Learning for a Change

Ten years ago, Peter Senge introduced the idea of the "learning organization." Now he says that for big companies to change, we need to stop thinking like mechanics and to start acting like gardeners.

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It's been almost 10 years since Peter Senge, 51, published "The Fifth Discipline: The Art & Practice of the Learning Organization" (Doubleday/Currency, 1990). The book was more than a business best-seller; it was a breakthrough. It propelled Senge into the front ranks of management thinkers, it created a language of change that people in all kinds of companies could embrace, and it offered a vision of workplaces that were humane and of companies that were built around learning. Along the way, the book sold more than 650,000 copies, spawned a sequel — "The Discipline Fieldbook: Strategies and Tools for Building a Learning Organization" (Doubleday/Currency, 1994) — and gave birth to a worldwide movement.

But that movement hit a few speed bumps. People who adopted the themes and practices of "The Fifth Discipline" sometimes found themselves frustrated by the challenge of bringing about effective change — and sometimes found themselves out of work for trying. Now Senge and his colleagues have published "The Dance of Change: The Challenges to Sustaining Momentum in Learning Organizations" (Doubleday/Currency, March 1999). According to Senge, who is a senior lecturer at the Massachusetts Institute of Technology and a member of the Society for Organizational Learning (SoL) — a global consortium of companies and researchers who are examining learning and change — the new book presents "what we've learned about learning." The book begins with two key lessons: First, initiating and sustaining change is more daunting than the optimistic presentation that was offered in "The Fifth Discipline" had suggested. And second, the task of making change happen requires businesspeople to change the way they think about organizations: "We need to think less like managers and more like biologists," Senge argues.

To learn more about the evolving landscape of organizational learning, Fast Company interviewed Peter Senge in his office on the campus of MIT, in Cambridge, Massachusetts.

What's your assessment of the performance of large-scale change efforts over the past decade?

Most leadership strategies are doomed to failure from the outset. As people have been noting for years, the majority of strategic initiatives that are driven from the top are marginally effective — at best. Corporate reorganizations are even more common than new strategies, but how many reorganizations actually produce companies that are dramatically more effective than they were before? Throw in mergers and acquisitions: Look at all of those that have failed. The traditional model of change — change that is led from the top — has a less-than-impressive track record.

And that's just the public track record. My own experience at MIT and at SoL has mostly been with big companies. How much change have they actually accomplished? If I stand back a considerable distance and ask, "What's the score?" I have to conclude that inertia is winning by a large margin. Of course, there have been enough exceptions to that conclusion to indicate that change is possible. I can identify 20 to 30 examples of significant sustained change efforts in the SoL community. On the other side of the ledger, there are many organizations that haven't gotten to first base when it comes to real change, and many others that have given up trying.

When I look at efforts to create change in big companies over the past 10 years, I have to say that there's enough evidence of success to say that change is possible — and enough evidence of failure to say that it isn't likely. Both of those lessons are important.

Why haven't there been more successful change efforts?

If it were simply a matter of more resources, people would have figured out how to get more resources. If it were a matter of more time, more money, more consultants, or just more effort, we probably would have been able to fill those needs by now. Or if the problem were intelligence — and you could simply assert that most bosses are pretty dumb, or that most CEOs are just not very bright — then presumably the intelligent ones would succeed, their companies would rise to the top, and that would solve the problem. The marketplace would reward the bright ones who could change, and it would punish the dumb ones who couldn't.

But it doesn't seem as if any of those things are happening — which suggests that it's not a matter of resources or intelligence.

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In fact, I can tell you from firsthand experience that a lot of very competent executives fail at producing and sustaining momentum around change. That suggests to me that something more universal is at work here.

So what is the deeper explanation for the failure of corporate change efforts?

At the deepest level, I think that we're witnessing the shift from one age to another. The most universal challenge that we face is the transition from seeing our human institutions as machines to seeing them as embodiments of nature. I've been thinking about this shift for 25 years or more: We need to realize that we're a part of nature, rather than separate from nature.

Think about any environmental problem that we face, from global climate and resource issues to population crises. Or look at the problems that seem to afflict people in organizations: Why are contemporary institutions so inhumane? And somewhere in the middle, between environmental issues and personal issues, there are institutional issues: Why do we view our organizations as rigid hierarchies rather than as communities of practice?

Whether you're talking at the macro, the personal, or the institutional level, the questions all point in the same direction: The real character of an age is evident in how it conditions us to think, and how it conditions us to think determines how it conditions us to act. The thinking and acting of the past 200 years — nurtured in Europe, accelerated in the United States, diffused throughout the world today — is a machine mind-set. That mind-set directly affects how we see organizations — and, therefore, how we think about creating change in those organizations.

What implications does a machine mind-set have for companies that seek to undergo change?

In the Machine Age, the company itself became a machine — a machine for making money. That's a key point in Arie de Geus's book, "The Living Company" (Harvard Business School Press, 1997). Ironically, the word "company" couldn't be more at odds with the idea of a machine. "Company" has roots that go back long before the Industrial Age. In fact, it has the same root as the word "companion": It means "the sharing of bread."

Somehow, during the course of the Industrial Revolution, this very humane sense of "company" changed, and the company became more and more machinelike. For the most part, seeing the company as a machine has worked. There are people who design this machine: They put it together and get it up and working. They are founders. There are people who operate or control the machine: We call them managers. The machine also has owners, and when it operates correctly, it produces income for those owners. It's all about control: A good machine is one that its operators can control — in the service of its owners' objectives.

The company-as-a-machine model fits how people think about and operate conventional companies. And, of course, it fits how people think about changing conventional companies: You have a broken company, and you need to change it, to fix it. You hire a mechanic, who trades out old parts that are broken and brings in new parts that are going to fix the machine. That's why we need "change agents" and leaders who can "drive change."

But go back and consider all of the evidence that says that most change efforts aren't very successful. Here is our first plausible explanation: Companies are actually living organisms, not machines. That might explain why it's so difficult for us to succeed in our efforts to produce change. Perhaps treating companies like machines keeps them from changing, or makes changing them much more difficult. We keep bringing in mechanics — when what we need are gardeners. We keep trying to drive change — when what we need to do is cultivate change. Surprisingly, this mechanical mind-set can afflict those who seek "humane" changes through "learning organizations" just as much as it can afflict those who drive more traditional changes, such as mergers and reorganizations.

Where, specifically, does the mechanical approach go wrong in effecting change?

The easiest way to see this is to look at our interpersonal relationships. In our ordinary experiences with other people, we know that approaching each other in a machinelike way gets us into trouble. We know that the process of changing a relationship is a lot more complicated than the process of changing a flat tire on your car. It requires a willingness to change. It requires a sense of openness, a sense of reciprocity, even a kind of vulnerability. You must be willing to be influenced by another person. You don't have to be willing to be influenced by your damn car! A relationship with a machine is fundamentally a different kind of relationship: It is perfectly appropriate to feel that if it doesn't work, you should fix it. But we get into real trouble whenever we try to "fix" people.

We know how to create and nurture close friendships or family relationships. But when we enter the realm of the organization, we're not sure which domain to invoke. Should we evoke the domain of the machine? After all, much of our daily life is about interacting with computers, tape recorders, automobiles, and ATMs. Or should we evoke the domain of living systems — because a lot of our daily life is about interacting with fam-

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ily, friends, and colleagues?

There are those who come down firmly on the people side: They tend to be HR professionals and line managers — people who understand that relationships, teamwork, and trust are essential to effective operations. But high-level executives are frequently separated from the day-to-day stuff of the enterprise: They look at the organization from the perspective of numbers, financial statements, and prospective deals. Their number-one variable is the company stock price. That outlook distances them substantially from the living, human aspects of the enterprise. You end up with organizational schizophrenia. Some people operate the company as if it were a machine, and some treat it as part of the messy, living world.

What happens when you see a company as a part of nature?

It shifts profoundly how you think about leadership and change. If you use a machine lens, you get leaders who are trying to drive change through formal change programs. If you use a living-systems lens, you get leaders who approach change as if they were growing something, rather than just "changing" something. Even on a large scale, nature doesn't change things mechanically: You don't just pull out the old and replace it with the new. Something new grows, and it eventually supplants the old.

You see the same thing at the level of behaviors: If new behaviors are more effective than old behaviors, then the new behaviors win out. That insight gives us a doorway into a different way to think about how enterprises might change: What if we thought of organizational change as the interplay among the various forces that are involved in growing something new?

Looking at nature, we see that nothing that grows starts large; it always starts small. No one is "in charge," making the growth occur. Instead, growth occurs as a result of the interplay of diverse forces. And these forces fall into two broad categories: self-reinforcing processes, which generate growth, and limiting processes, which can impede growth or stop it altogether. The pattern of growth that occurs unfolds from the interplay of these two types of forces.

Looking at organizations, we find that one of the first things that changes is how we define the term "structure." "The Fifth Discipline" proposed a definition borrowed from system dynamics — which looks at structure in terms of feedback interactions within a system. Our new definition of that term is "a pattern of interdependency that we enact." Again, think about the relationships within a family, rather than those within a company: People come to relate to each other in predictable ways, which form a pattern that then defines the structure of relationships — norms, expectations, taken-for-granted habits of communicating. Those patterns aren't fixed; they can change. And, more to the point, those patterns aren't given. Ultimately, the structures that come into play in our families are the result of the choices that we've made all along the way. We "enact" our families.

All of this applies directly to our ideas about leadership and, in particular, to the cult of the CEO-as-hero. In fact, that cult is one pattern that makes it easier for us to maintain change-averse institutions. When we enact the pattern of the CEO as hero, we infantalize the organization: That kind of behavior keeps everyone else in the company at a stage of development in which they can't accept their own possibilities for creating change. Moreover, it keeps executives from doing things that would genuinely contribute to creating significant change. The cult of the hero-leader only creates a need for more hero-leaders.

How does challenging the idea of the hero-leader promote change?

Deep change comes only through real personal growth — through learning and unlearning. This is the kind of generative work that most executives are precluded from doing by the mechanical mind-set and by the cult of the hero-leader: The hero-leader is the one with "the answers." Most of the other people in the organization can't make deep changes, because they're operating out of compliance, rather than out of commitment. Commitment comes about only when people determine that you are asking them to do something that they really care about. For that reason, if you create compliance-oriented change, you'll get change — but you'll preclude the deeper processes that lead to commitment, and you'll prevent the emergence of self-generated change.

Again, you end up creating a kind of addiction: People change as long as they're being commanded to change — or as long as they can be forced to change. But, as a result, they become still more dependent on change that's driven from the top.

If the idea of the hero-leader takes us in the wrong direction, what's the right direction?

The first problem with all of the stuff that's out there about leadership is that we haven't got a clue about what we're talking about. We use the word "leader" to mean "executive": The leader is the person at the top. That definition says that leadership is synonymous with a position. And if leadership is synonomous with a position, then it doesn't matter what a leader does. All that matters is where the leader sits. If you define a "leader" as an "executive," then you absolutely deny everyone else in an organization the opportunity to be a leader.

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But when we studied leaders inside the companies that are involved in the SoL consortium, that's not what we saw. We had several companies that were able to sustain significant momentum over many years, and there were no executives involved at all. In case after case, the most compelling lesson we learned was that if you want real, significant, sustainable change, you need talented, committed local line leaders. Find the people who are at the heart of the value-generating process — who design, produce, and sell products; who provide services; who talk to customers. Those value-generating activities are the province of the line manager, and if the line manager is not innovating, then innovation is not going to occur.

The next thing we noticed was that, in some organizations, the first round of change activities somehow led to second-order efforts. The original group would spawn a second group, and gradually new practices would spread throughout the organization. How did that happen? We identified people who were "seed carriers." They were internal networkers who knew how to get people talking to one another and how to build informal communities. In effect, they were creating communities of practice. These networkers represent a second type of leadership. Of course, we also found executives who were providing leadership by doing activities that were more mature and more profound than simply offering themselves as heroes. These were executives who focus on acting as a coach or as a mentor.

Out of these observations, we developed our own definition of "leadership." To me, the simplest definition of that word is "the ability to produce change": "We used to operate that way; now we operate this way." Then, using what we saw inside companies, we identified three leadership communities: local line leaders, internal networkers or community builders, and executive leaders. For significant change to take place, you need to create an interplay among those three communities. One community can't be substituted for another. Each community represents part of a necessary set.

What's the best way to begin creating change?

I have never seen a successful organizational-learning program rolled out from the top. Not a single one. Conversely, every change process that I've seen that was sustained and that spread has started small. Usually these programs start with just one team. That team can be any team, including an executive team. At Shell, the critical generative work was done in a top team. Then, in a matter of a year or so, it spread to the top 150 managers, who percolated ideas among themselves — and they, in turn, formed new clusters of teams. At Ford, two teams started working almost in parallel. In case after case, the change effort begins small, and as it takes hold, networks form that carry change into wider groups.

Just as nothing in nature starts big, so the way to start creating change is with a pilot group — a growth seed. As you think about a pilot group, there are certain choices that you have to make in order to make the group work. The first choice goes back to the issue of compliance versus commitment: Will the change effort be driven by authority or by learning? To make that decision is to choose a central path. Then there are reinforcing elements: new guiding ideas; innovations in the infrastructure; theories, methods, and tools.

After a pilot group forms, what are the next steps?

Thinking about nature as the model again leads you to ask, "What are the self-reinforcing processes whereby the seed begins to realize its potential to grow? And what are the limiting processes that come into play as the seed interacts with the soil?"

There are a number of self-reinforcing factors that help a pilot program to take root. People develop a personal stake in it. People see that their colleagues take it seriously, and they want to be part of a network of committed people. There's also a pragmatic factor: It works. There are real business results — so it's worthwhile to become engaged. But the most fundamental reinforcer of a pilot program is hearing people say that they've found a better way of working. Most people would rather work with a group of people who trust one another. Most people would rather walk out of a meeting with the belief that they've just solved an important problem. Most people would rather have fun at work. It may be obvious, but what we've observed again and again is that personal enthusiasm is the initial energizer of any change process. And that enthusiasm feeds on itself. People don't necessarily want to "have a vision" at work or to "conduct dialogue." They want to be part of a team that's fun to work with and that produces results they are proud of.

But even if the pilot has potential to grow, there is no guarantee that growth will occur. All pilot groups encounter "challenges to initiating" — initial limiting processes that can keep growth from ever really starting. For example, it doesn't matter how promising a team is if its members don't have time to commit to the change effort, if they can't reorganize their schedules to accommodate weekly meetings, if they don't have time during which they can get together to reflect. Learning takes time. Invariably, you will get that time back — and then some — because most teams today waste lots of time, and therefore better learning capabilities will make them much more productive than they were before. But first you have to be able to make an investment of time.

Another example of an important potential limiting factor: A change effort has to have some relevance to people. It has to have some connection to them. It has to matter. Why should an engineer need to learn how to conduct a dialogue? Why should she care about that skill? The answer may be that the

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organization trips over certain technical issues that aren't really technical issues; rather, they're problems with internal conversations that lead to fights instead of creative resolutions. The point isn't to learn how to conduct a dialogue. The point is to invest some time and to get some help to change how people work together.

In your new book, you identify the 10 challenges of change. Why focus on challenges?

The short answer: to produce effective leadership. In a natural system, the way to sustain growth is by paying attention to the interplay between reinforcing processes and limiting processes — and by paying special attention to the limiting processes. The limiting processes represent 90% to 98% of the real leverage in sustaining deep change. These 10 challenges are the limiting processes that we've seen again and again. They include processes that operate from the outset of a pilot — such as time and relevance — and they include processes that come into play once a pilot begins to succeed. After an initial success, things tend to get harder, not easier. So, if we want to have effective leadership, if we want to have humane communities that can sustain significant change, we need to learn how to focus on these types of challenges

Are these the only 10 challenges? This is just the first cut; undoubtedly there are others. But if the discourse about change starts to focus on challenges and on strategies for dealing with those challenges, we may be able to build a body of knowledge that will allow for effective leadership and sustainable change.

Back to the first question: A decade after "The Fifth Discipline" appeared, do you think that big companies can change?

Ultimately, organizational learning is about growing something new. Where does new growth take place? Often it happens in the midst of the old. Indeed, often the new grows out of the old. How will the old react? The only realistic expectation is that the traditional system of management, as [W. Edwards] Deming used to label it, will work harder and harder to maintain itself. But growing something new doesn't have to be a battle against the old. It doesn't need to be a fight between believers and nonbelievers. In any case, our Industrial Age management, our Industrial Age organization, and our Industrial Age way of living will not continue. The Industrial Age is not sustainable. It's not sustainable in ecological terms, and it's not sustainable in human terms.

It will change. The only question is how. Once we get out of our machine mind-set, we may discover new aptitudes for growth and change. Until then, change won't come easily.

Sidebar: The 10 Challenges of Change

In "The Dance of Change: The Challenges to Sustaining Momentum in Learning Organizations," Peter Senge and his colleagues identify 10 challenges of change. Grouped into three categories — challenges of initiating change, challenges of sustaining momentum, and challenges of systemwide redesign and rethinking — these 10 items amount to what the authors call "the conditions of the environment that regulate growth."

Challenges of Initiating Change

"We don't have time for this stuff!" People who are involved in a pilot group to initiate a change effort need enough control over their schedules to give their work the time that it needs.

"We have no help!" Members of a pilot group need enough support, coaching, and resources to be able to learn and to do their work effectively.

"This stuff isn't relevant." There need to be people who can make the case for change — who can connect the development of new skills to the real work of the business.

"They're not walking the talk!" A critical test for any change effort: the correlation between espoused values and actual behavior.

Challenges of Sustaining Momentum

"This stuff is . . ." Personal fear and anxiety — concerns about vulnerability and inadequacy — lead members of a pilot group to question a change effort.

"This stuff isn't working!" Change efforts run into measurement problems: Early results don't meet expectations, or traditional metrics don't calibrate to a pilot group's efforts.

"They're acting like a cult!" A pilot group falls prey to arrogance, dividing the company into "believers" and "nonbelievers."

Challenges of Systemwide Redesign and Rethinking

"They . . . never let us do this stuff." The pilot group wants more autonomy; "the powers that be" don't want to lose control.

"We keep reinventing the wheel." Instead of building on previous successes, each group finds that it has to start from scratch.

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"Where are we going?" The larger strategy and purpose of a change effort may be obscured by day-to-day activity. Big question: Can the organization achieve a new definition of success?

Sidebar: Chronology of Learning Organization Concepts

1938: In his book "Experience and Education," John Dewey publicizes the concept of experiential learning as an ongoing cycle of activity.

1940s: The Macy Conferences — featuring Margaret Mead, Gregory Bateson, and Lawrence Kubie — bring "systems thinking" to the awareness of a cross-disciplinary group of intellectuals.

1940s: Scottish psychologist Kenneth Craik coins the term "mental models," which later makes its way to MIT through Marvin Minsky and Seymour Papert.

1946: Kurt Lewin, founding theorist of National Training Laboratories, proposes idea of a "creative tension" between personal vision and a sense of reality.

1956: Edgar Schein's research on brainwashing in Korea paves the way for an understanding of "process consultation."

1960: "The Human Side of Enterprise," by Douglas McGregor, is published.

1961: Jay Forrester publishes "Industrial Dynamics." This book, the first major application of system dynamics to corporations, describes the turbulence within a typical appliance value chain.

1970: Chris Argyris and Donald Schon begin work on "action science," the study of how espoused values clash with the values that underlie real actions.

1972: "The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind," by Donella Meadows and Dennis Meadows, is published. The book draws on Forrester's theories about system dynamics.

1971 to 1979: Erhard Seminars Training (EST) demonstrate the kind of powerful attitude shifts that can occur during a seminar that lasts several days.

1979: Consultant Charlie Kiefer, Forrester student Peter Senge, and researcher-artist Robert Fritz design the "Leadership and Mastery" seminar, which becomes the focal point of their new consulting firm, Innovation Associates.

1984 to 1985: Pierre Wack, scenario planner at Royal Dutch/Shell, spends a sabbatical at Harvard Business School and writes two articles about scenario planning as a learning activity.

1982: Senge, Arie de Geus, Hanover Insurance CEO Bill O'Brien, Analog Devices CEO Ray Stata, and other executive leaders form a learning-organization study group, which meets regularly at MIT.

1987: Peter Schwartz, Stewart Brand, Napier Collyns, Jay Ogilvy, and Lawrence Wilkinson form the Global Business Network, with a charter to foster organizational learning through scenario planning.

1989: Oxford University management scholar Bill Isaacs, an associate of quantum physicist David Bohm, introduces Senge to the concept of dialogue as a process for building team capability.

1989: "The Age of Unreason," by Charles Handy, is published.

1989: The Center for Organizational Learning is formed at MIT, with Senge as director and with Ed Schein, Chris Argyris, Arie de Geus, Ray Stata, and Bill O'Brien as key advisers. The staff of the "learning center," as it's called, includes Bill Isaacs, Daniel Kim (whose research involves linking the learning organization work to the quality movement), and research director George Roth.

1990: "The Fifth Discipline" is published. The book draws on many influences: system dynamics, "personal mastery" (based on Fritz's work and the concept of creative tension), mental models (based on Wack's and Argyris's work), shared vision (based on work done at Innovation Associates), and team learning (based on David Bohm's concepts).

1990: Daniel Kim founds the "Systems Thinker," a newsletter devoted to "fifth discipline" issues. The following year, the newsletter's parent organization, Pegasus Communications, launches an annual conference series called Systems Thinking in Action.

1993: Harvard University professor David Garvin publishes an article on organizational learning in the Harvard Business Review, arguing that only learning that can be measured will be useful to managers.

1994: "The Fifth Discipline Fieldbook" is published. Authors of the book, which Senge edited, include Charlotte Roberts, Rick Ross, and Bryan Smith (president of Innovation Associates of Canada), and Art Kleiner (who serves as editorial director). The "Fieldbook" becomes a new management-book genre.

1994: The use of "learning histories" as a method of assessment

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begins at the Center for Organizational Learning.

1994: The first major Organizational Learning Center projects reach completion. Many of them have produced remarkable results. But a few have resulted in disappointing career prospects for some of the line leaders who were involved in them.

1995: Working with Dee Hock, the Organizational Learning Center begins a two-year process of building an ambitious international consortium called the Society for Organizational Learning, with Peter Senge as chairman.

1996: “The Age of Heretics,” by Art Kleiner, and Synchronicity: “The Inner Path of Leadership,” by Joseph Jaworski, are published.

1997: “The Living Company,” by Arie de Geus, is published.

1999: “The Dance of Change” is published.

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