

Chapter 9

Pervasive Teamwork

9.1 OUR LOVE-HATE RELATIONSHIP WITH TEAMS

The modern literature of management is full of teams and so is the modern workplace. Much of the current emphasis on teams can be traced directly to the success of Japanese companies such as Toyota in using teamwork as part of various *quality methods* that borrowed heavily from ideas introduced by the American W. Edwards Deming as part of the postwar rebuilding of Japanese industry (Scholtes, 1998). The advantages of teamwork are many: Effective teams bring together the complementary skills needed to do a job; they can make better decisions than an isolated individual; and they can effect better, more efficient execution than is possible with a more loosely knit group of individuals.

Interestingly, the modern love affair with teams stands in stark contrast to the unpleasant team or group experiences that many of us have experienced on *group projects*. Significant numbers of readers scanning these words have had the misfortune to be forced to single-handedly carry some number of freeloaders on some group project. Although by themselves, these less-than-positive experiences don't condemn group and team projects, they do cause us to be realistic about teams and face teamwork benefits and difficulties in a clearheaded manner.

We start by examining some of the differences between groups and teams; these distinctions lead us to examine the case for establishing team ground rules to help align team member expectations right from the start. Thereafter, we derive a number of simple quantitative models that help us understand some of the obstacles to effective teamwork. We conclude with a discussion of an effective brainstorming protocol that can help problem-solving teams be more effective in reaching high-quality solutions.

9.2 WORKING TOGETHER IN GROUPS AND TEAMS

The impulse for human beings to work together in groups is biologically irresistible. Ours is a social species, and we have hunted, gathered, farmed, and invented our way into large-scale social organization over many thousands of years. Modern organizational theory and practice has weighed in with a number

of refinements on our natural inclinations and instincts. Here we consider the differences between a group and a team, some team basics, and a number of key team ground rules.

9.2.1 Teams versus Groups: What's the Difference?

In a modern organizational context, however, the term *team* is now used somewhat loosely to describe any *group* or *assemblage* of people, but some are more careful to distinguish groups from teams. A particularly interesting study of teams (Katzenbach & Smith, 2003) studied 50 different teams in 30 companies, trying to understand common approaches of those teams that had reached a high level of performance. Their work led them to define a *working group* as follows (p. 91):

Working group. *A working group consists of members who interact primarily to share information, best practices, or perspectives and to make decisions to help each individual perform within his or her area of responsibility.*

They contrasted this loose association with a team, which they defined somewhat differently (p. 45):

Team. *A team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable.*

Examining the two definitions carefully, the primary distinction between the two has to do with *goals* and *accountability*. In a working group, the goals of the group are typically the goals of the larger organization: There is no special purpose or extra-organizational reason for the working group. Moreover, individuals are accountable for their own work products (or the work products of those who work for them).

On the other hand, a team has a special reason for its existence (its goal or goals), and the team members are collectively responsible for the work product that all contribute to. It is important to point out that neither working groups nor teams are inherently good or bad in and of themselves. The key point is to understand when each type of organization is more appropriate. Simple committees are often working groups where individuals come together to communicate, deliberate, and then perform their individual tasks. Special projects with difficult deadlines often need teamwork, and it is important to execute the basics well to raise the performance of the team.

9.2.2 Team Basics

The key elements of becoming a team are contained in the definition. Recall that a team is

1. a small number of people
2. with complementary skills

3. who are committed to a common purpose, performance goals, and approach
4. for which they hold themselves mutually accountable.

Decision making becomes more difficult as team size grows, and this argues for keeping team size as small as possible. Of course, every team needs a full complement of skills to get its job done, and this factor argues for increasing teams to ensure that the needed skills are available.

A key element of becoming a true team is to understand and articulate common purpose, goals, and approach. A finding of the Katzenbach and Smith (2003) study is that teams form in reaction to a performance challenge and that the challenge is more important than creating a “team-oriented” environment or the particulars of some team-training exercises. A common distinction in the literature of organizational behavior is between (1) task and (2) relationship, and much has been written about when it is important to emphasize task, relationship, or both. The study findings on teamwork are clear that good team relationships grow out of the need for high performance (high task). There is no chicken-or-egg problem when it comes to how teams are formed.

Finally, mutual accountability is an important, but difficult, element of what it means to be a team. Most incentives, evaluations, and recognition in organizations are aimed at individuals, and most such goodies come from someone else (your boss, his or her boss, a committee, etc.). Mutual accountability means that (1) the team takes responsibility for its own behavior, and (2) its evaluation mechanisms are *internal* to the team and do not rely excessively on the opinions of others. The competence and trust implicit in these matters are fairly rare, and high-performance teams are elusive yet worth the pursuit.

9.2.3 Team Ground Rules and Their Enforcement

In moving beyond group work and getting to teamwork, it is helpful to have a clear set of expectations among the team members for their obligations to the group and vice versa. Thus, it is useful to hold a number of meetings early in a team’s formation to reach agreement on a set of team *ground rules*. Ground rules constitute a social contract among the members of a team as to the *expected norms* of acceptable team behavior (Scholtes, Joiner, & Streibel, 2003).

Ground rules should cover those situations that are likely to arise on a regular basis:

Governance. How will decisions be reached? By majority vote, by consensus, as recommendation to the team leader, and so forth.

Attendance. If teams are worth forming and meetings are worth having, then members should commit to attending meetings unless there are legitimate reasons for an absence. Moreover, meetings should begin and end on time, and members should commit to keeping to the schedule.

Contribution and Listening to Others. Members should commit to an open exchange of ideas governed by common courtesy. Members should contribute to meetings when they have something to say, and they should listen to the contributions of others.

Assignments and Roles. Members should commit to doing their assignments between meetings according to the team schedule. Moreover, team roles such as meeting leader and secretary can be rotated or assigned as regular team duties.

Task-Specific Rules. Rules may be needed in response to the particular task or particular group of people assembled for the team. These rules should be discussed, committed to paper, and agreed upon early in the team's formation.

Rule Enforcement. How will violations of the rules be dealt with? Sometimes simply keeping public records of attendance, timely delivery of work product, and other statistics is enough to shape up those with a tendency to go astray. More direct challenges to team coherence, such as freeloading, need to be dealt with swiftly and directly. Sometimes frank team discussions with those who are not carrying their weight are enough to rectify the problem. Other times, it may be necessary to censure or expel an errant member for the good of the team.

Although developing effective teams is not easy, teams that explicitly set clear expectations by discussing and writing out ground rules are well on the way to a more positive experience.

Exploration Exercise

Draft a set of team ground rules for a real group or team that you are now a part of or once were a part of.

9.3 UNDERSTANDING THE DIFFICULTIES OF TEAMWORK

Modern organizations use teams quite liberally, and their advantages are significant; the pursuit of improved teamwork is a laudable organizational goal. Nonetheless, all work in groups and teams must face up to a simple fact:

Working in teams is more complex than working alone.

Here, I mean “complex” in a mathematical sense, and we can make some progress by considering several mathematical models that can help us understand some of the ways in which teamwork becomes harder as team size increases. In particular, we consider a little model of teamwise deciding and doing, a little model of the

probability of teamwise conflict, and a number of the ramifications of these models for team selection and sizing.

9.3.1 A Little Model of Teamwise Deciding and Doing

To keep things simple, imagine that when we work alone there are two types of work:

1. Deciding what to do
2. Doing it

Let's call the time required for the first type of work T_1 and for the second type of work T_2 . Overall, the time required to complete the task alone is

$$T_{\text{alone}} = T_1 + T_2 \quad (9.1)$$

When we work on a team of size n , deciding and doing are processed differently. Imagine during the deciding phase that each of the n members takes T_1 units of time to decide what he or she would do and that this thinking is presented to the others sequentially. Thereafter, a simple vote is taken to determine which idea or combination of ideas will be executed. Subsequently, in the doing phase, the n members of the team divide the doing or task time, T_2 , equally. Summing the teamwise deciding and doing time components results in an equation for the total task time for a team of size n as follows:

$$T_{\text{team}} = nT_1 + \frac{T_2}{n} \quad (9.2)$$

Note that Equation (9.2) reduces to Equation (9.1) when $n = 1$.

Taking the derivative of Equation (9.2) with respect to the team size n and setting to zero results in the following equation for optimal (fastest) team, n^* :

$$n^* = \left(\frac{T_2}{T_1} \right)^{1/2} \quad (9.3)$$

For example, consider the case where $T_1 = 0.01$ and $T_2 = 0.99$. Then $n^* = (0.99/0.01)^{1/2} \approx 10$. Figure 9.1 shows the variation of total time required as a function of team size. The time required to perform the task with the optimally sized team according to this model is one-fifth of the time required by a person working alone. In other words, the speed up ($T_{\text{alone}}/T_{\text{team}}$) of working in a team is roughly five times that of working alone.

The simple model of team decision making and doing helps us think about how teams can help further or hinder the efficient accomplishment of a particular task. We should note that the model does not include the possibility of improved solution quality as a result of more people working on forming a plan. Nor does the model account for the possibility of improved commitment to a solution that

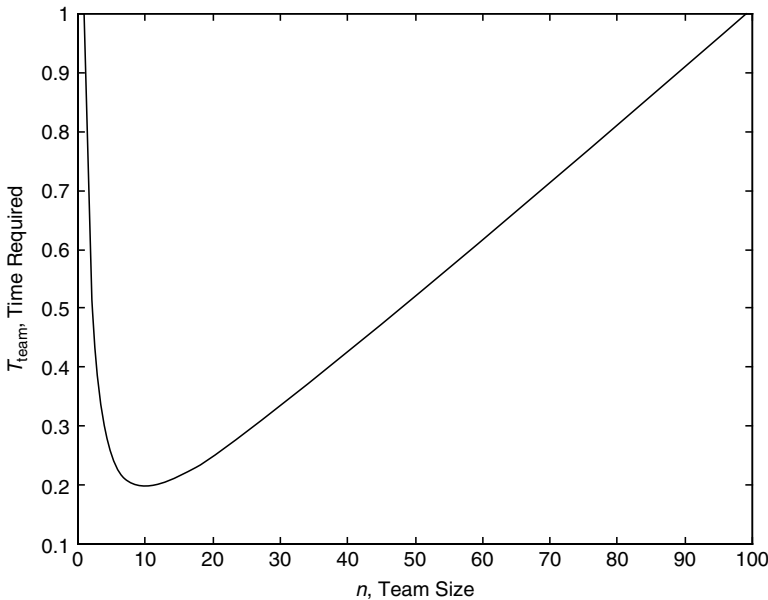


Figure 9.1 Time required for a team to complete a task depends on the decision time T_1 and the task time T_2 . In the figure, task time is approximately 100 times the decision time and the optimal team size is 10.

derives from “ownership” of an idea that comes from shared decision making in a team setting. And while it might be useful to think about and derive such models, here we look at the increased pairwise relationships that come about from larger teams as a source of increased conflict.

9.3.2 A Little Model of Teamwise Conflict (and Creativity)

Increasing decision costs can overshadow the manpower advantage of teams, but another way to look at increased team size is as a source of more *relationships*. We act as individuals, but the fundamental unit of *interaction* is the *pair*. Simple combinatorial counting exercises are useful here. Since a team has n individuals, each of those can pair off with $n - 1$ of the remaining individuals, but we must be careful not to double count. Therefore, there are $n(n - 1)/2$ unique pairs among n team members. Call this number, $r(n)$, the number of relationships.

Communication among pairs of individuals can be a source of creativity and innovation, or it can be a source of conflict. Imagine we are considering the possibility of conflict, and call the quantity p the probability of a conflict between a pair of individuals. The probability that there will be conflict between in at least one relationship on a team of size n may be given by the following expression:

$$P(\text{conflict}) = 1 - (1 - p)^{r(n)} \quad (9.4)$$

Figure 9.2 shows the probability of at least one conflict on a team as a function of the pairwise probability of conflict and team size. The probability of conflict on a team will be greater than $1 - \alpha$ when $\ln 1 - \alpha > r \ln(1 - p)$. Define the critical team size, n_c , as the value that makes the inequality an equality as follows:

$$n_c = \frac{1 + \sqrt{1 + 4c}}{2} \tag{9.5}$$

where

$$c = 2 \frac{\ln 1 - \alpha}{\ln 1 - p}$$

For large n , Equation (9.5) may be approximated as $n_c = \sqrt{c}$. For small p values, Equation (9.5) may be approximated as follows:

$$n_c = \sqrt{\frac{-2 \ln 1 - \alpha}{p}} \tag{9.6}$$

The little model uses fairly simple assumptions to predict the probability of conflict. Even with fairly small relationshipwise probabilities of conflict, the probability of some team conflict grows rapidly with increased team size and suggests one of the reasons why teamwork is so difficult.

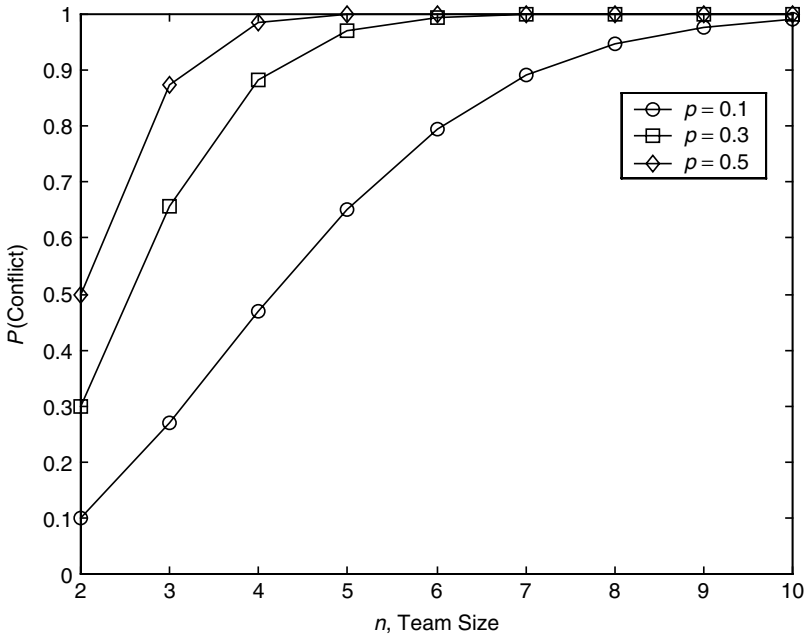


Figure 9.2 Probability of conflict (or other team property) goes up rapidly as a function of team size at fixed probability of pairwise conflict.

Interestingly, however, the same equation applies to teamwise creativity, if we simply interpret the probability p as the probability that a given pair will spark a creative idea and the probability $1 - \alpha$ as the threshold probability of teamwise creativity. Even with modest p values, relatively small teams will have high probabilities of having one creative pair, if not more.

9.4 WHY COOPERATION ISN'T EASY

One of the obstacles to effective team formation is the sheer complexity of the enterprise, but ever since kindergarten, we have been exhorted to “be cooperative” and “share” with our fellow human beings. Why isn’t it easier for us to just get along, cooperate, and get the job done?

Political scientists have puzzled over this question for years, and Axelrod’s idealized computer studies of the *evolution of cooperation* (Axelrod, 1984) have offered some interesting answers to this question. This is not the place to explore those studies in detail, but it is useful to look at the idealized problem of conflict and cooperation used by political scientists to dissect questions of this nature, the so-called *prisoner’s dilemma problem*. The prisoner’s dilemma problem is given its name because it idealizes the situation faced by a pair of criminals who have been caught by the police. In such a situation, each prisoner faces the choice of remaining silent (cooperating with his or her fellow prisoner) or taking a reduced sentence in exchange for ratting out his or her partner in crime (defecting). Many social and organizational problems may be viewed in similar terms (Miller, 1992).

A common, analogous situation in a team setting is that team members may cooperate with fellow team members and do their jobs or they may defect from the team by freeloading and letting others shoulder their burden. It is exactly this situation that causes many of us to remember group projects in less than positive terms.

Table 9.1 depicts a typical payoff matrix for the teammate’s (prisoner’s) dilemma. The payoff to team member 1 is listed first and that to team member 2 is listed second. Note that when both team members work, the individual rewards are high and the sum of individual awards are highest. When one teammate loaf, that individual is rewarded with more free time, credit for the finished product, but the working teammate pays the price by having to shoulder the entire burden. When faced with a situation such as this, many teammates would be tempted to loaf themselves. In the loaf-loaf case, the teammate who was working receives an increase in payoff (no longer working so hard), but the sum of the individual payoffs is minimal.

When viewed in this manner, perhaps it is less surprising that cooperation is so difficult to achieve. Many circumstances on teams and in organizations have this sort of incentive structure to them, and special efforts must be made to reach agreement among team members as to what constitutes good team and team member performance. An important element to creating high-performance teams is the holding of effective meetings.

Table 9.1 Typical Payoff Matrix for Two-Member Teammate's Dilemma Problem

		Member 2	
		Cooperate (Work)	Defect (Loaf)
Member 1	Cooperate (Work)	(6, 6)	(0, 10)
	Defect (Loaf)	(10, 0)	(2, 2)

9.5 MEETINGS, MEETINGS, AND MORE MEETINGS

Meetings are a necessary evil in team and group life, but they need not be as evil as they often are. Meetings come in almost an infinite variety of shapes and sizes. There are regular staff meetings, one-on-one meetings, huddles, sales meetings, client meetings, crisis meetings, problem-solving meetings, brainstorming meetings, to name a few. It is important to review the three essential items that help make every meeting a success and pay special attention to problem-solving or brainstorming meetings.

9.5.1 Three Little Keys to Meeting Happiness

This may sound simple, but there are three things about meetings that are really important:

1. They should start on time.
2. They should end on time.
3. They should have an agenda.

Meetings usually involve busy people who are highly paid. Wasting just 10 minutes in starting or ending late in a weekly meeting involving 10 people wastes approximately 87 hours or over 2 person-weeks in a year. Valuing team member time at \$100/hour, this totals roughly \$9000 down the drain.

It is surprising the number of meetings that take place without an agenda. This is almost always a mistake. Team members want to know why they are meeting and what topics will be covered. Elaborate agendas printed in color are not necessary; a simple handwritten list of topics copied at the last minute will do in a pinch, but some planning should go into the topic selection and sequence. Of course, surprises can arise during the course of a meeting, and the meeting leader can modify the agenda on the fly if it seems prudent, but having an agenda and following a schedule are often enough to have above-average meetings and team productivity.

9.5.2 A Day in the Life of a Typical Problem-Solving Meeting

One of the most important meetings—and one of the most nettlesome—is the problem-solving or brainstorming meeting. In such meetings, teams are under the gun to come up with a solution to a nasty problem or to propose alternatives to exploit a juicy opportunity. Either way, the urgency of the situation and the need to innovate on the spot, places a premium on effective meeting structure and management. These matters have long been studied by organizational specialists, and effective meeting procedures and protocols exist, but it is surprising the number of teams and organizations that have not adopted any of these methods. Here, we probe the anatomy of a typical problem-solving session. Be warned: It is not a pretty sight, but you will recognize the problems discussed. This discussion leads naturally to a more structured approach to problem solving in a group setting. The adoption of this single technique can boost substantially the creativity, quality, and quantity of the solutions generated by even the stodgiest of organizations.

To set the stage, imagine that you've just learned of a difficult problem facing your team. Your group leader calls a meeting to discuss the difficulty, and at the appointed hour the troops gather. The high-priced talent sitting around the table knows the importance of this moment. The meeting begins. The group leader briefly outlines the difficulty and throws the meeting open for ideas. One group member begins, first raising several aspects of the difficulty that the group leader omitted from his problem description, then proposing a specific solution. A second group member challenges the effectiveness of the first member's solution on the basis of cost and also raises several other unreported aspects of the problem. She finishes her statement with her own proposed solution. A third group member finds the first two solutions inadequate on the basis of implementation time and suggests a third solution. And on it goes.

The meeting continues in this manner, with group members proposing and rejecting each other's solutions, until finally the group leader, realizing that the meeting is going nowhere, takes over. As a good leader, the best he or she can do at this point is to piece together a solution from the best suggestions made so far. A more autocratic leader simply announces the solution, a solution that the careful listener heard in the meeting opening and the leader's subsequent remarks. Either way, the group members leave with something of an empty feeling, knowing that, yet again, the group's creativity and innovative potential have gone largely untapped.

9.5.3 What's Wrong?

The scenario described above is all too familiar in business, but the reasons for the failure of most unstructured brainstorming or problem-solving meetings are fairly easy to pinpoint:

1. Inadequate discussion of the various facets of the problem
2. Premature criticism of partial solutions
3. Mixed discussion of solutions and criteria or objectives
4. Inhibition of full exploration of ideas by a leader-follower dynamic

The remainder of this section examines how each of these factors can inhibit group brainstorming productivity.

The first difficulty in unstructured problem solving is that the problem does not usually receive an adequate initial airing. In our imaginary scenario, the meeting leader started off with his view of the problem, but other people around the table obviously had additional information and different viewpoints that could have been helpful in understanding the problem more fully. Since unstructured meetings allow any kind of discussion at any time, as soon as the meeting is opened up to the group, natural human impatience almost guarantees that solutions will be proposed before the problem has received adequate discussion. This is detrimental to a group's ability to come to consensus because there is no shared vision of the range and complexity of the problem.

The usual unstructured meeting has a serial idea–criticize–idea–criticize rhythm to it, which is particularly harmful to a group's problem-solving productivity. Finding a solution to a problem usually requires the recombination of a number of notions from a number of sources to arrive at something that works. If notions are disposed of before they've had a chance either to generate or inspire other solutions or refinements, or to be recombined with other partial solutions, the end result will be less satisfactory than it otherwise might have been (i.e., had more partial solutions survived to be considered in the final analysis).

The unstructured nature of the typical meeting also leads to a mixed discussion of partial solutions along with criteria for judging those solutions. Premature rejection of partial solutions is often accomplished by raising a particular criterion by which the proposed solution is judged more or less inadequate. Of course, this disregards the other eight criteria that the solution may fully satisfy and points out the difficulty of viewing solutions in isolation with particular criteria. There are almost always trade-offs to make in choosing solutions to tough problems, and it is better to postpone the consideration of all solutions in the context of all criteria than to use individual criteria as bullets to shoot down each new idea that dares to raise its innovative little head.

The last-but-not-least difficulty in many meetings is the leader–follower dynamic. In many organizations, leaders are accustomed to making decisions without much input from those they lead; typically, a manager asks for input only to unveil the “correct” answer at the end of the “brainstorming” session. Thus many seasoned veterans come to such sessions with the idea of listening for hints about the Politburo's chosen solution rather than listening and contributing to a genuinely creative experience.

Formal managers are necessary in all organizations, and these managers have the right and duty at times to exercise their decision-making authority. When they call a brainstorming session, however, they have a moral obligation to their people

to listen to their ideas and a fiduciary responsibility to corporate shareholders (or organizational backers) to try to reach the best solution possible. This requires some restructuring of the way meetings are conducted, if only to overcome the tendency of leaders to lead and followers to follow.

The four difficulties of unstructured brainstorming—inadequate discussion of the problem, premature criticism of alternatives, mixed discussion of solutions and criteria, and the workings of the leader–follower dynamic—remind us of the difficulties faced by the individual writer as he or she tries to get thoughts on paper. There, writer’s block can be attributed to trying to create and criticize simultaneously. In a group problem-solving session the same conflict between creating and criticizing arises, but the size of the group complicates and intensifies the destructive reaction between the creative juices and the critical venom. Many meetings turn into survival-of-the-loudest (or longest-winded) sessions or, worse, a contest where only the biggest boss’s ideas get considered. In the next section, we’ll examine a structured approach to brainstorming that separates the creative and critical thinking throughout the problem-solving process, thereby permitting group productivity and creativity to flourish.

9.5.4 Structured Brainstorming

After sitting through dozens of meetings and witnessing hundreds of good ideas being shot down in the usual fashion, one begins to wonder whether there might be a better way to solve problems in a group. I know I was ripe for my first encounter with brainstorming techniques when I took a software sales training course in Indianapolis in the late 1970s. The brainstorming protocol taught was based on an adaptation of Alex Osborn’s (1963) original protocol; it’s been used widely at General Electric and other innovative firms. Many variations on this technique have been published and are used. Here, we look at the props, personnel, and rules required for one form of structured brainstorming.

There are a few physical props required for structured brainstorming:

1. Large flip charts
2. Adhesive tape
3. A large felt-tip marker

The flip charts are used to record the proceedings of the brainstorming session; adhesive tape (masking tape works well) is used to secure the flip-chart sheets to the walls in the meeting room; and the felt-tip marker is used to record the proceedings. Sometimes people suggest that a blackboard be used, but this is inferior to flip charts because most rooms do not have enough space to record a full meeting and blackboards are not a permanent record. If a session is going well, dozens of flip charts can be filled in a matter of minutes, and it is very easy to get a meeting record of 25 to 50 sheets. It is also unacceptable to forgo a common public recording of the proceedings; it is important that individuals know and agree to what is being recorded, and it is important for everyone to have access to the “shared memory” of the full meeting record at any time.

Brainstorming works best in groups of three or more, and during the session all members of the group must have equal status, whether they belong to management or to the rank and file. Initially, one person volunteers or is designated to be the scribe. He or she stands at the flip chart and records the proceedings as accurately as possible. The scribe is not a meeting leader and is authorized only to record, not filter, information. He or she is allowed to ask questions to clarify a point so it can be accurately recorded and may call attention to procedural matters, but while a person holds the marker as scribe he or she is prohibited from making a creative or critical contribution to the session. This rule is very important: It prevents the scribe from slipping into a “leader” role by prohibiting him or her from taking too active a part. To be fair, however, a scribe wishing to offer a contribution to the session can become a participant by handing the marker to another group member, who then becomes the new scribe. Scribehood, in this way, can and should be shared by different group members.

With proper props and a scribe in place, the structured brainstorming session can begin. In its normal course it follows six steps in the following order:

1. Discuss the mess.
2. Define the problem.
3. Generate solution alternatives.
4. Generate and select solution criteria.
5. Rate alternatives according to the criteria.
6. Select a proposed solution or set of solutions.

In the remainder of this section, we examine what is meant by each of these steps and why they are so ordered.

Discuss the Mess

Sometimes problems are simple enough that short briefings by a group leader are enough to understand the difficulty. More often than not, however, real-world problems are fairly complex, requiring the input of many group members to flesh out their full extent. During this initial phase of brainstorming, members discuss the mess; that is, they bring up background information, historical information, the present situation, other solutions that have been tried, and any other information that may help the group understand the difficulty. During this phase it is important to require that there be no debate or argument. Group members may independently present their different views of the world and all views are recorded by the scribe. There should be no attempt to organize the material in any way, and members should be encouraged to associate freely. Contributors should be brief and to the point; long speeches and war stories should be discouraged. Additionally, some effort should be made to avoid being prescriptive at this point because there is as yet no problem to solve. There will be ample time for generation of alternatives later in the process; it is more productive during this phase to concentrate on symptoms of difficulty and hypotheses regarding root causes.

After discussing the mess for a time, it is common for members to begin to sense that the group's wheels are spinning. Issues are repeated or packaged in new wording, but little new information is coming out. Such repetition is often a signal that the mess has been sufficiently discussed. At this point, the scribe or any other group member sensing a slowdown can ask whether the group is ready to define the problem. It may be useful at this point to go back over the session history, to see if other ideas are generated associatively. Once the group is ready to move on, it is time to define the problem.

Define the Problem

During the discussion of the mess, many issues, both germane and peripheral, are invoked. During the second phase, it is time to focus on which issues should be tackled during the remainder of the session. In terms of the writing model of Chapter 5, discussing the mess is analogous to directed creation, and defining the problem is analogous to revision. One difference between the writing model and a problem-solving meeting is that the meeting is a group activity, and it is important to come to a succinct statement of the problem that the group can agree to. One way to avoid unnecessary conflict is to tend toward inclusiveness in the problem statement. At this stage, as long as the problem definition is fairly well on target, a somewhat larger definition that encompasses the views of the whole group is better than one that arbitrarily excludes some issues important to a significant minority. Thinking ahead to later stages, it may be possible to find solutions that cover those special concerns without much extra effort or cost; even if it isn't possible, the extra concerns can always be discounted at the later stage of formulating a solution or set of solutions.

During the problem definition stage, discussion is permitted but care should be taken to avoid bickering and needless debate. Once a suitable, succinct problem statement has been created, it is time for generation of alternatives to begin.

Generate Alternatives

Generating alternatives is the most exciting part of structured brainstorming. The rules are simple: No holds are barred, all ideas are welcome, and no criticism of any idea is permitted. Not one word. This rule is the moral equivalent of "not crossing out" in freewriting and directed writing. The scribe simply writes down alternatives as they are generated, posting each new sheet of alternatives on the walls around the room. Group members are allowed—they are encouraged—to bounce ideas off one another to create hybrids or embellishments; ideas should flow freely and associatively from one to another. Again, there should be no effort to make ideas come out in any particular order. Human thought is a messy process, and we should let it be so. There will be plenty of time for the harsh light of reality to shine on silly or infeasible alternatives. In the meantime, every outlandish, wacky idea that gets mentioned increases the chances that some creative, innovative, and perhaps more practical idea might pop into someone's mind.

If the problem is sufficiently difficult and more than one session is required, it is often useful to break alternatives generation into multiple sessions. If group members have a chance to “sleep on it,” they often return to the table refreshed with alternatives that would not have occurred to them during a single session.

Generate and Select Criteria

Solutions are only good and bad in relation to criteria that they satisfy or don't, and in this step of the brainstorming session a set of criteria for judging the alternative solutions is generated and selected. During discussion of the mess, many criteria typically get mentioned, so the first part of this phase is to collect candidate criteria by reviewing the “mess.” Additional criteria can and should be added to the list. As with the other creative portions of the procedure, this first pass at generating criteria should avoid criticism and be inclusive. Thereafter a second pass should be made to ensure that each included criterion is essential to project success. If controversy arises, it is still best to err on the side of inclusion. In the final debate, spurious criteria will usually be discounted.

Once the list is culled, a decision must be made on how to score each criterion. This can be as simple as a qualitative judgment of effectiveness (+), ineffectiveness (−), or indifference (\pm), or a simple subjective score (say, 1 to 10). Some criteria lend themselves to a more quantitative evaluation of a relevant statistic, such as expected profit, volume, sales, and so on. Once the choices are made, each alternative solution can then be rated according to the list of criteria.

Rate Alternatives According to the Criteria

Once the alternatives are generated and the criteria are chosen, alternatives can be ranked according to each criterion. The easiest way to go about this is to make a matrix with alternatives listed down one side and criteria listed across the top. In the usual alternatives generation session, some of the solutions will be basic configurations, and others will be features or refinements that can be added to (or taken away from) one or more base configurations. For example, in solving the problem, “obtaining personal transportation to and from work,” base configurations might be

1. Buy a vehicle.
2. Lease a vehicle.
3. Take the bus.
4. Ride a bicycle.
5. Walk.

Refinements that might naturally arise during the generation of alternatives could include a listing of specifications of the cars that might be purchased or leased, the type of purchase or lease plan, arrangements for maintenance, and so forth.

When listing each feature in the evaluation matrix, it is convenient to group features with their base configurations so they can be considered for inclusion or exclusion independently.

Select a Solution or Set of Solutions

After the matrix is filled out, it is time to do some deciding, or at least some culling of the list. There are formal decision-making procedures for using multicriteria ratings such as these, but often the process of going through the brainstorming exercise and filling out the evaluation matrix will sufficiently focus the group's attention on the best solution or solutions. If this happens, great! If not, it is likely that two or more subgroups feel that there are significantly different solutions that are best for the organization. In these cases, the best thing to do is not to seek compromise. Subgroups espousing different solutions should hammer out separate proposals, and the final decision should be made in a manner consistent with normal organizational decision-making procedures.

Sticker Voting: A Quick-and-Dirty Shortcut

Some decisions deserve the full brainstorming treatment as described above. For others, either the costs of having a group sit around and go through the entire procedure are too great or action is required fairly quickly and cannot wait for the full procedure to run its course. In these cases, there is a useful abbreviated scheme that can quickly determine whether there is consensus on the outline of a solution.

In this shortcut, called sticker voting, the brainstorming process begins with the first four steps: (1) discuss the mess, (2) define the problem, (3) generate alternative solutions, and (4) generate and select solution criteria. (If time is really pressing, even the fourth step can be dropped.) Thereafter members of the group are each given a set of colored stickers and are asked to vote by placing their stickers directly on the flip-chart sheets next to the elements of a solution they favor. A somewhat chaotic scene usually follows, with members placing their stickers, horse-trading votes, and bumping into each other as they make their decisions.

After the dust settles, large clusters of stickers identify the most-favored elements of a solution, and the number of sticker votes may be recorded and passed along as the group's recommendation. The shortcut relies fairly heavily on the group members' intuition regarding the connection between solution elements and criteria; by not going through the formal process of considering solution elements against each of the criteria, it is possible that group members will miss important trade-offs in making their evaluations. Nonetheless, in cases where a quick or inexpensive recommendation is necessary, abbreviated brainstorming with sticker voting brings the benefit of a full discussion of the mess and alternatives without the protracted evaluation of solutions against criteria.

9.5.5 Putting Structured Brainstorming to Work

The process we have examined is fairly straightforward, and if the rules of engagement are followed closely, the result can hardly help but be an improvement over the usual serial idea–criticize–idea–criticize approach adopted in most unstructured meetings. To get some experience using the technique, try the next exercise.

The beauty of structured brainstorming is in its ruthless separation of the creative and critical components of the process, as well as its prevention of the leader–follower group dynamic. Practiced regularly, it can help boost the quantity and quality of the solutions created by any group with which you are associated.

Exploration Exercise

Apply structured brainstorming to the problem of finding engaging employment.

SUMMARY

In this chapter, we have considered the current popularity of forming teams in modern organizations in light of some of the obstacles and opportunities for so doing.

We started by distinguishing between groups and teams by examining recent definitions from current teamwork research. One key difference is that working groups rely on individual contribution and accountability, whereas teams rely on combined effort and mutual accountability. These distinctions led to a discussion of team ground rules and how they help align expectations.

Thereafter, some of the difficulties of forming effective teams were considered. First, the complexity of teams was examined in light of two little models: the deciding–doing model and a model of the probability of team conflict. These led to discussion of the prisoner’s dilemma problem recast as the teammate’s dilemma problem to help understand why team cooperation is so difficult to achieve. Oftentimes, individuals who cooperate with the team goals are forced to carry freeloaders who choose to do less than their fair share. Understanding this dilemma adds force to the establishment of team ground rules and norms.

Finally, we recognized that teams meet fairly frequently and that even modest improvements in meeting efficiency and decision quality can greatly improve organizational productivity. The simple measures of starting and ending on time and following an agenda were advanced as one way to ensure that meetings are more effective. In addition, a structured methodology of holding brainstorming or problem-solving meetings is an effective means to getting ideas discussed and then assembled to form high-quality solutions.

EXERCISES

1. Consider a group project experience in your past where significant freeloading was in evidence. Write a short essay describing the situation, how the project was completed, and the interpersonal conflicts that took place.

2. Consider the best team or group experience of your life. Write a short essay describing the situation. Identify why you now view the experience as positive. Discuss your role and that of other key members of the team or group in making the experience a positive one. Despite the positive nature of the memories, also describe any freeloading or other nonproductive behavior by team members and its impact on the team experience.
3. Form a group of three or more members, and apply the structured brainstorming procedure (or the abbreviated scheme with sticker voting) to “solve” a current problem in your organization.
4. Form three or more teams consisting of three or more individuals each. Select a current problem facing your organization and have each team solve the same problem using the structured brainstorming protocol. After the solutions are complete, convene a meeting of all teams and compare and contrast the selected solutions.
5. Select a problem that was recently solved in your organization by traditional, unstructured means. Perform structured brainstorming on the same problem, individually or in a group. As much as possible, ignore the previous solution. Compare and contrast the solutions derived by structured and unstructured means.
6. Consider the deciding–doing model of team efficiency [Equation (9.2)] and apply it to a team project you have worked on. Specifically, tally the total time spent in meetings versus the total time spent working on getting the project done. Calculate the optimal team size. Consider whether your team is larger or smaller than that number.