CHAPTER 2

Performance and Productivity:

Team Performance Criteria and Threats to Productivity

Of the 56 active mines in Pennsylvania, 34 are located beside abandoned mines, many of which have since become filled with groundwater. Miner Mark Popernack's maps showed that he was at least 300 feet from a potentially dangerous, abandoned mine. The map was wrong. At nine p.m. on July 24, 2002, he was running his mining machine against a wall of coal in the Quecreek Mine in Lincoln, Pennsylvania. He and crew leader Randall Fogle first knew something was wrong when they heard running water. When there is only a weak wall between you and 60 million gallons of water—the equivalent of 70 Olympic-size swimming pools, an underground tsunami—you have only seconds to escape. Fogle's crew paddled through chest-high dirty water to find a way out. But the water rushed ahead of them and blocked every escape route. The team of nine made their way a few hundred yards uphill to the highest point of the mine—70 feet long, 18 feet wide, about 4.5 feet high—at the end of the tunnel. The water started to rise. From the outset, the men agreed to work as a team and tied themselves together so they would be found as a team if they lived—or if they drowned. During this time, things got so desperate that they wrote their last messages to family members. Then, the water stopped rising. They sat in the dark to preserve their headlights and talked. As a team, they kept each other warm by sitting back-to-back and snuggling together. They also took turns encouraging each other when someone became downcast. They rationed three gallons of distilled water and each man was allowed one bite of a single corned-beef sandwich. The men worked together in a fight for their lives, and, after 77 hours in the flooded mine, all nine were rescued (AP/Canadian Press, July 28, 2002; Watson & Leinwand, 2002).

The team of men in Pennsylvania surmounted a series of threats to their ability to achieve their clear and elevating goal: to stay alive, each and every one of them.

A careful examination of the dynamics involved reveal leadership, trust, cooperation, and problem solving. Most teams do not have to operate under such intense, omnipresent, life-threatening circumstances, but they do have to work together in a productive fashion for their companies to survive. Ideally, teams could benefit from a model or set of guidelines that would tell them how to organize and how to deal with inevitable threats to their goal achievement. Such a model would serve two purposes: description, or the interpretation of events so that managers can come up with an accu-
rate analysis of the situation, and prescription, or a recommendation on what to do to fix the situation.

In this chapter, we introduce a model of team performance. The model tells us the conditions that have to be in place for teams to function effectively and how to address problems with performance. The remainder of the chapter focuses on different parts of the model and provides choices to enact change.

AN INTEGRATED MODEL OF SUCCESSFUL TEAM PERFORMANCE

The best models of teamwork put the team in the context of the organization—that is, they deal with internal processes of teams, as well as how the team works with other units (see Hackman, 1987, 1990; Hill, 1995). Figure 2-1 is a descriptive-prescriptive model of team performance. It tells us what to expect in terms of team performance and suggests ways to improve the functioning of teams. As promised in Chapter 1, the model in Figure 2-1 is based upon empirical research. This chapter steps through each piece of the model.

The message of the model is actually quite simple. It asserts that the context of the team (referring to its internal processes and external constraints and opportunities) affects the team’s ability to do three essential things: perform effectively, build and sustain motivation, and coordinate people. These essential conditions are the causal determinants of the team’s performance—that is, whether it succeeds or fails. The remainder of the chapter is divided into three key sections corresponding to the three pieces of the model: team context, essential conditions, and team performance. We begin with the team context.

![Figure 2-1 Integrated Model of Teamwork]
Team Context

The team context includes the larger organizational setting within which the team does its work, the design of the team in terms of its internal functioning, and the culture of the team. High performance teams are not created exactly the same way across organizations. Moreover, there is no single best method for achieving team success. In part, this means that the team relies on the organization to provide resources, funding, individuals for membership, and so on. In Chapter 1, we stated that teams operate in a social context which shapes and confines behavior. As we discuss in Parts II and III, the team leader must not only think about the internal functioning of the team (i.e., ability, motivation, and coordination among team members), but also the external functioning of the team, including the organizational context, team design, and group norms.

Organizational Context

The organizational context includes the basic structure of the organization (e.g., lateral, hierarchical), the information system, the education system, and the reward system. It includes organizational policy and material and physical resources required to accomplish group tasks. Even if a team possesses spectacular skills, motivation, and coordination, lack of critical organizational infrastructure such as information, tools, equipment, space, raw materials, money, and human resources will hurt team performance. Teams ideally need a supportive organizational context—one that recognizes and welcomes their existence; responds to their requests for information, resources, and action; legitimizes the team’s task and how they are achieving it; and expects the team to succeed (Bushe, 1984).

Team Design

Team design refers to the observable structure of the team (e.g., manager-led or self-managing). It refers to the leadership style within the team, functional roles, communication patterns, composition of the team, and training of members. We examine team design in Part II of the book. In contrast to the team’s culture, which we describe next, the team design is the deliberate aspect of teamwork. Although the team’s culture evolves and grows and is not under the direct control of a manager, the design of a team is a deliberate decision or choice made by managers; even though it is true that some managers may not realize that by not making a choice or leaving teamwork up to natural forces, they are, in fact, designing their team. We urge the leaders and managers of teams to carefully think through their options when it comes to team design.

Team Culture

Culture is the set of shared meanings held by team members that make teamwork possible. In contrast to team design, which is often deliberate and explicit, team culture includes the unstated, implicit aspects of the team that are not discussed in a formal fashion, but nevertheless shape behavior. Member roles, norms, and patterns of behaving and thinking arise from team design and the structure and system of the organization in which the team operates. One way in which teams develop their culture is by imposing ways of thinking and acting that are considered acceptable. A norm is a generally agreed upon set of rules that guides behavior of team members. Norms differ from organizational policies in that they are informal and unwritten. Often, norms are so subtle that team members are not consciously aware of them. Team norms regulate
key behaviors such as honesty, manner of dress, punctuality, and emotional expression. Norms can either be prescriptive, dictating what should be done, or proscriptive, dictating behaviors that should be avoided.

Norms that favor innovation (Cummings & Mohrman, 1987) or incorporate shared expectations of success (Shea & Guzzo, 1987) may foster team effectiveness. Companies that report success in applying work teams have had similar cultures, often guided by philosophies of top managers (Galagan, 1986; Poza & Marcus, 1980; Walton, 1977). Often, culture is more a property of work units than the entire organization. This means that certain norms may exist in teams but not the larger organization. For example, two teams in the Western Electric Company’s Hawthorne Works developed highly different norms, even though they were in the same shop. One group spent much time in conversation and debate, played games involving small bets, and maintained uniformly high output. In contrast, the other group traded jobs (a prohibited activity), engaged in joking, and maintained uniformly low output (Homans, 1950).

Norms develop as a consequence of precedent. Whatever behaviors emerge at a team’s first meeting will usually define how the team operates—just look at the consistency of seating arrangements in business meetings. Norms also develop because of carryovers from other situations or in response to an explicit statement by a superior or coworker. They may also result from critical events in the team’s history. Robert Henderson capitalized on the absence of norms when he started a team to build the most powerful commercial jet engine in history. Henderson says, “My outlook was, ‘let’s push the envelope as far as we can at the start, because it’s the only chance we’ll get to do that. What you establish is what gets perpetuated. Starting a culture is so much easier than changing a culture’” (Fishman, 1999, p. 188). We cover norms in greater detail in Part II of the book.

**Essential Conditions for Successful Team Performance**

Obviously, there are a number of factors that must be in place for a team to be successful (Hackman, 1987; Steiner, 1972). The team members must

1. Bring adequate knowledge and skill to bear on the task.
2. Exert sufficient motivation and effort to accomplish the task at an acceptable level of performance.
3. Coordinate their activities and communication.

Next, we discuss each of these essential conditions in greater detail.

*Knowledge and Skill*

For teams to perform effectively, members must have the requisite ability, knowledge, and skill to perform the task. This requires that the manager appropriately match people with the right skills to the tasks at hand and to the organizational human resource structure itself.

**Team Member Skills** One consistent predictor of team effectiveness is team members’ average cognitive ability. For example, the average of team members’ cognitive abilities in military tank crews (Tziner & Eden, 1985), assembly and maintenance teams (Barrick, Stewart, Neubert, & Mount, 1998), and service teams (Neuman & Wright, 1999) directly predicts effectiveness. Conscientiousness, as a trait, also predicts effective team performance in assembly and maintenance teams (Barrick et al., 1998) and service teams (Neuman, Wagner, & Christiansen, 1999; Neuman & Wright, 1999).
Moreover, an effective team needs people not only with the technical skills necessary to perform the work, but also with interpersonal skills, decision-making skills, and problem-solving skills. Broadly thought of as emotional intelligence, interpersonal skills are critical for effective management (Goleman, 1995). Perhaps this is because executives spend 78 percent of their working time interacting with others, and as much as 50 percent of that time in interactions with subordinates (Mintzberg, 1973). Peter Grazier of Teambuilding Inc. says, “Teams have told us that if they had to do it over again, they would have more of the people skills up front. They don’t struggle with the technical stuff. They tend to struggle with the people skills” (Stroznik, 2000).

Subordinates reporting good relationships with superiors are better performers, assume more responsibility, and contribute more to their units than those reporting poor relationships (Liden & Graen, 1980). In their book, First, Break All the Rules, Buckingham and Coffman (1999) report on the results of a blockbuster survey analysis of more than five thousand managers. The key determinant of whether people stay in their jobs can be strongly predicted by whether they believe that their managers care about them. Thus, building and nurturing relationships is an important skill for leading highly effective teams.

Moreover, there appears to be an intimate connection between social behavior and intelligence. For example, people who view themselves as independent, or not attached to a team or group, actually show significant deficiencies in intelligent thought, including IQ and standardized test performance (Baumeister, Twenge, & Nuss, 2002).

How do you know whether you have an effective working relationship with someone? As a start, you can consider where your relationship stands on each of the dimensions listed in Table 2-1. If the majority of the dimensions of your relationship are listed on the right-hand side, this means that an effective relationship has developed.

Anyone who is a member of a team fully understands that not all of the work of teams is accomplished in the physical presence of the other group members. Teams constantly make decisions about what will be done as a team, or alone. It is important to understand what types of work are best performed as a team, in the presence of a team, or independently. As a general principle (that we discuss in detail in Chapter 8), teams are superior to individuals in terms of analyzing information, convergent thinking, and assimilating information. However, teams are worse than individuals in terms of divergent thinking.

Moreover, as an entity, teams can create performance pressure and performance anxiety that can hinder the performance of well-intentioned team members. For experts, the physical presence of the team can be a great benefit, because the presence of others increases motivation to perform and the expert knows the skill sets required. However, for people who are not quite experts, the presence of others can hinder performance. For example, Barb Linquist, a swimmer at the U.S. Open, “choked” when she heard the announcer reciting the accomplishments of her competitors. “I was next to a swimmer that I had read about. I got really flustered by hearing her accomplishments. . . . I didn’t concentrate on my race and . . . I finished last” (Hudepohl, 2001). Choking under pressure occurs when a person’s performance declines despite incentives for optimal performance (Baumeister, 1984).

**Learning Curves and Expertise** The physical presence of other people is stimulating at a very primitive, innate level. We are born with the tendency to become aroused in the presence of others; it is part of our genetic inheritance. This greater arousal or
### TABLE 2-1: Summary of Dyadic Dimensions along Which Relationships Develop

<table>
<thead>
<tr>
<th>From</th>
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| **Openness and Self Disclosure**<sup>a, b, c, d, f</sup>  
Limited to “safe,” socially acceptable topics | Disclosure goes beyond safe areas to include personally sensitive, private, and controversial topics and aspects of self |
| **Knowledge of Each Other**<sup>b, d, e, f</sup>  
Surface, “biographic” knowledge: Impressionistic in nature | Knowledge is multifaceted and extends to core aspects of personality, needs, and style |
| **Predictability of Other’s Reactions and Responses**<sup>b, d, e, f</sup>  
Limited to socially expected or role-related responses, and those based on first impressions or repeated surface encounters | Predictability of the other’s reactions extends beyond stereotypical exchange and includes a knowledge of the contingencies affecting the other’s reactions |
| **Uniqueness of Interaction**<sup>a, b, e</sup>  
Exchanges are stereotypical, guided by prevailing social norms or role expectations | Exchanges are idiosyncratic to the two people, guided by norms that are unique to the relationship |
| **Multimodality of Communication**<sup>a, b</sup>  
Largely limited to verbal channels of communication and stereotypical or unintended nonverbal channels | Includes multiple modalities of communication, including nonverbal and verbal “short-hands” specific to the relationship or the individuals involved; less restrictiveness of nonverbal |
| **Substitutability of Communication**<sup>a, b</sup>  
Little substitution among alternative modes of communication | Possession of and ability to use alternative modes of communication to convey the same message |
| **Capacity for Conflict and Evaluation**<sup>a, b, c, e</sup>  
Limited capacity for conflict; use of conflict-avoidance techniques; reluctance to criticize | Readiness and ability to express conflict and make positive or negative evaluations |
| **SpONTaneity of Exchange**<sup>a, b, c</sup>  
Interactions tend to be formal or “comfortably informal” as prescribed by prevailing social norms | Greater informality and ease of interaction; movement across topical areas occurs readily and without hesitation or formality; communication flows and changes direction easily |

Stimulation acts as a motivator on behavior. Whatever we might be doing, we do with more “gusto” when in the presence of other people, especially our team. However, there is a catch: The presence of other people enhances performance for well-learned behaviors or behaviors that are almost second nature. Thus, greater arousal or stimulation enhances our performance on tasks that are well-learned, but hinders our performance on novel tasks. The presence of other people triggers one of two responses: challenge (if someone is an expert) or threat (if someone is not an expert). Moreover, the cardiovascular responses of people while they perform a well-learned task in the presence of others provide physiological evidence that experts feel challenged—increased cardiac response and decreased vascular resistance (Blascovich, Mendes, Hunter, & Salomon, 1999). However, if people are performing an unlearned task in the presence of others, they go into “threat mode”—increased cardiac response and increased vas-
TABLE 2-1 Summary of Dyadic Dimensions along Which Relationships Develop (continued)

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<tr>
<th>From</th>
<th>To</th>
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<tr>
<td><strong>Synchronization and Pacing</strong>&lt;sup&gt;a&lt;/sup&gt;,&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Speech and nonverbal responses become synchronized; flow of interaction is smooth; cues are quickly and accurately interpreted</td>
</tr>
<tr>
<td>Except for stereotyped modes of response, limited dyadic synchrony occurs</td>
<td></td>
</tr>
<tr>
<td><strong>Efficiency of Communication</strong>&lt;sup&gt;a&lt;/sup&gt;,&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Intended meanings are transmitted and understood rapidly, accurately, and with sensitivity to nuance</td>
</tr>
<tr>
<td>Communication of intended meanings sometimes requires extensive discussion; misunderstandings occur unless statements are qualified or elaborated</td>
<td></td>
</tr>
<tr>
<td><strong>Mutual Investment</strong>&lt;sup&gt;b&lt;/sup&gt;,&lt;sup&gt;g&lt;/sup&gt;</td>
<td>Extensive investment in other’s well-being and efficacy</td>
</tr>
<tr>
<td>Little investment in the other except in areas of role-related or situation interdependencies</td>
<td></td>
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<sup>c</sup>Jourard, 1971.  
<sup>d</sup>Hinde, 1979, pp. 133-134.  
<sup>g</sup>Secord & Backman, 1964.


...cicular resistance. Consider, for example, what happens to pool players when they are observed by others in pool halls (Michaels, Brommel, Brocato, Linkous, & Rowe, 1982). Novice players perform worse when someone is watching. In contrast, expert players’ games improve dramatically when they are observed. Similarly, joggers speed up on paths when someone is watching them and slow down when no one appears to be in sight (Worthingham & Messick, 1983). Additionally, people giving impromptu speeches perform worse in the presence of others than when alone.

**Social Facilitation versus Social Inhibition** Social facilitation is the predictable enhancement in performance that occurs when people are in the presence of others. Social inhibition occurs when people are the center of attention and they are concerned with discrepancies between their performance and standards of excellence. Thus, team leaders will actually make the performance of their team suffer if they apply performance pressure to people who are not yet expert.

The key question for team players is how to ensure that their behavior is the optimal response. There are two routes. Expertise is one way: experts are trained to focus on what...
matters most. *Practice and rehearsal* is another strategy: it modifies the behavioral response hierarchy, so that the desired response becomes second nature. However, being an expert does not completely protect people from choking. Just look at professional players on sports teams. In the championship series in professional baseball and basketball, the home team is significantly more likely to lose the decisive game than it is to lose earlier home games in the series (Baumeister & Steinhilber, 1984). Why? Remember that expertise is the result of overlearning. The pressure to perform well causes people to focus their attention on the process of performing—the focus of attention turns inward. The more pressure, the more inwardly focused people become. The problem is that when people focus on what are overlearned or automated responses, this actually interferes with performance (Lewis & Linder, 1997). As an example, consider shoelace tying. Most adults are experts at tying their own shoes. This comes from years of practice. Most people can carry on conversations without thinking about the process of shoelace tying when they are engaged in the act. Now, suppose that you had to tie your shoes onstage in front of an audience that was watching and timing you. You might become so preoccupied with the process that you would actually perform worse than if you were not under pressure. In short, hyper-self-awareness interferes with the ability to perform.

It is best to avoid trying to learn difficult material or perform complex tasks in groups, because peer pressure will obstruct performance. However, if team members are experts, they will likely flourish under this kind of pressure. Practice not only makes perfect, but it also makes performance hold up under pressure. Not all teamwork needs to be done in a team setting; sometimes it is beneficial to allow team members to complete work on their own and bring it back to the group.

**Flow: Between Boredom and Choking**  At a precise point in between boredom with a task and intense pressure is a state that psychologist Mihaly Csikszentmihalyi calls *flow*. According to Csikszentmihalyi, flow is a psychological state in which a person is highly engaged in a task—so interested, in fact, that the person loses track of time and the process of engaging the task is its own reinforcement. In his book, *Finding Flow: The Psychology of Engagement with Everyday Life* (1997), Csikszentmihalyi gives lots of examples of people in flow states, ranging from marathon runners to everyday gardeners. The flow concept also applies to teamwork. According to Jean Lipman-Blumen and Harold J. Leavitt, coauthors of *Hot Groups* (1999), people on “hot teams” don’t view their work as work, they view it as fun. They’re addicted to it. They don’t think about anything else. They want to talk about it, think about it, and do it all day long—and they want to be around people who feel the same way.

**Stress versus Challenge**  As anyone on a team knows, there is a fine line between challenge and stress. For example, people who strive to accomplish difficult goals may perceive their goal as a challenge, rather than a threat, and perform quite well. Stressful tasks may be challenging or threatening. Challenge is experienced when there is an opportunity for self-growth with available coping strategies, whereas threat is experienced when the situation is perceived as leading to failure with no available strategies for coping. For example, in one investigation, people evaluated companies’ stocks and had to make decisions quickly and accurately (Drach-Zahavy & Erez, 2002). The same level of goal difficulty impairs performance and adaptation to change when people appraise the situation as a threat, but improves adaption to change when participants appraise the situation as a challenge (Drach-Zahavy & Erez, 2002).
Motivation and Effort

It is not enough for members of a team to be skilled, they also must be motivated to use their knowledge and skills to achieve shared goals. Contrary to popular opinion, motivation is not strictly based on external factors, such as reward and compensation. Motivation comes both from within a person and from external factors. People by nature are goal directed, but a poorly designed team or organizational environment can threaten team dedication and persistence. At certain times, members of a team can develop a defeatist attitude: 'They may feel that their actions do not matter, that something always goes wrong to mess things up (e.g., a sports team on a losing streak), or that their input is not listened to. This can also happen if team members feel they are unable to affect their environment or cannot rely on others. (As a case in point, consider Sidebar 2-1). The belief that the group has in themselves, also known as group

Sidebar 2-1. Game of Envelopes and Money
Consider the “envelopes and money” game (Murnighan, 1992). In this game, an envelope is passed around a room, and team members can choose to donate money to the envelope. The instructor (or leader) states that if a certain amount of money is collected, all group members will be given a bonus of $10, but that their original donation will not be returned, as it is anonymous. Theoretically, it is possible for all group members to make a positive profit, but this requires trust on the part of members that all others will contribute. Inevitably, the group donations fall short of what is needed to gain bonuses.

potency, is a significant predictor of actual performance (Shea & Guzzo, 1987). For example, in one investigation, officer cadets completed a task in teams. Group potency, or “thinking we can,” contributed to group performance over and above pure measures of cognitive ability (Hecht, Allen, Klammer, & Kelly, 2002).

Social Loafing A French agricultural engineer named Max Ringelmann was interested in the relative efficiency of farm labor supplied by horses, oxen, machines, and men. In particular, he was curious about their relative abilities to pull a load horizontally, such as in a tug-of-war. In one of his experiments, he had groups of fourteen men pull a load and measured the amount of force they generated; he also measured the force that each man could pull independently. There was a linear decline in the average pull per member as the size of the rope-pulling team increased. One person pulling on a rope alone exerted an average of 63 kilograms of force. However, in groups of three, the per-person force dropped to 53 kilograms, and in groups of eight, it plummeted to only 31 kilograms per person—less than half of the effort exerted by people working alone (Ringelmann, 1913; summarized by Kravitz & Martin, 1986). This detailed observation revealed a fundamental principle of teamwork: People in groups often do not work as hard as they do when alone. This is known as social loafing.

Team performance increases with team size, but the rate of increase is negatively accelerated; the addition of new members to the team has diminishing returns on productivity. Similar results are obtained when teams work on intellectual puzzles (Taylor & Faust, 1952), creativity tasks (Gibb, 1951), perceptual judgments, and complex reasoning (Ziller, 1957). Social loafing has been demonstrated in many different cultures,
including India (Werner, Ember, & Ember, 1981), Japan (Williams & Williams, 1984), and Taiwan (Gabrenya, Latané, & Wang, 1983). The general form of the social loafing effect is portrayed in Figure 2-2.

**Free Riders** Many team leaders have asked: Is my team working as hard as it can? Their suspicions may be correct: People's motivations often diminish in a team. Also, the larger the team, the less likely it is that any given person will work hard. For many team tasks, there is a possibility that others can and will do most or all of the work necessary for the team to succeed. This means that free riders benefit from the efforts of others while contributing little or nothing themselves. Team members are sensitive to how important their efforts are perceived to be. When they think their contributions are not going to have much impact on the outcome, they are less likely to exert themselves on the team's behalf. How do teams react once a free rider has been detected? As a general principle, people abhor free riders. Team members want equitable working arrangements. Indeed, a strong work ethic holds in most teams, with greater rewards coming to those who work harder. If someone is not working as hard, the other team members might attempt to reduce that person's reward (e.g., not allow someone to put his name on the group report if he has not contributed) or reduce their own inputs (i.e., the other members of the group might stop working hard). Obviously, this kind of behavior by one person can undermine the effectiveness of the team on several dimensions. However, the company itself bears the greatest cost from this kind
of behavior. When everyone stops working hard in retaliation against someone else’s bad conduct, ultimately, the work does not get done or done well. Perhaps this is why some companies charge people $10 per minute for every minute they are late to a meeting. Perhaps this is also why some companies endow each person with gold Krugerrands that they can “toss” to someone in a meeting when a team member contributes something really important. These types of whimsical, but meaningful, behaviors emphasize the team’s core values: showing up and contributing. The leaders of these teams correctly recognize that free riding and social loafing, if unchecked, can be a serious threat to team productivity.

**Three Main Causes of Free-riding** Why do people loaf and free ride? Three reasons: diffusion of responsibility, a reduced sense of self-efficacy, and the “sucker effect.”

**Diffusion of Responsibility** In a team, a person’s effort and contributions are less identifiable than when that person works independently. This is because everyone’s efforts are pooled into the team enterprise and the return is a function of everyone’s contribution. It is difficult (or impossible) to distinguish one person’s contribution from another. At an extreme, this can lead to deindividuation—a psychological state in which a person does not feel individual responsibility. As a result, the person is less likely to perform or contribute. Consider, for example, a dramatic, real-world illustration. A woman named Kitty Genovese was on her way home from work late one evening in New York (based upon Latané & Darley, 1968). She was attacked by a man and stabbed to death. Thirty-eight of her neighbors in the apartment building where she lived witnessed the attacker approach and slay her; however, not a single person so much as called the police.

Upon hearing this story, most people are horrified and attribute the neighbors’ lack of assistance to social and moral decay. We might look at this, however, from another perspective: People are more likely to free ride as the number of others in the group increases. Perhaps this is one reason why many people employed by companies that regularly committed accounting fraud did not blow the whistle. Observers in Kitty Genovese’s apartment building who knew that others were also watching felt less responsible and so less inclined to intervene. In effect, they told themselves, “Someone else has probably already called for help.” Why inconvenience yourself when it is likely the woman will receive help from someone else? Of course, if everyone thinks this way, the probability that the victim eventually gets help decreases dramatically.

**Dispensability of Effort** In some cases, it is not diffusion of responsibility that hinders people from contributing to a team effort, but rather the feeling that our contributions will not be as valuable, efficacious, or worthwhile as they might be in a smaller group. In short, we believe our contributions will not be sufficient to justify the effort. Consider, for example, the problem of voting. Most everyone agrees that voting is a good practice. Why then did only 51 percent of the eligible U.S. population turn out to vote during the presidential election of 2000? People may feel that their vote has such a small impact on the outcome that voting is not worthwhile. Similarly, team members may feel they lack the ability to positively influence a team’s outcome. Indeed, when the least capable member of a team feels particularly indispensable for group success, the group actually experiences a sort of “social striving” effect—that is, working harder to achieve their goals (Hertel, Kerr, & Messe, 2000).
Sucker Aversion  A common concern held by team members is whether someone will be left doing all of the work and getting little or no credit (Kerr, 1983). Because everyone wants to avoid being taken advantage of, team members hedge their efforts and wait to see what others will do. The problem is that when everyone does this, no one contributes. When people see others not contributing, it confirms their worst fears. The sucker effect becomes a self-fulfilling prophesy.

Suggestions for Enhancing Successful Team Performance  Suppose you are managing a team that processes insurance claims. Prior to the formation of teams, you measure average claim processing time and find it to be three days. After forming the teams, you find the average has increased to about nine days. Has your team fallen victim to social loafing? Your upper-division manager advises you to immediately dismantle the teams. Someone else tells you that the company’s incentive system needs to be overhauled. What do you think?

Before you dismantle the teams or completely restructure the company’s entire pay structure, consider the following strategies:

Increase Identifiability  When each member’s contribution to a task is displayed where it can be seen by others (e.g., weekly sales figures posted on a bulletin board or e-mail), people are less likely to loaf, or slack off, than when only overall group (or companywide) performance is made available (Kerr & Bruun, 1981; Williams, Harkins, & Latané, 1981). Whole Foods subscribes to this line of thinking by collecting and distributing vast amounts of performance data throughout all levels of the organization. Sensitive figures on store sales, team sales, profit margins, and even salaries are available to every person in every location. It collects and distributes information to an extent that would be unimaginable almost anywhere else. In fact, the company shares so much information so widely that the Securities and Exchange Commission (SEC) has designated all six thousand five hundred employees “insiders” for stock-trading purposes (Fishman, 1996). However, the key is not identifiability per se, but rather, the evaluation that identifiability makes possible (Harkins & Jackson, 1985; Harkins & Szymanski, 1987).

Promote Involvement  Social loafing may be eliminated if the task is sufficiently involving (Brickner, Harkins, & Ostrom, 1986), attractive (Zaccaro, 1984), or intrinsically interesting (Petty, Cacioppo, & Kasmer, 1985). When the task is challenging and interesting, people feel more motivated to perform. Generally, when tasks are highly specialized and routinized, monotony sets in; in contrast, when team members are responsible for all pieces of a work product or service, they feel more responsibility for the work. This is perhaps why many companies, such as IBM Credit Corporation, restructured into teams that handle all aspects of a credit application. The walk-through time in IBM Credit Corporation for a single credit application decreased from nine days to two days. This is largely because teams of individuals feel personally responsible for a particular client in a way that they did not feel before the restructuring. According to Jeff McHenry, director of Executive Development at Microsoft, “The single most important factor is that effective teams have a clear goal. They work toward something. And everybody understands what the goal is. We tend to hire people who are achievement-oriented and results-driven. When they don’t have a goal, they tend to flounder because they have nothing to work toward. When they do
have a goal, their achievement orientation takes over—and great things happen” (Anonymous, 1996).

Challenging tasks may be particularly important for teams composed of people who are good at what they do or who believe that they are superior. It is a well-known psychological fact that most people regard themselves to be superior on a number of intellective and social tasks. For example, the majority of people regard themselves to be better-than-average drivers (Svenson, 1981); they also believe that they are more likely to have a better job, and so on (Taylor & Brown, 1988). Known as the positive illusion bias, unwarranted beliefs in one’s own superiority can wreak havoc in teams. Huguet, Charbonnier, and Monteil (1999) theorized that work teams composed of people with strong motives to view themselves as distinctly more talented than others are likely to suffer from social loafing when the task is unchallenging. In particular, Huguet et al. suggest that men and people from individualistic cultures are most likely to have such motives. People who see themselves as above average would be the most likely to engage in social loafing, because they have a false sense of the value of their contributions. Indeed, people who feel uniquely superior expend less effort when working collectively on easy tasks. However, they actually work harder when the task is challenging.

**Reward Team Members for Performance** Team members should recognize and reward contributions by individuals. For example, in many MBA programs, students do as much as 50 percent of their work in teams and groups, thereby building essential teamwork skills. In such courses, groups receive a group grade, which might encourage social loafing. However, in many courses, students are also given 100 points to allocate among team members to reflect the contributions made by others. As one professor tells her students, “I don’t give Cs in this course, but you do!”

Rewarding team members need not mean large financial incentives: Symbolic rewards are often more powerful than money. Sales managers may strategically use symbolic rewards, such as high-performer sales clubs or plaques and ceremonies honoring exemplary service, to deliver messages to the sales force. These can be used to underscore the values of the sales organization and help shape salesperson behavior.

It is important for team members to feel appreciated and acknowledged by the members of their team, as well as the organization. There can be serious consequences if people feel they are not valued and respected, so much so that people are more likely to cheat and steal from the organization when they feel they have been unfairly treated (Greenberg, 1988). For example, when people feel that they are respected by their superiors, they are more likely to contribute to the group’s welfare (De Cremer, 2002). Feeling respected is most important for members who feel least included (i.e., peripheral members).

**Strengthen Team Cohesion** People worry a lot about being a sucker, especially when the norms of a team are created early on and people get labeled. Leaders can demonstrate trust by putting themselves in a vulnerable position. By showing vulnerability and requiring trust, leaders show they trust the team and set that expectation. Cohesive teams are less inclined to loaf (Williams, 1981).

**Increase Personal Responsibility** The buck stops with the team. When teams set their own performance goals, they are less likely to loaf (Brickner, Harkins, & Ostrom, 1986).


**Use Team Contracts** Ideally, at the outset of teamwork, members should develop a written statement of objectives and practices. This should be written, posted, and perhaps most important, revisited. According to Katzenbach and Smith (1993), the best teams in their extensive study invest a tremendous amount of time and effort exploring, shaping, and agreeing on a purpose that belongs to them collectively and individually. This “purposing” activity continues through the life of the team. In contrast, failed teams rarely develop a common purpose. The best teams also translate their common purpose into specific performance goals.

**Provide Team Performance Reviews and Feedback** Oftentimes, people don’t realize that they are not doing their fair share. It is common practice for people to receive regular performance feedback from their supervisors. Why shouldn’t we do the same for teams? As we noted in Chapter 1, team leaders often fail to manage their team as an entity, preferring to manage the individual relationships with each team member. We believe that team leaders should meet with the entire team on a regular basis to talk about how the team is performing. And the communication should be double-loop, such that the team leader is asking questions in addition to providing feedback.

**Maintain the “Right” Staffing Level** As the team gets larger and larger, personal contributions to the team become less important to the team’s chances of success (Kerr, 1989; Olson, 1965). In short, as team size increases, feelings of anonymity increase.

Suppose that you implement the preceding steps, and your team’s performance is still less than what you think is possible. What should you do? Consider the third source of threats to productivity: coordination problems.

**Coordination Strategies**

Ability and motivation are essential and desirable, but insufficient for effective team functioning. A team needs to coordinate the skills, efforts, and actions of its members so as to effectively enact team strategy. For example, distributed.net is a coordinated team of computer programmers and enthusiasts. Armed with tens of thousands of computers linked over the Internet, distributed.net solved the Data Encryption Standard (DES) Challenge II sponsored by RSA Data Security, Inc. The goal of the challenge was to break the fifty-six-bit security code provided by the government’s DES and recover the secret key used to encrypt messages. As the PR Newswire reported on February 26, 1998:

The distributed.net team met the challenge in 39 days, less than half the 90 days of computing time it took the original challenge to be solved by a university team. The distributed.net organization utilized the idle time of computers throughout the world to solve particularly arduous computing tasks. For the DES Challenge II, the team managed to coordinate the efforts of 22,000 participants throughout the world, linking together over 50,000 computers to power through 72 quadrillion possible keys. One by one, the computers crunched through all possible combinations until the winning key was found to decode the message encrypted with the DES algorithm.

This feat was possible because the team was highly coordinated.
Coordination problems must be surmounted for a team to be effective. Team members may be individually good at what they do, but unless they coordinate their activities, they will not meet their team objectives.

**Coordination** is the combined synchronization of the strategies of all members. Teams vary in terms of their coordination or synchrony. Consider a football team—the slightest misunderstanding about a play can lose the game. Another example is a rowing team or a dance troupe—unless everyone is synchronized, they cannot achieve their performance goals, no matter how skilled and motivated the individuals. This is why teams often sing or chant to synchronize their movements and actions. Sir Adrian Cadbury, former chairman of Cadbury Schweppes, rowed in the 1952 Olympics. “Sir Adrian took more than the lesson of timing from the world of rowing when he entered corporate life. ‘What has always been important to me is the team—rowing taught me that. More importantly, trust.’ Rowing is certainly a sport that places more emphasis on team harmony than others—there’s less scope for those with individual flare to shine. ‘The beauty of racing in a crew is that you learn that any victory is the combined effort of everyone. In the same way company results reflect the performance of the whole firm.’” (Phelps, 1996, p. 110).

Coordination problems increase with team size and do so in an accelerating manner. The number of ways in which a team can organize itself (e.g., divide responsibilities, combine contributions, coordinate efforts) increases rapidly as the team gets larger (Kelley, 1962).

Most of the threats to team productivity are attributable to coordination problems, but most managers, used to thinking in terms of ability and motivation, fail to realize this—an example of the misattribution problem discussed in Chapter 1.

Most people take coordination and communication in teams for granted. In other words, they do not anticipate that their handwriting will be misread by a teammate or that a fax won’t transmit. People have a biased sense about the clarity of their own messages and intentions. They may not be as clear as they think they are. The problems in communication and coordination are compounded when the medium of communication is less rich, such as in e-mail, fax, and videoconferencing (a topic discussed in Part III on global teamwork).

What are some practical steps to ensure better coordination of efforts within teams?

**Use Single-Digit Teams** Most teams are too large. As the number of people on a team increases, it is that much harder to schedule meetings, move paperwork, and converge on ideas. The incidence of unanticipated failure increases. As a rule of thumb, teams should have fewer than ten members and just enough to cover all needed skill areas.

**Have an Agenda** Members need a clear sense of where they are going and how they will get there. If the team does not know where it is going, its efforts will be fragmented and members will waste time and energy.

**Train Team Members Together** Team members who train together, as opposed to separately, work more effectively. This is because they have an opportunity to coordinate their strategies. A side benefit of training team members together is that training provides the opportunity to build trust.
Practice  Teams are low on the learning curve when the team members begin to work with one another. A team might be motivated and highly skilled, but naive in terms of communicating with one another in a highly synchronized and coordinated fashion. Teams require more practice than do individuals.

Minimize Links in Communication  For most tasks, it is better for team members to directly communicate rather than going through others (gatekeeping).

Set Clear Performance Standards  Every team needs clear performance standards. In the absence of performance standards, it is impossible to evaluate the effectiveness of a team. The most common means by which people are evaluated by organizations is through a performance appraisal, which we discuss in detail in the next chapter. Many performance appraisals are routine and occur on a regular basis. In the best of circumstances, they are objective, based upon hard facts and deliverables. People receive clear and informative feedback about what they are doing well and what they need to work on. We’ve argued that performance appraisals should be used when evaluating team performance.

How does a manager know whether a team is performing effectively? If this question is hard to answer, then it will be difficult to pull together a high-performance team and diagnose problems before they threaten team performance. Furthermore, even if you happen to be in the fortunate position of working on a successful team, unless you understand what makes your team effective, you may make the wrong choices or be indecisive at inopportune times.

Team performance evaluation is more difficult than individual performance evaluation. Teams are harder to track, and higher turnover can blur the relationship between the actions that people take and the results achieved by the team. Nevertheless, it is still possible to do a rigorous performance evaluation on teams, just as it is with individual employees. In this chapter, we consider what factors are important to consider in assessing team performance. In the next chapter, we deal with the thornier issue of how to measure performance and structure the incentive system.

Performance Criteria

What are the criteria by which we should evaluate team effectiveness? By performance criteria, we mean those factors used to evaluate the success or failure of a team effort. Hackman (1987) identified three key criteria in his model of group effectiveness: productivity, cohesion, and learning. To this, we add a fourth criterion, integration, suggested by Gruenfeld (1998).

Productivity

Productivity is arguably the most important measure of team success. Did the team achieve its goals? According to LaFasto and Larson (2001), the single most important determinant of team success is whether the team has a clear and elevating goal. Team productivity requires that the team have a clear goal and adapt accordingly as new information arrives, goals change, and organizational priorities shift. This also holds true for changes in the marketplace—for example, the entrance or exit of a competitor or a stock market plunge. There are many different dimensions to productivity: What was the team’s output? How does the output correspond to the team’s original goals?
How quickly or timely were results achieved? How effective was the outcome? What is the correspondence between the team output and a measurable accomplishment (such as improved market share, new product development, etc.) by the organization? Efficiency is also important. If the team’s goals were accomplished, at what cost did this happen? Was it worth it? The productivity of a team is highly correlated with its goals, as well as the ability of the team to adapt, change, and accommodate the goals in the face of new information, changing organizational priorities, and the changing marketplace.

The productivity criterion asks whether the team’s output meets the standards of those who have to use it—that is, the end user. It is not enough that the team is satisfied with the output or even that it meets some objective performance measure. If the team’s output is unacceptable to those who have to use it, the team is not effective.

For these reasons, it is important to identify the legitimate clients of the team. The various end users who depend on the team’s output may focus on different performance standards (e.g., quantity, quality, cutting costs, innovation, and timeliness). For the world-famous Mayo Clinic, the goal is the patient and everyone knows this: “The best interest of the patient is the only interest to be considered” (Roberts, 1999a, p. 148).

Despite what teams would like to believe, perceptions of productivity do not always mirror reality. For example, Gladstein (1984) asked members of telecommunication sales teams to rate their teams’ performance and aggregated their scores to get a measure of the team’s perception of their performance. Aggregated member ratings did not correlate with an objective indicator of group performance—sales revenues. For many people, the buck stops here; anything else is inconsequential. We disagree.

**Cohesion**

A second major criterion on team performance is team cohesion. The word cohesion derives from the Latin word *cohaeus*, meaning to cleave or stick together. In physics and chemistry, cohesion refers to the force(s) binding molecules of a substance together. For teams, cohesion refers to the processes that keep members of a team (e.g., military unit, work group, etc.) together and united (Dion, 2000). Did the team work together well and are its members better able to work together in the future as a result of this experience? Are team members’ needs more satisfied than frustrated by the group experience (Sundstrom et al., 1990), and “is the capacity of members to work together on subsequent group tasks enhanced or maintained”? (Hackman & Oldham, 1980, p. 170). Consistent with most managers’ intuitions, cohesion is a consistent predictor of team performance within project teams (Gillespie & Birnbaum-More, 1980; Greene, 1989; Keller, 1986), but not necessarily service teams (for a review, see Sundstrom, McIntyre, Halfhill, & Richards, 2000). Sometimes, teams meet their goals, but relationships suffer and are not dealt with in a way that allows members to work productively together in the future. “Mutual antagonism could become so high that members would choose to accept collective failure rather than to share knowledge and information with one another” (Hackman, 1990, p. 6). In an effectively functioning team, the capability of members to work together on future projects is maintained and strengthened.

It is worthwhile to ask why team cohesion is important, as opposed to being just a nice side benefit. For example, if a team successfully puts a person on the moon, is this not a success regardless of whether the team was cohesive? The main reason has to do
with the future of the team or project. If the team effort really and truly is a one-time effort, then maximizing team cohesion may not be necessary. However, most of us want to build teams that will last for some meaningful length of time. If team members do not enjoy working on a team, performance will suffer. A manager in Société Générale, a French investment bank and corporate finance institution, summed it up by saying, "I ask myself whether I want to work with these people again. If the answer is yes, then the team was successful. If the answer is no, the team was not successful."

Successful teamwork means that the team accommodates to changes in membership due to additions, growth, and turnover. A prime example of this kind of teamwork is evident at Whole Foods Market Inc. Everyone who joins Whole Foods quickly grasps the primacy of teamwork. That’s because teams—and only teams—have the power to approve new hires for full-time jobs. Store leaders screen candidates and recommend them for a job on a specific team. But it takes a two-thirds vote of the team, after what is usually a 30-day trial period, for the candidate to become a full-time employee. Successful teamwork means that team members may need to routinely reject candidates. According to CEO and cofounder John Mackey, teams do not become effective until they have rejected someone: "They’re saying, ‘This person isn’t good enough to be on our team.’ They’re standing up to the leader, taking ownership of their team, saying, ‘Go back and try again’" (Fishman, 1996, p. 103).

**Learning**

In addition to the functioning of the team as a whole, *learning* is also important. As anyone who has attended an executive education course can testify, cohesion may be present, but learning may be absent. Simply stated, teams should represent growth and development opportunities for the individual needs of the members. Human beings have a need for growth, development, and fulfillment. Some teams operate in ways that block the development of individual members and satisfaction of personal needs. In short, members' needs should be more satisfied than frustrated by the team experience. Teams should be sensitive to members and provide opportunities for members to develop new skills. This does not mean that teams, or for that matter, organizations, exist to serve individual needs; rather, successful organizations create opportunities that challenge individual members. At United Parcel Service (UPS), learning is considered to be so important that high-level managers routinely spot-quiz supervisors about their new employees—"What are his hobbies?" "Where is she going to school?" (Hammonds, 2002, p. 103). Supervisors are taught to demonstrate an interest in their workers as individuals. Why? Jennifer Shroeger, a UPS executive, knows that people are going to leave. But, instead of worrying about them leaving, she takes an interest in their future. And UPS executives put their money where their mouth is—they help pay college tuition bills and offer Saturday classes for computer skill development and career-planning discussions.

**Integration**

Another perspective is that of the larger organization. Thus, a fourth criterion of team performance is *integration*. Does the organization benefit from the team? In many instances, the team becomes so self-serving and egocentrically focused that it loses sight of the organization's larger goals. (This is most likely the case with teams that have greater autonomy.) This can occur when the team's goals are incompatible with those of other departments or areas. If, for instance, a company's sales force dramatically
improves sales over a short period of time, this does the company no good. In fact, it
could even hurt the company if the manufacturing group cannot fulfill the promises
made by the sales force or if the technical support group cannot handle the new customer
calls. This is an example where the sales strategy backfires at the organizational level.

In other cases, different teams in the organization may reinvent things already
developed by the organization because they are not able to learn from outside their
group. It is important for teams to understand the organization’s goals in order to work
effectively toward them. Teams need to integrate with other units in the organization.
Practically, this means that teams must disseminate information, results, status reports,
failures, expertise, and ideas in a timely and efficient manner. Achieving integration

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**BOX 2-1**

**Team Performance Analysis**

Conduct a performance analysis of your team using the following four criteria as a baseline. Remember, you don't have to wait until the team is finished with its task to begin an evaluation. It is actually best to continually assess performance as the team is working toward its goal.

**PRODUCTIVITY**

- Does the team have a clear goal?
- What objective performance measures will be used to evaluate results?
- Who are the legitimate clients of the team?
- Does the team’s output (e.g., decisions, products, services) meet the standards of those who have to use it?
- Under what conditions should the goal change?
- What sources of information should the team consider to assess whether the initial goal should be changed?

**LEARNING**

- How can team members best learn from one another?
- Do the individual team members grow and develop as a result of the team experience?
- Do team members have a chance to improve their skills or affirm themselves?
- What factors and conditions could block personal growth?
- Are individuals’ growth needs understood and shared by group members?

**INTEGRATION**

- How does the team benefit the larger organization?
- Are the team’s goals consistent with those of the larger organization?
- What other groups, departments, and units are affected by the team?
- What steps has the team taken to integrate its activities with those of others?
requires solid planning and coordination with the rest of the company. Box 2-1 is an executive summary of our team performance analysis, which can be performed by team members or team leaders. The relative importance of each of the four criteria vary across circumstances, and there is no single best set of conditions for optimizing performance. There are many ways a team can perform work well and, unfortunately, more ways for it to be ineffective. Teams are governed by the principle of equifinality (Katz & Kahn, 1978)—a team can reach the same outcome from various initial conditions and by a variety of means.

Having presented the four major criteria in our team performance review, it is important to point out that this is not a magic list, or even a standard list. We think it is important for every team leader to think about which criteria are important when evaluating teamwork and to specify those in an *a priori* fashion.

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### THE TEAM PERFORMANCE EQUATION

Now that we have discussed the four critical measures of team performance and the three key ingredients for team success, we can put them together in a single equation for the leader to use when assessing team performance (Steiner, 1972):

\[
AP = PP + S - T
\]

Where

- **AP** = Actual Productivity
- **PP** = Potential Productivity
- **S** = Synergy
- **T** = Performance Threats

The actual productivity of a team is a function of three key factors: The potential productivity of the team, synergy, and threats. The first factor, the **potential productivity** of a team, depends on three subfactors: task demands, the resources available to the team, and the team process.

**Task demands** are the requirements imposed on the team by the task itself and the rules governing task performance. Task demands determine the resources needed for optimal performance and how to combine resources. **Resources** are the relevant abilities, skills, and tools possessed by people attempting to perform the task. **Process** concerns the way teams use resources to meet task demands. **Team process** describes the steps taken by the team when attempting the task and includes nonproductive as well as productive actions. The task demands reveal the kinds of resources needed; the resources determine the team’s potential productivity; and the process determines the degree of potential realized.

**Synergy** refers to everything that can and does go better in a team compared with individuals working independently (Collins & Guetzkow, 1964). **Performance threats** refer to everything that can go wrong in a team. Unfortunately, teams often fall below their potential; there is considerable **process loss**, or underperformance, due to coordination problems and motivational problems (Davis, 1969; Laughlin, 1980; Steiner, 1972). As a general principle, managers can more easily control threats than synergies. Synergies can emerge, but they usually take more time than anyone expects. Therefore, the manager’s job is to set the stage for synergies by attempting to minimize all possible threats.
CONCLUSIONS

Unless a team has a clear goal, it will be impossible to achieve success. However, having a clear goal in no sense guarantees successful team performance. Successful team performance is a multidimensional concept. To be sure, managers want their teams to satisfy the end user or client, but they also need to make sure that teamwork is satisfying and rewarding for the members. If the team does not enjoy working together, sustaining long-term productivity will be impossible. Moreover, managing a team successfully must include managing and investing in the individual team members. Thus, teamwork ultimately needs to be a growthful and rewarding experience for team members. Finally, as organizations move toward flatter structures and greater team empowerment, the possibility arises that team goals may become superordinate to those of the larger organization. A successful team is integrated with the larger organization. Putting teams on a course to achieve these four markers of success requires a combination of managing the internal dynamics of teams (ability, motivation, and coordination), as well as the external relations of teams within the larger organization. One of the most effective things a manager can do to ensure team success is to take a proactive approach and undertake an analysis of the essential conditions affecting team performance. One of the biggest managerial shortcomings in terms of teamwork is a failure to account for threats to team performance. This is unfortunate because managers can more easily control threats than synergies.