

PART I

Introduction

On May 21, 1968, the 3,500-ton nuclear attack submarine *Scorpion* reported its position as it returned from duty in the North Atlantic (Sontag 1999). That report was the last that was heard from the ship and its 99-man crew. On May 27th, when the *Scorpion* did not arrive at Norfolk when scheduled, they knew it was lost. All anyone knew about the *Scorpion* was the time and place of the last report and that it was going to Norfolk. The wreck could be anywhere in 500 square miles of deep ocean. Finding such a wreck on land would be tough enough, but 5 miles deep in the ocean, it was an incredible challenge.

John Craven got the job of finding the wreckage. John had been on the search for the *Thresher* five years earlier, and he had led the successful search for a hydrogen bomb lost in the Atlantic off Spain. He lined up oceanography and submarine design experts. He contacted submarine captains and torpedo specialists. He consulted with modeling experts, nuclear engineers, and anyone else who might know something useful. He talked to the U.S. Navy hydrographic office to see if any explosion had been detected in the *Scorpion's* vicinity at the time of its last report, and he checked on prior problems with equipment like that used on the *Scorpion*. He next had a model built of how a submarine would sink. However, to run the model, he had to know when the *Scorpion* sank; its depth, heading, and speed; and the rate of descent. To determine this, he had to deduce what caused the sub to sink.

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With this preparation, John worked with his informal team of experts to get some answers. Among other things, they concluded that the problem started with a battery explosion that caused a so-called “hot” torpedo. With a hot torpedo, the skippers said, they would immediately pull a 180 degree turn to deactivate the torpedo warhead. So the sub would have been headed east and not west when it sank. They also judged the speed, cruising depth, and timing of the fire and explosion that sank the *Scorpion*. When they ran the model and sent a deep-diving submersible to the spot 5 miles down in the Atlantic, the wreckage was 220 yards away.

Teams often produce amazing results like this. Well-formed and properly skilled and motivated groups of people produce much better results than any individual possibly could (Surowiecki 2004). The challenge for team leaders is to produce the conditions and provide the leadership and motivation to make such results possible. This book shows you how to meet this challenge.

The four chapters in Part I provide the foundation for everything that follows. Starting with a description of your job as team leader, these chapters cover leadership, the nature of teams, and motivation. They describe *what* to do to form and maintain a creative and effective team. The rest of the book addresses *how* to do it.

Chapter 1, *The Team Leader*, describes your job as team leader, what management expects from you, and what the team expects. It also summarizes your principal duties.

Chapter 2, *Leadership*, describes leadership, what differentiates leaders from managers, and the responsibilities of leadership.

Chapter 3, *Teams*, discusses the kind of team needed for development work. It introduces the self-directed team, describes why such teams are creative, and reviews your role in forming, launching, and leading such a team.

Chapter 4, *Team Motivation*, addresses the need for and principles of building and maintaining self-directed teams. It also describes how communication, commitment, and feedback affect team motivation.

References

Sontag, Sherry, and Christopher Drew. *Blind Man's Bluff*. New York: Harper Paperbacks. 1999.

Surowiecki, James. *The Wisdom of Crowds*. New York: Doubleday. 2004.

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The Team Leader

As team leader, you are responsible for a project and your job is to use your team to get the job done. While you are the leader for all of the people on the team, you may not be their manager. Leaders must often lead groups that do not report to them. For good leaders, this is rarely a problem: people like to be led; they don't like being managed. This chapter describes what management and the team expect of you, the things team leaders must do, the way team leaders must behave, and the team leader's primary job.

1.1 What Management Expects

As team leader, you are part of management. While this does not necessarily mean that you will have an office and an assistant or that you will control salaries or promotions, it does set you apart from the team members. The essential difference is that you are now expected to get work done by delegating to other people rather than doing it all yourself. Most new managers have trouble accepting the fact that their job is to lead the people who do the work, not to do the work themselves.

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While most team leaders who have been developers see nothing wrong with actually doing much of the work themselves, this is rarely a good idea and it can even damage your ability to be an effective leader. Even if you are the most skilled designer on the team, your job is to lead the team, not to be the lead designer. While you may have to provide detailed guidance on the design work, the best leaders show their team members how to do their jobs but do not step in and do the work themselves.

On a small team, you may decide to take on some of the team's roles and tasks yourself. But that must never be your primary concern and it must not distract you from the principal job of leading, guiding, supporting, and protecting the team. As far as management is concerned, your job is to use all of the team's resources to do this job. Everything else is secondary.

Some other things management expects of you are as follows.

- You will get this job done on the schedule and with the resources you have been given.
- The products you produce will meet both the stated and the implied requirements.
- You will keep management posted on your team's progress.
- You will inform management of any problems or issues in time for them to take corrective action.
- You will work cooperatively with all of the other parts of the organization.
- You will abide by all of the organization's rules, regulations, and standards.

1.2 What the Team Expects

While management's expectations are not very surprising, what your team members expect is much less well defined and often contradictory. Initially, the team members will have a collection of individual expectations. While these expectations could vary widely, there are a few common ones that team members almost always have of their leaders.

First, like everyone else, creative people share a basic need for job security. They want to keep their jobs and are understandably concerned about management's views of their performance. However, professionals' views of what makes a job interesting and rewarding often differ somewhat from management's priorities.

Second, what often is surprising to management is that the top priority for most development professionals is not about the product or the schedule. It is to work on a cohesive and cooperative team. In fact, even when the result is a total

business disaster, if the team provided a rewarding personal experience, the team members will view the project as a success (Linberg 1999).

Third, the team members like to be successful. While this expectation will vary considerably from member to member, most would like to finish the job on time and to produce a successful product.

Fourth, and this expectation often ranks ahead of finishing the job on time, many team members want to do technical work that is interesting and that satisfies their personal goals and aspirations. This expectation is often hard to satisfy since it can change quickly. While a developer might be very interested in tackling a new challenge, once he or she has successfully handled a similar task once or twice, such challenges are much less appealing. In fact, every engineering challenge is much like a mystery story. Once you know the ending, it is easy to lose interest.

1.3 Management Priorities Versus Team Interests

In many respects, management's priorities are very consistent with the team's basic interests. They want skilled and satisfied employees and they need a stable and reliable workforce. Where their interests differ, however, is on the importance of building a cohesive and rewarding team environment. While few managers would object to such an environment, they have not generally thought much about it or given it a very high priority.

Resolving these differing priorities is a key part of your job and it is what makes leading development work so interesting and rewarding. The reason is something that many team leaders do not appreciate until after they have led several projects: when teams are cohesive and cooperative, and when they find their work most rewarding and enjoyable, they also do the best work. And that is also when they are most likely to meet their committed schedules and to deliver quality products. Convincing management and the team of this fact will be one of your more interesting challenges. A principal objective of this book is to show you how to meet that challenge.

Leadership is demanding, particularly for development work, but it is also exciting to have the support and allegiance of a capable, energetic, and enthusiastic team. You will find that once you have built a truly cohesive and energetic team, you will enjoy the work every bit as much as they do. However, to build such a team you must maintain a clear and consistent focus on the team's goals, set an example for the kind of performance you want, maintain high standards, and be responsible for all of the team's work.

1.4 The Team's Goals

To use a sports analogy, athletic teams strive to win every game. This typically means scoring more points than the opposition. Every team member knows what the goal is and strives both to score points and to prevent the opposition from scoring. While many strategies contribute to successful games, the goal is always clear, and it is the focus for everything that the team does.

In development work, goals are equally important but they are rarely as clear. While the ultimate goal is usually understood by all, there is often considerable confusion about short-term goals. A significant part of your leadership job is to keep the team's goals clear and well defined and to ensure that every team member knows how his or her current tasks contribute to meeting that goal. In addition, you want all team members to work energetically to meet their goals. As each goal is met, you help the team to move on to the next immediate goals, continuing until you meet the final objective. So goals are important. They provide the focus, motivation, and energy that make teams successful.

While establishing goals may seem simple, one team I worked with took over three hours to agree on their goals. The problem was that this team had three developers, two testers, a requirements person, someone from the support group, and the team leader, and that their interests and objectives were widely divergent. The goals discussion helped them to understand each others' objectives and to agree on what was important.

1.5 Setting an Example

As leader, your actions are highly visible and your behavior is seen by your team as an example. Lee Iacocca once said, "The speed of the boss is the speed of the team." (Iacocca 1984). You cannot expect your team to be any more committed or to work any harder or more carefully than you do. To get a full day's work from your people, you must put in a full day's work yourself. If you are not concerned about a one-day schedule slip, you cannot expect your people to work hard to make it up. If you don't seem to care about quality, usability, planning, or any of the other key aspects of the job, you can't expect your people to be concerned about these things either. Your energy, enthusiasm, and discipline set an example; when you take shortcuts, forget about the process, or ignore quality, so will your team. So remember to lead by what you do as well as by what you say.

1.6 Standards

The goals define what you and your team are supposed to do, but you are also responsible for how well that job is done. This is a matter of standards. A **standard** is a required level of performance or attainment, a comparator for quality, or a measure of acceptability. In engineering, there are many ways to measure and assess the work, but you are the only one who can monitor the team's performance and ensure that it meets the relevant standards.

There is an old saying in engineering: "If it doesn't have to work, we can build it pretty quickly." The essence of engineering is quality. Poor quality work is expensive, produces unsuccessful products, and is unsatisfying. Poor quality work wastes your time and your team's time, and it wastes your organization's money. Most developers intuitively understand the importance of quality and many even know how to do quality work. However, they often are not sufficiently skilled, motivated, and disciplined and don't have the leadership required to consistently produce quality results.

One of the key standards for a development team leader is the ability to get quality work from his or her team. Motivate your people to do the job correctly and, if they don't do it properly the first time, get them to do it over until it is right. If you settle for sloppy, incomplete, or inaccurate work, a sloppy and lazy attitude will infect everything that the team does.

Even more important than the quality standard is the team's standard of cooperation and support. While this standard is rarely stated or explicit, it is the team members' cooperative and supportive behavior that makes the working environment rewarding, productive, and fun. As pointed out earlier, a top leadership priority must be providing a cohesive and cooperative working environment. Accomplishing this is almost entirely a matter of behavior: your behavior, your management's behavior, and every team member's behavior. So, setting and meeting behavioral standards for yourself, for your team members, and for your management must be your top priority.

1.7 The Leadership Attitude

The way you act, your feelings, and even your private opinions will influence your team. For example, if you doubt that your team can succeed in its mission, even if you say nothing about your concerns, this belief will subtly affect your behavior. Your team will probably detect your doubts. When your team members sense that you do not believe in them, they will almost certainly fail.

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If you do not believe that the team can succeed, sit down with the entire team and discuss your concerns. Don't tell them that you believe they will fail, but do get the risks and issues on the table and see if others share your concerns. Then, work with the team to figure out what must be done to succeed. Next, work with the team to make the required changes.

Your role is to motivate the team to do its utmost. To accomplish this, you must have confidence in all the members, believe that they can overcome the obstacles ahead, and trust that they are capable of producing extraordinary results. The most successful teams have energetic, enthusiastic, confident, and hard-driving leaders. If you don't have the required energy and drive, figure out what to change so that you do. If you can't see how to do that, either your team has a hopeless job or it needs a new leader.

1.8 Taking Responsibility

Finally, you are the boss. Your job is to get this project done and to use the resources that you have been given to do it. However, as boss, you are responsible for everything that the team does. You will get credit for the developers' achievements and successes, but you will also be blamed for their mistakes and failures. In short, as far as management is concerned, you *are* the team. This means that you had better make sure that the job is done correctly.

If the team is going down a blind alley, is wasting time on unproductive tasks, or is doing poor quality work, you must sooner or later answer for the consequences. Therefore, you had better make sure that the work is done properly. Doing this in a way that builds and sustains team motivation is not easy and there is no simple prescription that will fit all situations. However, there are some principles that can help you to define your own prescriptions. This book describes these principles and tells you how to apply them.

1.9 The Team Leader's Job

As team leader, you have several related jobs, and they must all be high priority. That is, there is no one job that you can ignore; if you omit any one, you and your team will fail. The three top priority jobs are as follows.

1. Deliver a quality product on the planned schedule and for its planned costs. As pointed out in Chapter 9, if you don't do that, you will have failed.

2. The second job for you and your team is to do quality work. Chapter 11 explains why the quality of your team's work governs the quality of your product and why product quality will determine the actual development schedule. Therefore, if you don't do quality work, you won't meet your obligation to deliver on the committed schedule.
3. The third job concerns high-performance teamwork. This subject is also discussed in Chapters 7, 15, 16, and 17. Teamwork is important because it drives team performance, which in turn governs the quality of the team's work. In short, without a smoothly operating, cohesive, and motivated team, you will not get the quality work that is required to deliver a timely or high-quality product.

As team leader, you have these three principal jobs and you must give them all top priority. Throughout the book, whenever I say that something must be your top priority, I am referring to one of these three top priorities.

1.10 Summary

This chapter describes the team leader's role, what management expects, what the team expects, and the basic responsibilities of the team leader.

Management expects you to use this team to get your assigned job done. This means that you must do the following.

- Get the job done on the schedule and with the resources you have been given.
- Produce products that meet their stated and implied requirements.
- Keep management posted on your team's progress.
- Warn management of any problems or issues in time to take corrective action.
- Work cooperatively with the other parts of the organization.
- Abide by all of the organization's rules, regulations, and standards.

While the team also expects these same things from you, it has other high priorities.

- That you will give them challenging and interesting work
- That you will recognize their achievements
- That you will foster and encourage a cohesive, cooperative, and productive working environment

Lastly, as a team leader, you must maintain a clear and consistent focus on the team's short- and long-term goals, set an example for how you expect this team to work, establish and maintain standards for how the team behaves and for the quality of its work, show confidence and enthusiasm for the team and its work, and feel and act responsible for the team and everything that it does.

Doing all of this in a way that motivates the team and all of its members will be your most important leadership challenge. The rest of this book describes how to do these things in a way that is rewarding for you and for the team and that produces the results management wants.

References

Iacocca, Lee, and William Novak. *Iacocca: An Autobiography*. New York: Bantam Books. 1984, p. 95.

Linberg, Kurt R. Software Developer Perceptions about Software Project Failure: A Case Study. *The Journal of Systems and Software*. Vol. 49 (1999), pp. 177–192.