SOUNDVIEW Executive Book Summaries™

The Art of the Learning Organization

THE FIFTH DISCIPLINE

By Peter M. Senge

THE SUMMARY IN BRIEF

Have you ever been involved with a team of people who functioned together superbly? It may have been in business, school, or sports, but it probably happened only once or twice in your lifetime. People trusted each other, complemented each other's strengths, compensated for each other's weaknesses, aimed for goals higher than anyone might have dared individually — and as a result produced an extraordinary outcome.

Such teams display special characteristics: Each member is committed to continual improvement, each suspends judgment as to what's possible and so removes mental limitations, each shares a vision of greatness, and the team's collective IQ is far greater than any individual's. Team members also recognize and understand the system in which they operate and how they can influence it.

These characteristics describe the essence of a learning organization. As with any team, the organization doesn't start off great, it *learns* to be great. In this summary you'll begin to see how you can recreate that special atmosphere through the practice of each of five disciplines: systems thinking, personal mastery, mental models, shared vision, and team learning.

Sound unconventional? Well, if you have trouble motivating your troops or working with your counterparts in other functions, then you'll probably agree that traditional top-down management has outlived its usefulness. The world is too complex for one leader to figure it all out and impose his or her views on the rest of the organization. The organizations that will excel in years to come will be those that understand how to gain the commitment of employees at all levels and continually expand their capacity to learn.

In the new learning organization, your people will aim high, learn to create the results they desire, and reap the bottom-line benefits necessary to sustain success in the global marketplace. Says Arie De Geus, head of planning for Royal Dutch/Shell, "The ability to learn faster than your competitors may be the only sustainable competitive advantage." Read on for a new view of what the corporation can be.

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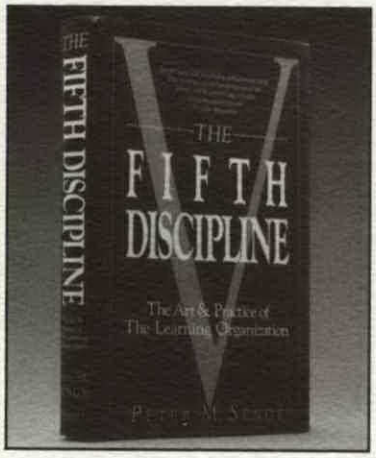

SELECTED BY SOUNDVIEW AS AN OUTSTANDING BOOK FOR BUSINESS PEOPLE

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THE SUMMARY

From an early age, we're taught to break apart problems in order to make complex tasks and subjects easier to deal with. But this creates a bigger problem — we lose the ability to see the consequences of our actions, and we lose a sense of connection to a larger whole.

In this summary, you'll begin to learn how to see the whole again through systems thinking, the fifth discipline. You'll also learn how to gain and sustain an advantage by practicing its sister disciplines: personal mastery, mental models, shared vision, and team learning.

THE FIVE DISCIPLINES

Learning organizations learn to innovate constantly by paying attention to five "component technologies." These disciplines are never mastered; the best organizations practice them continuously. And while organizations develop them separately, the presence of each is critical to success:

Systems Thinking. Systems thinking helps us see patterns and learn to reinforce or change them effectively. Unfortunately, we usually focus on isolated parts of the system instead and then wonder why our efforts at solving problems or perpetuating success fail. Systems thinking also fuses the other four disciplines into a coherent whole that keeps them from turning into fads or gimmicks, which is why it's the all-important "fifth" discipline.

Personal Mastery. Mastery implies a high level of proficiency, and the proficient can consistently bring about the results they desire. In seeking personal mastery, we clarify and deepen our vision, focus our energy, develop patience, and, in general, approach life as an artist approaches the creation of a work of art.

Mental Models. We understand the world and take action in it based on notions and assumptions that may reside deeply in the psyche. We may not be aware of the effect these models have on our perception and behavior, yet they have the power to move us forward or hold us back.

Shared Vision. No organization becomes great without goals, values, and missions that become shared throughout the organization. A "vision statement" or the leader's charisma is not enough. A genuine vision breeds excellence and learning because people in the organization want to pursue these goals.

Team Learning. Often it seems that teams made up of individuals with IQs exceeding 120 have a collective two-digit IQ. Why? They haven't really learned to work together. True learning begins with dialogue, in which members suspend assumptions and think together to solve problems or chart the future.

SEE THE WORLD ANEW

Systems thinking is a discipline for seeing wholes, a framework for seeing patterns and interrelationships. It's especially important to see the world as a whole as it grows more and more complex. Complexity can overwhelm and undermine: "It's the system. I have no control." Systems thinking makes these realities more manageable; it's the antidote for feelings of helplessness. By seeing the patterns that lie behind events and details, we can actually simplify life.

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Seeing Circles of Causality

Though we may see straight lines, reality is made up of circles. Our language and its subject-verb-object structure actually encourages us to see straight lines, so the first step is to overcome its limitations.

THE LAWS OF THE FIFTH DISCIPLINE

The fifth discipline — systems thinking — is the cornerstone of the learning organization. An analysis of systems thinking reveals its laws:

1. *Today's problems come from yesterday's solutions.* We're often puzzled by the causes of our problems, but remembering solutions to past problems provides insight. For instance, why are salespeople spending 20 percent more time dealing with angry customers' late shipments? Because a new manager "solved" the problem of high inventory costs some time ago by depleting the inventory.

2. *The harder you push, the harder the system pushes back.* We've all felt it — the more you try to improve things, the more effort is required. For instance, say your product starts to lose market share. Your inclination is to market it more aggressively, so you spend more money on advertising or lower the price. But in doing so, you take away resources from other parts of the company, and quality declines. In the long run, you lose even more customers.

3. *Behavior grows better before it grows worse.* If you intervene to improve things, you succeed, but only in the short term. When you increased advertising for your product in the last example, for instance, its sales may have improved. When your short-term success turns into long-term decline, however, it's hard to recognize the connection between the two.

4. *The easy way out usually leads back in.* When we stick to what we know best and apply familiar or textbook solutions to problems, we find comfort. Relying on familiar solutions even while problems persist indicates nonsystemic thinking — the "what we need here is a bigger hammer" syndrome.

5. *The cure can be worse than the disease.* The familiar solution is sometimes not just ineffective, it can be dangerous. For instance, it's tempting to call in a consultant to deal with a personnel problem. She comes in, solves the problem, and leaves. But you've simply shifted the burden to an intervenor, who becomes more necessary and powerful as problems recur.

Any long-term solution must permit the system to solve its own problems.

6. *Faster is slower.* All natural systems, whether ecosystems or organizations, have an optimal rate of growth that is far slower than the fast pace most of us think is desirable. The system will compensate for fast growth by slowing down, even if it means death.

7. *Cause and effect are not closely related in time and space.* Most of us assume that cause and effect occur close together. That makes it hard to find the causes that effects — like sagging profits or drug abuse — indicate exist. The first step in learning how to view reality systemically is to dispense with simple cause-and-effect thinking and learn to see that often *we* are at the root of our problems, not external adversaries or events.

8. *Small changes can produce big results, but the areas of highest leverage are often the least obvious.* Small, well-focused actions can produce solid improvements — but only if done in the right place. This is called *leverage*. Unfortunately, it's hard for most people in a system to see where these high leverage points lie. Learning to see the structure rather than the events it produces is a good beginning.

9. *You can have your cake and eat it too, but not at once.* Sometimes knotty dilemmas, from a systems point of view, aren't dilemmas at all. Once you change from a "snapshot" to a "process" mode of thinking, they appear differently.

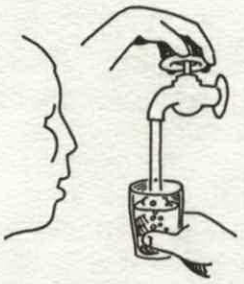
For instance, for years American manufacturers thought the choice was simple: high quality or low cost, but not both. In fact, manufacturing process improvements can lead to less rework, fewer quality inspections, lower warranty costs, and reduced advertising expenditures, all of which lead to lower production and marketing costs, and higher quality. Manufacturers who discovered this, however, learned they couldn't have both immediately — they had to wait months if not years for the cost benefits of a quality program to become clear.

10. *Dividing an elephant in half does not produce two small elephants.* Systems are alive, and their character depends on the whole. To understand difficult managerial problems or plot strategy, you'll have to see the whole system that generates the issues.

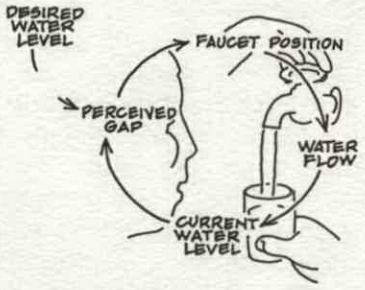
An old Sufi tale makes the point: Three blind men happen along an elephant in the road, and each touches it to see what it is. The first man feels an ear and decides "it is broad, like a rug." The second man holds the trunk and decides it is a straight and hollow pipe. The third man touches the front leg and decides it's "mighty and firm, like a pillar."

These men are like the heads of manufacturing, marketing, and research in a large organization. All have a hold on a different aspect of the system and have trouble seeing how their functions interact.

These diagrams show that even so simple a concept as "filling a glass of water" is a system. Normally we view the event like this:



But as we fill the glass, we watch the water level rise and monitor the gap between the present level and the level to which we want it filled. In this "water regulation system," there are five variables: our own desired level, the current water level, the gap between the two, the faucet position, and the water flow. These variables are organized in a circle or loop of cause-effect relationships called a feedback process, a process that works continuously to bring the water to the desired level:



In English we might say "I am filling the glass of water," which implies one-way causality. Even more precisely: "My hand on the faucet is controlling the rate of water flow into the glass." Yet that describes only half of the process — the linkages from faucet position to water flow to water level.

You can see from the diagram that it would be just as true, though just as incomplete, to say, "The level of water in the glass is controlling my hand." Most complete: "My intent to fill a glass of water creates a system that causes water to flow in when the level is low, then shuts off the flow when the glass is full." The structure, in other words, causes the behavior.

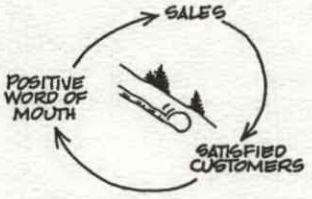
Seeing the world in terms of causality ("I am filling the glass of water") shows that we believe ourselves to be at the center of reality and operating in a world of inanimate objects. From a systems perspective, however, humans are part of the feedback process, not apart from it.

Seeing the world from this point of view causes a major shift in awareness, because now you are conscious of how you continually influence — and are influenced by — reality.

Linear thinkers are always looking for a thing or person who is responsible. Systems thinkers take on greater responsibility for events, because their perspective suggests that everyone shares responsibility for problems generated by a system.

Reinforcing and Balancing Feedback, Delays

Reinforcing feedback in systems is an engine for growth or decline, and understanding how it operates permits you to influence the system. A simple example is the "virtuous" cycle, or snowball effect. Many good products build word-of-mouth sales. And the more products sold, the more mouths there are to talk about the product, which leads to greater sales.



Accelerating growth or decline (the "vicious" cycle) usually does not run unchecked by nature, of course, because reinforcing processes don't occur in isolation. Limits are encountered, which are a form of *balancing* feedback, the second basic element of systems thinking.

Balancing systems seek stability. If you like the system's goals, you'll be happy. If not, you'll have to change the goal or weaken its influence or else all your efforts to change matters will come to naught.

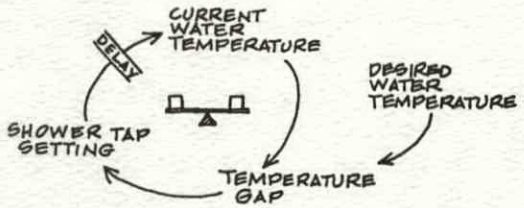
Such systems seem to have their own agenda, because self-correction mechanisms try to maintain a goal. For instance, take a manager forced by budgetary constraints to trim staff. Because the work level remains the same, the savings are lost through farming out the work or paying overtime. This balancing system's agenda? To get a certain amount of work done.

Delays, interruptions between actions and their consequences, are the third building block in systems language. Delays in particular make it seem as if systems have minds of their own. You meet delays everywhere: You invest now to gain future benefits, you hire a person who may not be productive for a few months, or you spend money on a project that may take years to develop.

These delays are easy to see, though most aren't. The delay between planning and then building new office space, for instance, often results in an overbuilt market that bankrupts developers.

Consider this diagram. It represents adjusting the water temperature in a shower. If there's a ten-second delay in temperature change after

you've turned the knob, you're sure to over- or undercompensate until you get the temperature just right. If you're too aggressive, you may scald yourself — which is why aggressive moves in the business world may do exactly the opposite of what you intended. Each adjustment in this balancing process leads you to your goal of a desired water temperature.



SYSTEMS ARCHETYPES

Now let's see these principles in action.

You'll often find that the patterns controlling the events you encounter recur time and again. When you start to recognize them, they'll provide insight into your personal and business affairs by permitting you to see the whole system that generates a problem and not just an aspect of it. Moreover, recognizing such "archetypes" suggests leverage points where one can change the system and therefore the events it generates.

The "Limits to Growth" Archetype

One archetype (of many) is called Limits to Growth, and it's a familiar pattern to business people. What follows is an analysis of it.

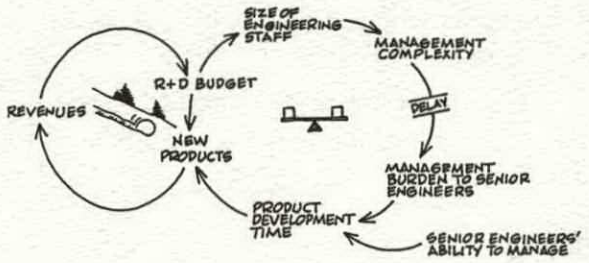
Definition: In a limits-to-growth pattern, a reinforcing process moves to produce a desired result. It creates success but also secondary effects (seen in balancing processes) that slow down the process of success.

Management Principle: Don't push growth. Try to find and remove the factors that limit it.

Where It Is Found: Your organization may grow swiftly, then get bogged down and stop growing. A farmer may increase his yield by adding more and more fertilizer, but then his crop grows larger than the rainfall can sustain. A person may lose a lot of weight in a crash diet, then gain it all back. You might initially solve overload problems by working more hours, but as stress and fatigue set in, your productivity plummets.

In each of these cases, a reinforcing process of improvement operates for a time, then runs up against a balancing process that limits growth.

Understanding and Using the Structure: You'll find this archetype working at all levels in your organization. A high-tech firm, for instance, grows because it can pump out new products very fast. But as the number of products and revenue grow, so do the R&D staff and its budget. The staff becomes increasingly hard to oversee, and the burden falls on the engineers themselves to manage it. As a result, they spend less time on engineering, which leads to longer development times and a slowdown in the very factor that created the success — the rapid introduction of new products.



The balancing factor, as you can see, is the engineers' ability to manage given their time constraints and training.

Pattern of Behavior: Over time, the limit becomes more powerful, and after the initial boom, growth levels off or slows so much that the reinforcing spiral works in reverse and turns into a vicious cycle (revenue falls, so R&D spending falls, so product introduction slows, and revenue falls still lower . . .).

How to Achieve Leverage: Most people try to solve limits-to-growth problems by pushing harder. In this case they might work longer hours, begin even more development projects to offset those that are bogged down, add salespeople to sell more, or increase the advertising budget. Early in the process these strategies may seem to be effective — you start introducing new products at a faster rate and revenues begin to rise again. Nonetheless, the harder you push, the more the balancing process resists your efforts.

The point of leverage lies in the balancing loop, not the reinforcing loop, so the task is to identify and change the limiting factor. In the example, the high-tech firm won't pull out of its decline until it recognizes that a complex research and engineering firm requires skillful management. It can solve its problem in a number of ways: Decentralizing, finding managers skilled in handling engineers, or by training engineers who would prefer the challenge of managing.

PERSONAL MASTERY

Organizations can learn only if the individuals in them are learning. "Personal mastery" is the phrase used to describe the discipline of personal growth, the goal of which is to expand one's ability to produce desired results.

Personal mastery embodies two concepts: First, those engaged in the discipline continually clarify

what's important to them. Second, they constantly attempt to see current reality more clearly.

Those with a high level of personal mastery feel a sense of purpose behind their goals; for them, a vision is a calling, not just a good idea. Lifelong learners, they are inquisitive and feel connected to others and to life itself. They feel part of a larger process which they can influence yet not entirely control.

The Discipline of Personal Mastery

It's best to approach personal mastery as a discipline, a series of practices and principles that must be used to be useful. Here are some of the elements:

1. **Personal Vision**. Most people have goals and objectives, but no sense of a real vision. Maybe you'd like a nicer house or a better job, or a larger market share for one of your products. These are examples of focusing on the means, not the result. For instance, maybe you want a bigger market share in order to be more profitable in order to keep your company independent in order to be true to your purpose in starting it. The last goal has the most value, while the others are means to an end — means that might change over time. The ability to focus on ultimate desires is a cornerstone of personal mastery.

Vision differs from purpose. Vision is a definite picture of a desired future, while purpose is more abstract. Vision: Put a man on the moon by the end of the 1960s. Purpose: Advance man's capacity to explore space.

Nothing happens until there is vision, but vision without a sense of purpose is equally futile. Personal mastery, then, is a discipline of continually focusing and refocusing on what one truly wants — the vision.

2. **Holding Creative Tension**. There are unavoidable gaps between one's vision and current reality. You may want to start a company but lack the capital, for instance. Gaps discourage us, but the gap is itself the source of creative energy. It provides creative tension.

There are only two ways to resolve the tension between reality and the vision. Either vision pulls reality toward it, or reality pulls vision downward (i.e., you lower the vision). Individuals and companies often choose the latter, because it's easy to "declare victory" and walk away from a problem. That releases the tension. But these are the dynamics of compromise and mediocrity. Truly creative people use the gap between what they want and what is to generate energy for change. They remain true to their vision.

3. **Commitment to the Truth**: A relentless willingness to uncover the ways we limit and deceive ourselves, and a willingness to challenge the way things are characterize those with a high degree of mastery. Their quest for truth leads to a deepening awareness of the structures that underlie and generate events, and this awareness leads to the ability to change the structure to produce the results they seek.

MENTAL MODELS

Why do good new ideas rarely get put into practice? Often because they conflict with deep-seated internal images of how the world or the company works. These mental models limit us to familiar ways of thinking and acting, much to our detriment. That's why managing mental models — discovering them, testing their validity, and improving them — can be a breakthrough concept for learning organizations.

Mental models govern how we make sense of the world and how we take action in it. An easy example is the generalization "people are untrustworthy." Such a sentiment shapes how we act and how we perceive the acts of others.

Mental models can be much more complex, especially in business settings. For years these widely held "mental models" among General Motors managers shaped the way GM designed and produced cars:

— "GM is in the business of making money, not cars."

— "Cars are primarily status symbols. Styling is therefore more important than quality."

— "The American car market is isolated from the rest of the world."

— "Workers do not have an important impact on productivity or product quality."

These principles served the industry well for years, but instead of recognizing that they were assumptions that worked well in response to particular conditions, GM felt they were facts — the rules for success in *any* time or place. When Japanese and German automakers taught the American public to appreciate quality, GM lost significant market share.

Incubate a New Business Worldview

Royal Dutch/Shell, among others, has discovered that just as mental models can impede learning and business growth, so too can they accelerate them. Shell understands that by helping managers identify their assumptions, look for contradictions in them, and dream up new strategies based on new assumptions, it can maintain a real competitive advantage.

In 1973, a Shell planning group researched the mental models that shaped the actions of its man-

ORGANIZATIONAL LEARNING DISABILITIES

Most organizations don't live as long as a person. A 1983 survey showed that a third of the companies in the 1970 *Fortune* 500 had vanished. Why?

The following corporate learning "disabilities" — which arise when we view the world in linear, and not systemic, ways — explain the high mortality rate for all companies. The antidote for any of them is to begin to practice the five disciplines of a learning organization.

1. **"I am my position."** Most people confuse their jobs with their identities ("I'm an accountant"). While they understand their daily tasks, people don't understand the purpose of the organizational enterprises they take part in. Instead, they see themselves in a system in which they have little power and no need to take responsibility for poor results.

2. **"The enemy is out there."** Some organizations and people find an external agent to blame when problems arise, a result of looking at the world in non-systemic ways. Focused on our positions, we can't see how our actions have an effect beyond their boundaries. Focusing on an external enemy is almost always a mistake — usually "out there" and "in here" are part of the same system.

3. **The illusion of taking charge.** "Proactive" managers are encouraged and admired when they tackle problems fast, but is taking action against an enemy on the "outside" really proactive? "Proactiveness" is disguised reactiveness. Being truly proactive means seeing how we contribute to our own problems and solving those first.

4. **The fixation on events.** We're dominated by events: last month's sales, the new budget cuts, who got fired, product introductions, and so on. "Events" distract us from seeing long-term patterns of change that lie behind them. That, of course, inhibits us from understanding these patterns. Slow, gradual processes like environmental decay, the erosion of the education system, or a general decline in product quality are much more destructive than sudden events.

5. **The delusion of learning from experience.** We may learn best from experience, but people often never experience the consequences of many of their most important decisions directly. It may take years, for instance, to see the consequences of R&D decisions.

6. **The myth of the management team.** In most organizations, a valiant, experienced, and savvy management team stands ready to battle with problems and dilemmas. Nevertheless, teams in the business world tend to fight for turf and avoid anything that will make them look bad. To keep up the appearance of a cohesive team, they hide disagreement and come up with watered-down decisions that everyone can live with.

agers. The group then showed the managers how their prevailing view — that the oil business would continue as usual — was based on certain assumptions concerning the nature of the political world and the oil industry. The planners also showed how none of these assumptions would hold true in the years to come.

As a result, managers began to construct new mental models based on new assumptions: that oil exploration would have to expand; refinery building would have to slow; and that because different nations would respond differently to events in the world to come, local control for each division would be the best policy.

When the OPEC embargo of 1973-74 hit, Shell was much better prepared than other oil companies to adapt. Competitors reigned in divisions and centralized control, as many companies do in a crisis. Shell did the opposite, which gave their operating companies much more freedom to maneuver, and the company left the 1970s as the strongest of the top seven oil companies — in no small part a result of dissolving tired, outdated mental models and constructing new ones.

SHARED VISION

"What do we want to create?" The answer to that question is the vision you and your people come together to build and share. Unlike the concept of vision that's bandied about these days — the "vision" that emanates from one person or a small group and is imposed on the corporation artificially — shared visions create a commonality that gives a sense of purpose and coherence to all the activities the organization carries out. Few forces in life and the business world are as powerful as shared vision.

Shared vision is vital for learning organizations that want to provide focus and energy for its employees. People learn best when they strive to accomplish things that matter to them. In fact, you can't have a learning organization without shared vision. The overarching goal that the vision establishes brings about not just commitment but new ways of thinking and acting. It fosters risk-taking and experimenting. It also encourages a commitment to the long term.

Building Ford Motor Company or Apple Computer would not have been possible without

shared vision. Henry Ford envisioned everyone, and not just the wealthy, owning cars. The founders of Apple believed in the ability of the computer to empower people. These visions, shared by the employees of each organization, focused energy and created a common identity among different people, which led to great success. A commonly held vision creates the spark that lifts an organization to great heights.

Encouraging Vision

Shared visions emerge from personal visions. Bill O'Brien, CEO of Hanover Insurance: "My vision is not what's important to you. The only vision that motivates you is your vision." Personal visions, of course, are rooted in an individual's values, concerns, and aspirations. Personal mastery, the commitment to truth and creative tension, is the material of personal and thus shared vision.

Mastering the discipline of shared vision means you have to give up the idea that visions come from top management or from an institutionalized planning process. To begin the process of encouraging vision, leaders must instead share their personal visions and ask that employees follow them. Leaders must ask for support, then be patient as the shared vision takes time to emerge. It will grow as people interact with their own visions — as people express their dreams and learn how to listen to the dreams of others. When listening, new insights and beliefs into what's possible will surface.

Bill O'Brien offers insight into the true nature of vision: "Being a visionary leader is not about giving speeches and inspiring the troops. How I spend my day is pretty much the same as how any executive spends his day. Being a visionary leader is about solving day-to-day problems with my vision in mind."

TEAM LEARNING

Team learning is the process of aligning a team to avoid wasted energy and to create the results its members want. Team learning builds on the disciplines of shared vision and personal mastery, because talented teams are, necessarily, made up of talented individuals.

Because the IQ of a team can be much higher than that of any of its members, teams are becoming the key learning unit in organizations.

Dialogue and Discussion

The discipline of team learning involves mastering the practices of dialogue and discussion. In dialogue, team members explore complex issues creatively. They listen to each other with deep regard and suspend their own views to better hear those of others.

In discussion (a word with the same roots as percussion and concussion) views are presented and defended and the team searches for the best view to support decisions. Participants in a discussion often want to win and see their view prevail. While dialogue and discussion can be complementary, most teams can't distinguish between them.

The original meaning of the word *dialogue*, according to physicist David Bohm, suggests a free flow of meaning between people. Bohm contends that in dialogue a group accesses a "larger pool of common meaning" that can't be accessed by individuals alone. The purpose of dialogue, then, is to go beyond the understanding held by each team member, and to explore difficult issues from many points of view.

Bohm identifies three conditions for real dialogue to occur:

- All participants must suspend their assumptions both figuratively and literally — to learn to view them *as* assumptions and not fact, and to "hold" them in front of the group as if suspended for all to see;
- All participants must regard one another as colleagues;
- A facilitator, who "holds" the context of the dialogue, must be present.

After dialogue, decisions must be made and thus comes the need for discussion, where action is the focus.