

Team Problem Solving for Pros **3**

IN THIS CHAPTER

- ❖ Team Problem Solving: Signpost #2 of Team Success
- ❖ What Confounds Successful Problem Solving? Thinking Traps and Biases
 - Group Pressures to Conform That Sideline Creativity
 - The Abilene Paradox
 - The Asch Experiments
 - Groupthink
 - Decision Biases That Throw Teams Off Track
 - Status Quo Trap
 - Confirming-Evidence Trap
- ❖ What Supports Problem-Solving Prowess? Introducing Our Model
 - The Model: Three Key Skills of Expert Problem Solvers
 - Problem-Solving Skill #1: Communications Patience
 - Problem-Solving Skill #2: Synergy Creation
 - Problem-Solving Skill #3: Disciplined Use of a Problem-Solving Process

Team Problem Solving: Signpost #2 of Team Success

Problem solving, the ability of team members to develop creative solutions to pressing organizational challenges, is at the core of a team's activities. Our research shows that a team's problem-solving abilities—its ability to identify the right problem, generate many ideas, build on those ideas, test them out, and implement the feasible ones—is one of the

most important predictors of team success. Simply put, when teams use systematic processes and skills to enhance the quality of their thinking, they increase their “team IQ.”

There is no doubt that teams are required to think smarter these days. Increasingly, teams are tasked with ambiguous dilemmas that have no clear answers or proven paths for success. More and more teams are finding that solutions that worked yesterday will not work tomorrow, or even today (refer to Chapter 1 for a detailed description of *jamaïs vu* versus *déjà vu* challenges). As such, team members are often required to go beyond incremental improvements to produce truly creative results.

So how do you generate the conditions for creative problem solving? Our problem-solving skills and processes are aimed at improving the way members communicate to combine their diverse knowledge and enhance the quality of their thinking.

Teams can provide the perfect breeding ground for creative, breakthrough results. Effective team management practices ensure that teams

are set up with the right members with sufficient expertise and motivation to tackle the creative challenge. Add in problem-solving skills and we have all the ingredients necessary to harness members’ talents and expand their thinking.

While imaginative, flexible, inclusive thinking is the ideal, we’ve all experienced situations in which team members stifle or reject ideas that clash with their own. We’ve seen the strategist dismissing the idealist, the idea person dismissing the logistics guru, and the thinker dismissing the feeler. Interestingly, studies have shown that group members actually communicate more with others who hold contrary views. Unfortunately, their communication is aimed at persuading those other members to adopt their views (studies reported by Festinger, Schachter, & Back, 1950). In

All in a Stew: The Right Mixture for Creative Problem Solving

Harvard’s Teresa Amabile (1999) likens creative problem solving to making a good stew. It requires the combination of three essential ingredients: expertise, the ability to think innovatively, and the motivation to excel. The first essential ingredient, like the meat and vegetables of the stew, is expertise in a certain domain. “No one is going to do anything creative in nuclear physics unless that person knows something—and probably a great deal—about nuclear physics,” says Amabile. “The ingredients of creativity start with skill in the domain—with the expertise.”

The second essential ingredient is the ability to think flexibly and imaginatively. According to Amabile, “These are like the spices and herbs you use to bring out the flavor of the basic ingredients of the stew.” The final ingredient is a motivation or deep commitment to confront the challenge for the pure pleasure of the pursuit. A committed group of people, compelled to solve a challenge, “is like the fire underneath the stew pot,” says Amabile.

other words, much of the effort in group communications can go into convincing and dismissing and not into listening, understanding, and learning.

Teams that accept and encourage the diversity that naturally occurs among members can learn from each other's natural working styles and biases, but they must also avoid thinking traps that narrow the ideas they entertain. Next we will examine some of the social pressures and thinking traps that team members may fall into if they do not follow disciplined problem-solving processes. These traps are dangerous in that they limit real involvement and stifle creativity.

What Confounds Successful Problem Solving? Thinking Traps and Biases

Team members not only must overcome difficulties arising from diverse working styles and biases but also must avoid thinking traps that narrow the ideas they entertain.

These well-documented psychological traps take several forms, including decision biases, misperceptions, unchecked assumptions, and social pressures. What makes these traps so dangerous is that they are often invisible to members.

The result of group pressures and decision-making traps is rather obvious. Poor decision-making practices lead to poor and often inadequate decisions. Groups experiencing some or all of these symptoms do not generate creative ideas; rather, they limit their analysis to a few narrow preselected options. These options are not tested or evaluated but instead are protected or prematurely discarded. Members make little or no attempt to collect crucial data, expert opinion, or feedback from important stakeholders. Moreover, data that support their initial view are given great weight, whereas data that are in conflict with their initial views are discounted.

Let's examine some of these issues that limit team problem-solving proficiency.

GROUP PRESSURES TO CONFORM THAT SIDELINE CREATIVITY

The Abilene Paradox: Beware Counterproductive Team Agreement

Jerry Harvey (1988) coined the expression "Abilene Paradox" to describe a dynamic whereby the group's inability to manage agreement

produces faulty decisions. That's right; it is the group's failure to manage *agreement*—not disagreement—that gets members into trouble. As you will see from Harvey's colorful depiction, group members tend to take trips to places they don't want to go, simply to fulfill their need to belong.

According to Harvey, groups that fail to manage agreement display the following characteristics. First, individual members agree on the nature of the problem or the preferred action. However, because members fail to communicate their desires and beliefs, they make a collective decision that no member truly supports. As a result, the group's actions are counter-productive. Next comes the blaming. As members become frustrated, angry, and irritated from taking an action they truly didn't support, they direct their aggression at each other. The result? No accountability, no commitment, no team. Harvey believes that groups can become perpetual travelers to Abilene and warns that groups that do not learn to manage agreement will have a one-way ticket.

The Abilene Paradox: The Management of Agreement

That July afternoon in Coleman, Texas (population 5,607), was particularly hot—104 degrees according to the Walgreen's Rexall thermometer. In addition, the wind was blowing fine-grained West Texas topsoil through the house. But the afternoon was still tolerable—even potentially enjoyable. A fan was stirring the air on the back porch; there was cold lemonade; and finally, there was entertainment. Dominoes. Perfect for the conditions. The game requires little more physical exertion than an occasional mumbled comment, "Shuffle 'em," and an unhurried movement of the arm to place the tiles in their appropriate positions on the table. All in all, it had the makings of an agreeable Sunday afternoon in Coleman. That is, until my father-in-law suddenly said, "Let's get in the car and go to Abilene and have dinner at the cafeteria."

I thought, "What, go to Abilene? Fifty-three miles? In this dust storm and heat? And in an unairconditioned 1958 Buick?"

But my wife chimed in with, "Sounds like a great idea. I'd like to go. How about you, Jerry?" Since my own preferences were obviously out of step with the rest, I replied, "Sounds good to me," and added, "I just hope your mother wants to go."

"Of course I want to go," said my mother-in-law. "I haven't been to Abilene in a long time." So into the car and off to Abilene we went. My predictions were fulfilled. The heat was brutal. Perspiration had cemented a fine layer of dust on our skin by the time we arrived. The cafeteria's food could serve as a first-rate prop in an antacid commercial.

Some four to six hours and 106 miles later, we returned to Coleman, hot and exhausted. We silently sat in front of the fan for a long time. Then, to be sociable and to break the silence, I dishonestly said, "It was a great trip, wasn't it?"

No one spoke.

Finally, my mother-in-law said, with some irritation, "Well, to tell the truth, I really didn't enjoy it much and would rather have stayed here. I just went along because the three of you were so enthusiastic about going. I wouldn't have gone if you all hadn't pressured me into it."

I couldn't believe it. "What do you mean 'you all'?" I said. "Don't put me in the 'you all' group. I was delighted to be doing what we were doing. I didn't want to go. I only went to satisfy the rest of you. You're the culprits."

My wife looked shocked. "Don't call me a culprit. You and Daddy and Mama were the ones who wanted to go. I just went along to keep you happy. I would have had to be crazy to want to go out in heat like that." Her father entered the conversation with one word: "Shee-it." He then expanded on what was already absolutely clear: "Listen, I never wanted to go to Abilene. I just thought you might be bored. You visit so seldom I wanted to be sure you enjoyed it. I would have preferred to play another game of dominoes and eat leftovers in the icebox."

After the outburst of recrimination, we all sat back in silence. Here we were, four reasonably sensible people who—of our own volition—had just taken a 106-mile trip across a godforsaken desert in furnace-like heat and a dust storm to eat unpalatable food at a hole-in-the-wall cafeteria in Abilene, when none of us had really wanted to go. To be concise, we'd done just the opposite of what we wanted to do. The whole situation simply didn't make sense.

From Harvey, J. B., *Abilene Paradox & Other Meditations on Management*. Copyright © 1988. This material is used by permission of John Wiley and Sons, Inc.

The Asch Experiments: Creating Conditions for Real Involvement

Social psychologist Solomon Asch was a pioneer in the study of how group pressure impacts group decision making. Through a series of carefully constructed experiments, he contributed greatly to our understanding of how social and personal conditions cause individuals to resist or yield to group pressures.

In his most famous set of experiments, Asch asked participants (seven confederates who were secretly cooperating with the experimenter and one unsuspecting subject) to compare a line drawn on a standard card with three lines of varying lengths drawn on a comparison card. The participants were asked to select the line on the comparison card that was identical to the line on the standard card. The subjects played 12 rounds in all.

For the first two rounds, the confederates were instructed to offer the correct answer and so all participants were in agreement. In the next rounds, however, the confederates were instructed to answer incorrectly. As a result, the unsuspecting subjects found themselves in a rather peculiar situation; their senses were telling them one thing and the group another. As Asch (1953) noted, “[H]e faced, possibly for the first time in his life, a situation in which a group unanimously contradicted the evidence of his senses.”

Asch found a wide variance in how individual subjects responded. Reporting on the results of 50 unsuspecting subjects, approximately one third of the subjects went along with the group and also gave the wrong answer. Asch called this the majority effect. Another one quarter of the unsuspecting subjects remained completely independent, with the remaining subjects acquiescing with the majority on some rounds and answering independently on others (see Figure 3.1).

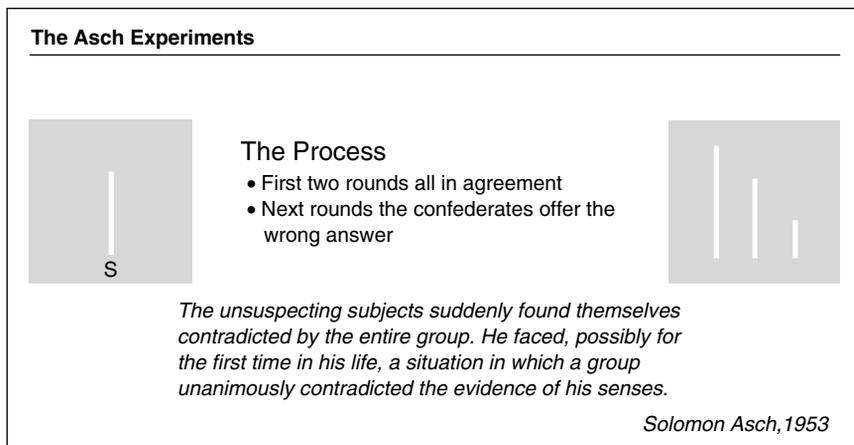


Figure 3.1 The Asch Experiments

As Asch varied the conditions of his experiments, he made many interesting discoveries. When he made the task more complex by reducing the variance of the comparison lines, the majority effect became even stronger.

However, when one or more of the confederates offered an answer that varied from the group's, the majority effect was reduced. Interestingly enough, the correctness of the dissenting confederate's decision did not matter. As long as at least one other person offered an answer that was different from the majority view, the unsuspecting subject felt confident enough to present his or her own answer. This effect was diminished when the dissenting confederate started conforming again.

In a further adaptation, Asch totally reversed the conditions for the experiment so that the uninformed subjects were the majority and the confederate was one individual who intentionally gave the wrong answer. Under these conditions, the naïve majority ostracized the confederate, smirking, laughing, and insulting him when he offered the wrong answer.

Following each experiment, the subjects were interviewed to discover why they responded the way they did. Interestingly, there was great variance among the subjects. Of those who remained independent, some were unwaveringly confident in their decisions; they knew what they saw and they held firm. Others, on the other hand, were beginning to doubt themselves and questioned the accuracy of their perceptions. Of the subjects who yielded to the majority effect, a subset truly believed that the majority estimates were correct; in their opinion, if everybody else saw it that way, it must have been true. Once again, however, a subset admitted that they simply conformed out of a need to belong and not appear to be different.

And so what can we learn from Asch's experiments, and how can we apply this wisdom to our teams? Asch (1953) concluded that there is a "fundamental psychological difference between the condition of being alone and having a minimum of human support." It seems that people are more willing to offer up what they know, see, and have learned when they sense that others are with them and will accept it. And so perhaps the greatest lesson is the simple yet profound notion that we free people to act and fully participate when we create conditions in which all members feel comfortable to express their true thoughts, feelings, and judgments—prudent advice for today's teams faced with ambiguous situations and no clear proven path or answer.

Research Note:
**The Powers and Pressures of
Belonging Versus Independence**

The results of the Asch experiments seem to suggest that many of us need to feel a sense of belonging before we can contribute openly and fully to collective work. We feel awkward and exposed when we stand alone. Of greatest significance, it seems that we are freer to be independent when at least one other person expresses a perspective that runs counter to the majority. Moreover, Asch found that our fears of reprisal for expressing opinions that vary significantly from the group are real, as his naïve subjects laughed and ridiculed the dissenting confederate who had intentionally given the wrong answer.

Groupthink: The Illusion of Good Decisions

Groupthink is a social condition that prevents a group from debating the real issues and critically appraising its actions. Irving Janis (1971) coined the well-known phrase after examining the decision-making dynamics of the close group of advisors to President John F. Kennedy who blundered into the Bay of Pigs invasion. After ruling out stupidity, “for the men who participated in the Bay of Pigs decision comprised great intellectual talent,” Janis posited that some other factors must be at work.

So Janis looked at the fiasco from the standpoint of group dynamics. He defined *groupthink* as a way to “refer to the mode of thinking that persons engage in when *concurrency-seeking* becomes so dominant in a cohesive in-group that that it tends to override realistic appraisal of alternative courses of action” (Janis, 1971, p. 400). Simply put, while members have divergent views, they do not express them because the pressure they feel to conform is too great.

Agreement comes at the expense of analysis so as to avoid conflict and responsibility.

Testing Your Team for Groupthink: Notable Symptoms

Janis identified eight symptoms of groupthink, which are described in the following paragraphs.

Invulnerability

Most or all of the members of a group share an illusion of invulnerability, which leads to excessive optimism and encourages extreme risk taking. It also causes members to fail to respond to clear warnings of danger. “The Kennedy in-group, which uncritically accepted the Central Intelligence Agency’s disastrous Bay of Pigs Plan, operated on the false assumption that they could keep secret the fact that the United States was responsible for the invasion of Cuba. Even after news of the plan began to leak out, their belief remained unshaken. They failed even to consider the danger that awaited them: a worldwide revulsion against the U.S.” (Janis, 1971, p. 402).

Rationalization

Victims of groupthink ignore warnings. Collectively they rationalize and discount warnings that otherwise would lead members to reconsider their assumptions.

Morality

Victims of groupthink believe unquestionably in their inherent morality, inclining members to ignore the ethical and moral consequences of their decisions. Janis identified at least two influential people who had major misgivings with the morality of the Bay of Pigs plan. As he writes,

One of them, Arthur Schlesinger Jr., presented his strong objections in a memorandum to President Kennedy and Secretary of State Rusk, but suppressed them when he attended meetings of the Kennedy team. The other, Senator J. William Fulbright, was not a member of the group, but the President invited him to express his misgivings in a speech to the policy-makers. However, when Fulbright finished speaking, the President moved on to other agenda items without asking for the reactions of the group. (p. 404)

Stereotypes

Victims of groupthink hold stereotyped views of the enemy as too evil, weak, or stupid to oppose the group's risky attempts. Kennedy's group held misguided assumptions about Fidel Castro's army, which led them to overlook the many obstacles to their plan's success. As Janis notes,

[T]he Kennedy groupthinkers believed that Castro's air force was so ineffectual that obsolete B-26s could knock it out completely in a surprise attack before the invasion began. They also believed that Castro's army was so weak that a small Cuban-exile brigade could establish a well-protected beachhead at the Bay of Pigs. In addition, they believed that Castro was not smart enough to put down any possible internal uprisings in support of the exiles. They were wrong on all three assumptions. (Janis, 1971, p. 404)

Pressure

Victims of groupthink apply direct pressure on members who express contrary views, reinforcing the notion that loyal members are cohesive. Although President Kennedy was known to raise skeptical questions during the Bay of Pigs meetings, he allowed the CIA representatives to dominate by "permit[ting] them to give their immediate refutations in response to each tentative doubt that one of the others expressed, instead of asking whether anyone shared the doubt or wanted to pursue the implications of the new worrisome issue that had just been raised" (Janis, 1971, p. 405).

Self-Censorship

Victims of groupthink avoid deviating from what appears to be the group's consensus, causing each member to minimize the importance of his or her doubts.

Unanimity

Victims of groupthink share an illusion of unanimity, creating the false assumption that silence means consent. Janis reasoned that when a group of people who respect one another arrives at what appears to be a unanimous decision, they believe that the decision must be true and right. This reliance on the idea that *everyone feels this way so it must be right* replaces individual critical thinking and reality testing.

Mindguards

Victims of groupthink sometimes become self-appointed mindguards, protecting the group from unpopular or adverse information. Mindguards apply pressure on others—both from within and outside of the group—who disagree and effectively block their participation. Janis notes that Secretary of State Rusk functioned as a highly effective mindguard by failing to alert the group to strong objections from three “outsiders” who learned of the plan—Undersecretary of State Chester Bowles, USIA Director Edward Murrow, and Rusk’s Intelligence Chief, Roger Hilsman.

DECISION BIASES THAT THROW TEAMS OFF TRACK

Apart from group pressures to conform, team members can also default to decision biases that limit their thinking. Most of these biases are the result of perceptual shortcuts that we use to manage the overwhelming amount of data that we encounter daily. While these perceptual shortcuts help us manage our day-to-day lives, they tend to limit our thinking by filtering out data and possibilities that are not familiar to us.

We present a mere sampling of the decision-making biases that have been identified by various experts. Our intent is to make you aware that these biases naturally occur in individuals and teams, with awareness being your best guide for avoiding them. For a fuller description of decision-making biases, refer to Hammond, Keeney, and Raiffa (1998). Their book was the reference for the following discussion.

Status Quo Trap

When the status quo trap is operating, we have a strong bias toward preserving the way things currently are. We believe that *the devil we know is better than the devil we don’t know*.

Many experiments have shown the strong attraction people have to the status quo. For example, in one experiment, people within a group were randomly given one of two gifts of approximately the same value—half receiving a mug and the other half receiving a Swiss chocolate bar. While you might expect that about half of the subjects would have wanted to make the exchange (especially those subjects who did not receive the chocolate), only 1 in 10 actually did. The status quo had exerted its force. Other experiments have shown that the more choices subjects are given, the greater the pull the status quo has. When asked to choose between the status quo and option A or B, more people selected the status quo than when confronted with option A by itself. The researchers concluded that choosing between more alternatives requires greater effort and risk, and selecting the status quo avoids that effort.

Confirming-Evidence Trap

This trap leads us to seek out evidence that confirms our initial assumptions or decisions. We tend to give greater weight to the evidence supporting our initial views and less weight to contradictory evidence. The confirming-evidence traps also limits our approach to seeking out evidence. When this bias is operating, we tend to collect information from sources that support our views and avoid reviewing input from sources that may provide evidence to the contrary.

In one psychological study, two groups—one supporting capital punishment and one opposing it—each read two reports of carefully conducted research on the effectiveness of the death penalty as a deterrent to crime. One report concluded that the death penalty was effective and the other that it was not. The result? Both groups emphasized the information that supported their original viewpoint and actually became even more convinced of the validity of their own perspectives. Despite being exposed to solid scientific information supporting counterarguments, they automatically dismissed this conflicting information.

What Supports Problem-Solving Prowess? Introducing Our Model

We have studied a number of teams that have successfully honed a set of creative problem-solving capabilities. At the root of these skills is the ability of team members to balance their creative processes—whereby all members participate in team discussions, feel comfortable to speak their minds, and build on ideas—with the ability to produce and implement results—whereby members evaluate and agree on a course of action and move on.

Kathleen Eisenhardt of Stanford University refers to this form of team ingenuity as the ability to make *smart-fast* decisions. She deplores the habit of those North American managers who spend too much time analyzing and not enough time acting. Eisenhardt, who studies how successful organizations make fast, smart decisions, maintains that successful companies of the future will be the ones that encourage employees and teams to act and create within a few simple rules (Eisenhardt, 2000).

THE MODEL: THREE KEY SKILLS OF EXPERT PROBLEM SOLVERS

Our research and practice have identified the following three skill areas to help teams make smart decisions and implement them.

Problem-Solving Skill #1: Communications Patience

This skill includes techniques that help members share information and perspectives by working hard to understand one another and working hard to be understood. Members with controversial or divergent views are not ignored or blocked. Rather, members are careful to hear and understand all views, thus creating the necessary conditions for meaningful dialogue to occur.

Problem-Solving Skill #2: Synergy Creation

This involves techniques that equip members to expand their thinking by generating many ideas, building on those ideas, and evaluating ideas to create synergistic solutions. These skills are essential as they encourage teams to expand their thinking first to harness all of the divergent opinions, instead of jumping to any one solution prematurely.

Problem-Solving Skill #3: Disciplined Use of a Problem-Solving Process

Members become disciplined in using a systematic process for analyzing data, creating options, and evaluating and selecting preferred solutions.

True, these factors overlap, but together they account for the kind of problem-solving ingenuity that leads teams to innovative solutions. The good news is that we can all learn a repertoire of skills to enhance team problem solving. The following information will help you build excellent problem-solving techniques in your teams.

TEAM FITNESS EXERCISE

You may wish to begin on page 145 by assessing your team's problem-solving skills (Exercise 3.1, Team Problem-Solving Assessment).

Problem-Solving Skill #1: Communications Patience

Just as bumping, setting, and spiking are essential competencies for the members of a university volleyball team and skating, stick handling, and puck passing are critical skills for a professional hockey team, conversation is a core competence for high-performing work teams. The ability of members to share critical insights and perspectives to develop a joint database from which to diagnose issues and explore possibilities for action is a required capability.

Figure 3.2 lists some of the questions that define the communications patience success factor in our research. High-performance teams answered these questions in the affirmative. Take a minute to read through these questions. Now think of a team to which you belong. How might your team realistically answer these questions?

Patient Communicators

- ❖ Work hard to make themselves understood
- ❖ Work hard to understand others
- ❖ Do not blame each other when misunderstandings occur
- ❖ Do not insist on their solutions while allowing others to sit back passively

Communications Patience

- Ⓞ Do we make sure that we clearly understand each other's point of view before solving problems?
- Ⓞ When we misunderstand each other, do we slow down and find a way to correct the problem?
- Ⓞ Do group members work hard for a complete understanding of the issues?
- Ⓞ When someone doesn't agree or understand, do we always find out their reasons?
- Ⓞ Do we work hard to come up with solutions acceptable to all of us?
- Ⓞ Do we bring everyone's concerns out into the open so that issues are fully explored?

Figure 3.2 Communications Patience

Chances are that your team will not have answered all of these questions in the affirmative. In our great haste to do more, faster, with less, we often speak in code with short, fast monologue replacing deep, meaningful dialogue. And so, although we know that our fellow team members do not have the capacity to actually read our minds, we often communicate with them as if they do.

Similarly, when it comes to active listening, most of us do not listen at a very deep level. We have a natural tendency to evaluate and judge what we are hearing. When we hear another speak from their unique perspective, we typically go through a process of evaluation to determine whether we agree or disagree. Agreement usually leads to supportive gestures. Disagreement, on the other hand, leads to debate

So Why Don't We Listen Well?

While people spend more time listening than any other communication activity, research shows that we listen at about 25% efficiency. This is surprising when most of us report that we are good listeners.

or avoidance. Either way, the conversation remains at the surface, and real shared understanding rarely develops. The result? We find ourselves participating in what Marvin Weisbord (personal communication, 2000) refers to as the *same, different* meeting. We are all in the same physical space, yet we are not connecting.

Patient communicators understand that the communications process is fraught with difficulty and that “noise” of many sorts—including time pressures, interruptions, biases, and attitudes—interferes with the ability of speakers to send messages and of listeners to receive them. Having developed an orientation that helps members slow down to fully share, explore, and digest key insights, patient communicators do not dampen passionate stances or deem them too hot to handle. Rather, they slow the conversation down so that they can listen to the varied perspectives being expressed. Members with controversial views are not blocked or ignored; rather, members work hard to hear and understand.

As we develop our communications patience abilities, we develop the spirit of inquiry that promotes team learning. When feeling disagreement, we explore the assumptions underlying all views to develop a deeper understanding. As each of us reflects on and shares our underlying assumptions, we learn that others see the situation in a different way. We begin to see the world not only from our narrow point of view but also from the perspectives of others. Each person adds to the common database—a collection of ideas that make the whole group smarter about what is and what could be.

Team designers and facilitators have an important role to play in establishing a climate to encourage communications patience. First and foremost, facilitators can design their meetings for real input by asking big questions that get to the heart of the matter and then providing ample time and opportunity for each member to share from his or her unique perspective. And so, what are the critical conversations that people need to have to move forward together? What questions will you pose so that people can have them? What data do you need to surface and explore together? Who can provide those data? What process will you use to have people move from exploration to evaluation to action?

TEAM FITNESS EXERCISES

To practice and build the listening skills for understanding, try the exercises Who’s on First? (Exercise 3.9, page 159), Living in Another Person’s World (Exercise 3.8, page 157), or Blind Square (Exercise 3.17, page 172).

Problem-Solving Skill #2: Synergy Skills

A cycling enthusiast who is a friend of ours shared a highlight of his cycling career. During a race, Phil was able to secure a spot in the pack, or the peloton, with the elite cyclists. Riding elbow-to-elbow with the pros at

breakneck speed, Phil achieved and maintained a pace that he had never achieved before and could never have achieved while cycling alone. Phil, along with his fellow pack members, benefited from drafting. Drafting happens when riders are protected from the wind by the cyclists in front of them.

Taking turns at the front, all cyclists benefiting from drafting were able to set and maintain a speed that no one member could maintain on his or her own. This is *synergy*—all members together achieving an outcome that each member individually

Synergy occurs when the team's combined output is greater than the sum of the individual inputs. Synergy creates an excess of resources.

could not achieve and thus satisfying the needs of all. This shift toward creating synergy occurs when team members begin to understand that as individuals they do not possess the full truth or knowledge; rather, each member has both something to offer and something to learn. Synergy requires that people approach problems and solutions in a way that allows members to build on ideas, examine problems from many sides, and combine knowledge from many functions and perspectives.

Achieving synergy often requires creativity and risk. In our cycling example, it took all of Phil's physical and mental resources to ride elbow-to-elbow at top speed with the pack. Similarly, work-team members may experience risk when sharing new ideas or suggesting ideas that violate an existing protocol or accepted norm of practice.

We've isolated three techniques that are very helpful to the process of achieving synergy:

1. Preparation—Using data, not hunches. Teams collect important data and explore assumptions.
2. Generating and building on ideas. Teams use processes to generate many ideas and build on those ideas to produce breakthrough thinking.
3. Evaluating ideas and solutions. Teams test, evaluate, and tinker with ideas to generate synergistic solutions.

Synergy Technique #1: Preparation—using data, not hunches

Collecting Facts

Teams need good data to make good decisions. In the absence of good data, members waste time in pointless debates over opinions, and the problem with opinions is that we all have different ones.

Collecting accurate information is essential during all phases of the problem-solving process. Early on, good information is critical for identifying the right problem and understanding the full scope of the problem from each stakeholder's perspective. Throughout the problem-solving process, good data are essential for exploring and assessing options for workability. In short, the more information teams collect about their problem and its potential solutions, the more likely they are to craft the right problem statement and devise a workable solution.

Just as important as the collection of the data is how the team actually uses the data. In fact, as Daniel Goleman and colleagues point out, data interpretation is a core skill. Once data are collected, the ability to analyze them to create a shared understanding of "what it means" is in and of itself in a creative act (Goleman, Kaufmann, & Ray, 1992).

A good role model for collecting relevant facts and using them effectively is your family physician. The next time you visit your doctor with a complaint, observe how she collects data about you using a trial-and-error method of asking many questions. Exploring first by asking open-ended questions and listening attentively to your answers, your doctor narrows the questioning until she zeros in on a specific diagnosis. The physician then tests her assumptions by collecting more data. She may order tests or prescribe a medication. If the medication works, your problem is solved. If not, the process begins again until the correct diagnosis is made.

A team's information should come from many sources. What do the records say? Do we have the relevant statistics, and if not, how can we collect them? What are the opinions, wants, and needs of important stakeholders such as customers and suppliers? What do the experts say about important trends concerning the problem? What are your competitors doing? Who has solved this problem before? What did they learn? What other disciplines have tackled this problem before? How might we adapt their solutions?

Exploring Assumptions

We all hold taken-for-granted assumptions about the way things are or the way they should be. We don't question these assumptions or even think about them, but we hold them to be *true* for ourselves as well as others. "Children should be seen and not heard," "Managers decide, employees do," "Work is from 9:00 A.M.–5:00 P.M." are just a few examples.

Of course, the assumptions that I hold may be very different from the assumptions that you hold. When team members hold on tightly to their assumptions and do not discuss or question them, the stage is set for friction and conflict. We ask team members not to throw away their assumptions, but to practice "putting them aside" to help facilitate listening and understanding. Exploring assumptions raises the quality of thinking and sharing as it permits members to share the *whys* behind their views. With

this deeper look, members can clearly distinguish between facts (i.e., objective reality) and perception (i.e., a subjective interpretation of reality formed from our assumptions).

Once assumptions have been surfaced, team members have important information that they can build on. The challenge is to help members clarify their assumptions, discover contradictions in their assumptions, if there are any, and then think through new strategies based on more-accurate assumptions. Bringing key assumptions to the surface can greatly increase creativity, as assumptions left unexamined limit the range of possible actions to the familiar and comfortable.

Checklist: Exploring Assumptions

To explore assumptions, ask open-ended questions to develop a deep understanding of the speaker's thoughts, feelings, and beliefs. Keep this checklist of questions available to use as needed to help surface assumptions and aid understanding.

Ask members to explore their assumptions of reality.

- ❖ What information are you basing that on? What evidence do you have? What facts do you have to confirm that?
- ❖ What are the assumptions that must be true in order for this solution to work?

Ask members to share how they interpret a scenario.

- ❖ If we do x , is y likely to occur? What are all the assumptions that must be true for y to occur?

Test assumptions held by the group.

- ❖ What assumptions are evident in the decisions we have made so far?
- ❖ Are they still valid? How have they changed?
- ❖ How have these assumptions limited us?

Ask members to share the reasons *why* they feel the way they do.

- ❖ What's your opinion of x ?
- ❖ Do you think it will work? Why or why not?
- ❖ How do you think people will react if we do x ? Why?
- ❖ What are your concerns?

Ask members to share what's important to them.

- ❖ If our plan were a huge success, what outcomes would we achieve?
- ❖ Why is this solution important to you?
- ❖ What criteria must we meet to achieve a solution that we can all live with?

TEAM FITNESS EXERCISES

To help your team explore assumptions, refer to the following exercises: Concept Challenge (Exercise 3.10, page 160) and/or Exploring Assumptions (Exercise 3.14, page 165).

Synergy Technique #2: Generating and building on ideas

Creative problem solving requires an outlook that allows team members to search for ideas, protect those ideas while they simmer, and then build on those ideas. Instead of jumping to a solution prematurely—with only one or two ideas from which to choose—creative problem solvers

In his well-known work, Dr. Edward De Bono divides thinking into two categories. One he terms *vertical thinking*, or the process of applying linear thought and logic to the situation. We use our vertical thinking when we strategize, evaluate, and action-plan. The other type of thinking he calls *lateral thinking*, which involves disrupting an apparent thought sequence and arriving at a solution from another angle. Lateral thinking leads to those ideas that are simple only after they have been thought of. Indeed, as eminent business philosopher Peter Drucker points out, "The greatest praise an innovator can receive is for people to say 'This is so obvious. Why didn't I think of it?'"

give themselves the space to generate many ideas because they know that the best ideas come when their creative juices are flowing. With a wide variety of ideas from which to choose, it's much easier to make good decisions.

Friends of ours in the improvisation business play a game called "find another answer." In this game, participants are tasked with answering a silly question as quickly as possible. After providing the first answer, participants are then asked to provide a second answer within a matter of seconds. The game teaches

people to search for multiple answers, and time and time again, they surprise themselves with the wit, humor, and creativity of their second answers.

However, because the ability to think imaginatively has often not been nourished in youth or adulthood, many of us do not naturally default to thinking creatively. Instead of fostering and building on new ideas by focusing on what might work, we tear ideas apart, focusing on what we assume cannot work. In our fast-paced and hectic work settings, we tend to over-rely on vertical thinking to make quick judgments that serve to confirm the status quo.

Hence, while most organizational leaders believe in the value of new and creative ideas, they often unknowingly squash the possibility for creative thought. They do this by taking away the factors that are necessary for supporting it, including time, flexibility, and the freedom to experiment. Those who have been tasked with solving an important problem

with an unreasonable deadline, too few people, and lack of authority to try something new will understand just how binding these constraints are.

In addition to the external constraints limiting creative thought are those within us. Roger von Oech (1998) identified the attitudes on the right, which he refers to as *mental locks* because they lock our thinking in the same old vertical way. While these attitudes are necessary for most of what we do (who wants creative thinking at a stop sign?), they prevent us from thinking flexibly when we are trying to be creative.

These mental locks limit thinking, because what people don't notice, they can't see. The quotes below, although humorous today, show how limiting a reliance on vertical thinking can be.

We would never suggest that lateral thinking should be used at the expense of logic. Rather, both thinking processes are useful and necessary to create truly synergistic results. While there is an important place for critical evaluation and judgment, there is also a place for imaginative thinking that gives members the space to explore and innovate first. As you can see, critical judgment at the expense of imagination destroys opportunity.

Mental Locks: How to Clamp Down on Creative Thinking

- ❖ The Right Answer
- ❖ That's Not Logical
- ❖ Follow the Rules
- ❖ Be Practical
- ❖ Avoid Ambiguity
- ❖ To Err Is Wrong
- ❖ Play Is Frivolous
- ❖ That's Not My Area
- ❖ Don't Be Foolish
- ❖ I'm Not Creative

“What use could the company make of an electric toy?”

Western Union, turning down the rights to the telephone, 1878

“Who the hell wants to hear actors talk?”

Harry Warner, President of Warner Bros. Pictures, 1922

“Everything that can be invented has been invented.”

Charles Duell, Commissioner, U.S. Patents Office, 1899

“The horse is here to stay, but the automobile is only a novelty, a fad.”

President of the Michigan Savings Bank advising Henry Ford's lawyer not to invest in the Ford Motor Company.

“Heavier than air flying machines are impossible.”

Lord Kelvin, 1895

SOURCE: Goleman et al. (1992)

In our search of the literature, we have found that systematic innovators apply some of the following techniques.

Generate Promising Ideas

The first step is to cast a wide web to capture good ideas. Innovative teams are always on the alert for interesting ideas. They study markets, businesses, and industries that are the same as and different from their own to examine just what works and why. They see old ideas as the primary fodder for new ones.

Norm for Creativity

Just as important as each member's attitude toward innovation is the team's ability to foster a climate that accepts new ideas and agrees to control any knee-jerk negativity that may accompany new and "wacky" ideas. These teams nurture the creative spirit in members and protect partial ideas so that they can be adapted and built upon. Naïve questions are encouraged because they help members break out of their linear thought patterns and question assumptions that may no longer be valid.

So instead of imagining all the reasons why an idea can't work, the team allows the idea to develop fully and uses processes to imagine how an idea can work. With the voices of criticism stilled, members trust that they can express wild thoughts and propose imaginative ideas without having to invest all their energy in defending them.

Use Old Ideas in New Ways

Creative thinkers have the capacity to systematically use old ideas in new ways, new places, and new combinations. For example, the steam engine was used in mines for 75 years before Robert Fulton applied it to boats to create the first commercial steamboat. Similarly, Ford's first car, the Model T, looked strikingly similar to a horse-drawn carriage. He simply (or not so simply) replaced the real horsepower with the engine.

Consider how a team from 3M focused on creating a breakthrough product for the division's surgical drapes unit. While their initial goal was to create a better type of surgical draping, after observing surgeons in developing countries they revised their goal as simply *producing low-cost methods for infection control*.

With this new insight, the team set out to find leaders in the field from whom they could learn. Some of their most valuable learning came from experts in surprising places. For example, they found that their problem was similar to one that had been resolved by veterinarians whose patients are covered with hair, don't bathe, and don't have medical insurance. Another source was Hollywood. Makeup artists are experts in applying materials to the skin that are easy to put on and take off and that do not

irritate the skin. These insights and others inspired the team to generate three strong proposals, with one breakthrough product—an antimicrobial protection cream to coat catheters and tubes aimed at controlling airborne diseases (Hargadon & Sutton, 2000).

TEAM FITNESS EXERCISES

The series of exercises beginning on page 72 will help a team develop an inquisitive mind. Experiment with them when the team is stuck in linear thinking: We guarantee they'll be fun and profitable.

Synergy Technique #3: Evaluating ideas and solutions

Innovative problem-solving teams tinker. Instead of endless debating about whether an idea will work or not, they collect data or, better yet, turn their idea into a product or service that can be tested and adapted. Putting ideas and concepts to the test gives teams important feedback they can use to improve them, apply them in another way, or abandon them. By thinking through and responding to the various implications of ideas before we adopt them, promising solutions can be developed that members can commit to. In fact, teams that we have worked with tell us that they learn just as much from testing ideas that don't fly as testing those that do.

While evaluation is crucial, timing is also important. If evaluation of ideas is premature, good ideas are abandoned before they become great ideas. Although the role of a devil's advocate can be very helpful, we don't recommend it as a permanent one for any specific team member. We've all been on teams where one or two members take great pride in playing the role of naysayer, blocking ideas that they personally do not support in the name of devil's advocate. The result is often frustration and inaction, as the team is effectively blocked from making decisions.

So how do you achieve the critical role of evaluation? All ideas must finally be put through a rigorous testing and examination for flaws. At some point, members must be ready and willing to switch from idea generation to evaluation. We suggest that evaluation of ideas be undertaken as a team activity. This way, all members focus first on creating and building the ideas and then on evaluating those ideas for feasibility. You will see that we have built this process (first creation of ideas and then evaluation) into most of our exercises. For example, in the visioning process, first we generate ideal futures and then we have a reality dialogue to assess whether the ideas can actually be achieved.

Synergy-Building Exercises and Techniques

The following exercises are designed to help members expand their thinking—that is, to discover aspects of an issue that they had not thought of or considered before—and/or to evaluate ideas for plausibility. Some of

our favorites are built on the work of creativity experts Edward De Bono and Roger von Oech. Select and experiment with the techniques that suit your team culture best. Remember, for the techniques to work, the team leader or facilitator must provide a safe, respectful environment.

Commit these techniques to memory and use them often during the journey through problem-solving sessions.

To Generate and Build On Ideas

Brainstorm

Ask members to generate as many ideas or options as they can without censorship or judgment (refer to Exercise 3.12, Brainstorming, page 163).

Challenge a Concept

Choose a concept. Ask members the following questions:

- ❖ Why must we do it this way?
- ❖ What other alternatives may there be?

(Refer to Exercise 3.10, Concept Challenge, page 160.)

Examine All Perspectives

Ask members to consider the following:

- ❖ Who is affected?
- ❖ How are they impacted?
- ❖ What are their needs?

Remove All Fault

Ask members to assume no fault or blame.

Change Your Viewpoint

Ask members to think about and consider the viewpoints of others.

Ask a Different Question

When members have exhausted their ideas for one question, ask the question in a different way. For example, after asking, “Where will we go on our holidays?” you may also ask, “What do we want to do on our holidays?” Different questions spark different answers.

Ask Your Questions in Plural

Simply frame your questions in a way that generates more than one right answer. Instead of asking, “What’s the answer?” ask, “What are the answers?”

To Evaluate Ideas

Consider All Factors

Ask members to search for all the factors involved in a situation. To practice, refer to Exercise 3.11, Consider All Factors, on page 161.

Pluses, Minuses, So What?

Ask members to identify all the pluses and minuses of a particular scenario or option. On the basis of their data, ask them to explore “so what?” or how we can adapt our decision to accommodate the pluses and minimize the minuses. To practice, see Exercise 3.16, Pluses, Minuses, So What? on page 171.

Consequences and Sequels

Ask members to identify all the probable consequences of a particular scenario in the short term, the medium term, and the longer term. On the basis of the data you generate, ask members to adopt, modify, or abandon their idea. To practice, refer to Exercise 3.15, Consequences and Sequels, on page 169.

Evaluation Matrix

Ask members to identify important criteria for assessing the feasibility of several ideas. Criteria may include factors such as cost, ease of implementation, value to customer, and impact. Each criterion can be weighted to reflect its relative importance. For each idea, participants then assess whether the idea meets the criteria by answering yes, no, or maybe.

Problem-Solving Skill #3: Using a Disciplined Problem-Solving Process

There are many structured problem-solving processes available, and it is very likely that your organization has adopted one. This is good, and if your team is using it, even better. However, even though we know we should follow a disciplined sequence of problem-solving steps, we have a great temptation to skip a few and arrive at a decision prematurely.

The tremendous value of a problem-solving process is that it helps to align our thinking and action around a common approach to the following actions:

- ❖ Selecting the problem
- ❖ Exploring the problem and gathering data
- ❖ Establishing success criteria
- ❖ Developing a clear problem statement

- ❖ Generating options
- ❖ Evaluating options
- ❖ Selecting a preferred solution
- ❖ Developing a plan for team action
- ❖ Testing and modifying the solution

Nine Steps: Tips and techniques for winning team problem-solving

Our version of the problem-solving process incorporates many of the techniques we have discussed so far. Use it and adapt it to suit your team's needs.

Step 1: Select the Problem

To select a problem, follow these steps:

- ❖ Begin with team's mission and vision.
- ❖ Identify the gaps between desired future state and current reality.
- ❖ List all barriers to achieving future state; these are your problems.
- ❖ Collect data from customers and stakeholders.
- ❖ Choose problem using relevant criteria (payoff, speed, "bee in the bonnet" issue, etc.).

Step 2: Explore the Problem

Assess possible causes and interpretations of the problem:

- ❖ Collect the facts.
- ❖ Examine all sides.
- ❖ Define stakeholder interests.
- ❖ Surface assumptions.

Step 3: Establish Success Criteria

Set objective standards for evaluating possible solutions:

- ❖ Review the stakeholder interests that must be met.
- ❖ Identify the boundaries that must be respected (e.g., legislation, time frames, policies).
- ❖ Challenge all boundaries to reduce blocks to creativity.
- ❖ Connect the success criteria back to the mission and vision.

Step 4: Develop a Problem-Solving Statement or Goal

- ❖ Write a problem or goal statement that all members are committed to solving.

- ❖ Review and gain agreement on the expectations of the team to decide, recommend, or simply generate options.
- ❖ Gain agreement on the method of decision making: vote, consensus, unanimity, and so on.

Step 5: Generate Many Options

Expand the thinking to create many options:

- ❖ Brainstorm.
- ❖ Dialogue.
- ❖ Combine ideas.
- ❖ Do not evaluate.

Step 6: Assess Options

Evaluate options against the previously established success criteria:

- ❖ Ask which options best meet our needs.
- ❖ Develop a matrix of options and criteria and rank each option.
- ❖ Eliminate options with flaws.

Step 7: Select Preferred Solution

- ❖ Identify and select the option(s) that best meet success criteria.
- ❖ Consider the consequences of preferred options.
- ❖ Consider the pluses, minuses, and *so what?*s of each option.
- ❖ Ask how options can be combined or modified to create superior solutions.
- ❖ Review the agreed-upon solution and test for consensus.

Step 8: Develop an Action Plan

- ❖ Create goals and action plans specifying individual and team accountabilities.

Step 9: Test and Modify

Evaluate the success of your efforts:

- ❖ Assess metrics to determine if the solution is achieving the intended goal.
- ❖ Assess whether stakeholders are pleased with the solution.
- ❖ Modify plans to accommodate ongoing interests, data, and events.

Communications Patience, Synergy, and Process Skills: The Proven Formula to Create Problem-Solving Team Pros

The skills of patient communications and building synergy may seem simple to understand, but they are not simple to carry out. They require a different orientation, whereby team members slow down to share important information and perspectives and also take their time to explore the gifts, talents, and perspectives of their fellow team members. To develop these skills, begin by watching your own communication style and the communication patterns in your team. Are team members working together by leveraging the ideas of all, or are members prematurely abandoning ideas, leaving them to dissipate into thin air? If so, the resultant conflict and misunderstanding may be occurring because team members are not taking the time and energy to share, listen, build on ideas, and evaluate them before springing to action.

This realization—that team conflict and friction arise because of differing working styles, diverse perspectives, and the inherent noise in the communication process and not because of the inadequacies of the members—is a crucial first step. With this realization comes a step toward respect and genuine liking for fellow team members. It takes the negative energy away from relationship issues and more appropriately focuses the energy where it belongs—on dialoguing around the issues and problems to be solved.