jossey-Bass.

Robbins, H. & Finley, M. (1995). *Why teams don't work: what went wrong and how to make it right*. Princeton: Peterson's/Pacesetter.

Tuckman, B.W. (1965). Developmental sequence in small groups. *Psychological Bulletin*, 63, 384-399.