THE SYSTEMS THINKER™

Building Shared Understanding

The Learning Organization: From Vision to Reality

*B*uilding learning organizations requires more than just "re-engineering" our existing structures. It requires a whole new vision of what organizations can become and a new basis of understanding from which to imagine fresh possibilities. Margaret Wheatley and Peter Senge, keynote speakers at the 1993 Systems Thinking in Action Conference, each articulated their vision for this emerging concept of the learning organization. Excerpts of their talks appear on the following pages.

Margaret Wheatley challenges us to look beyond our current understanding of a world based on control and certainty, and see the beauty and potential of a chaotic, yet orderly, universe.

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We are often afraid of the "letting go" that chaos requires, because we believe our world will fall apart without strict controls. And yet the new science of chaos tells us there is an underlying order to the universe that does not require our control, and that chaos can be a gateway to quantum leaps in improvement. —DHK

MARGARET WHEATLEY— NEW SCIENCE AND THE LEARNING ORGANIZATION

For three centuries, we have been planning, predicting and analyzing the world by separating it into parts. We have held on to an intense belief in cause and effect, and we have let numbers rule our lives. Yet at the end of the 20th century, our 17th-century organizations are crumbling.

Today's organizations are strong, complicated structures. We have built them deliberately to resist change, as we fear what might happen if we loosen our grip or let members of our organizations speak truthfully to one another. We are afraid that things will fall apart. Yet throughout the universe, things work well without us. Wherever we look, we see a landscape of movement and complexity, of bearings gained not from organizational charts or job descriptions, but from natural processes of growth and self-renewal.

In our desire to control our organizations, we have detached ourselves from the forces that create order in the universe. All these years, we have confused control with order. What if we stopped looking for control, and began

in earnest the search for the order we see everywhere around us in living, dynamic systems? If we become a community of inquirers seeking to discover the essence of order, we will find that order in the heart of chaos.

Chaos and Order as Partners

Although we have always thought that small influences can be neglected, we are now aware that we live in a universe of exquisite sensitivity. Fortunately this means that it doesn't take a large mass to create change; it involves just the right disturbance in a part of the system that is so well-connected it will create change everywhere.

When systems were looked at from a long period of time in 3-dimensional phase space, the "shape" of chaos, called a *strange attractor*, emerged. There are many different attractors (ways of plotting movement) in science, but these were called *strange* by two scientists who said the name is deeply suggestive of the unusual beauty and mystery of these objects. We now understand from watching these strange attractors develop that they conform internally. We don't know how, but when you observe chaos over time, it conforms to a boundary and has a predictable shape.

This realization has led to a very different definition of chaos: "order without predictability." This paradox of autonomy and control is everywhere in chaos science. Chaos is therefore teaching us that as leaders we can let go of certain things and still create a well-determined, well-ordered organization.

We are also learning that we cannot see the order in chaos without time and distance. To allow natural processes of order to be colleagues in our search for well-working organizations, we need to develop a very different relationship with time.

The Edge of Chaos

A second sensibility of chaos theory is that the pursuit of a stable, balanced life of equilibrium is not possible. Chaos science says you can't get to a truly creative or transformative solution unless you are willing to walk through chaos, sit with your confusion for a while, and feel overwhelmed and uncertain. Unless you tolerate moments of deep, personal confusion, you can't change your mental models. Systems are most capable of responding to change at the edge of chaos; therefore, if we don't become confident that chaos is a useful state to be in *occasionally*, then we are going to get incremental, small solutions and miss the moments of great creativity.

Nobel Prize-winning physicist Ilya Prigogene noticed that living systems will fall apart when faced with radical amounts of change. But after they fall apart, they have the capacity to reconfigure themselves such that they work better within the environment. We may only see the falling apart stage, and get so terrified that we rush in to stop a group or an organization from descending into chaos. But this descent into chaos makes a new level of wisdom available to an organization.

In fact, chaos is a state of pure information—in that state, the system has two choices: it can die or disappear, or it can reorganize itself around the information and become more adaptive to that particular environment. The intriguing thing about self-organization is that many paths of change are possible. The avenue selected depends on the particular structural coupling that occurs with the available information. Self-organization is therefore a process of continuous tinkering—and we don't normally tinker with organizations.

We need to consider how we can partner with chaos—how we can create processes through which people can generate new information and look at existing information and just be overwhelmed and confused by it. To do this we have to learn that we don't always need to feel organized; we just need to understand that we will always be in this dance between disorganization and organization.

Managing Patterns of Chaos

The third sensibility of chaos theory is that complex systems can be understood by identifying some very simple patterns. We don't know how to believe that a deep pattern, when combined with autonomous self-expression and rules of interconnectedness, can give intricate, complex, beautiful, and predictable shape to our organizations. As we learn this, however, it is clearer that as leaders we should be managing patterns, not people.

There is a DuPont facility in Belle, West Virginia that manufactures highly-toxic chemicals. Several years ago, a new plant manager was brought in because the plant had over 80 safety problems in one year. The manager, Dick Knowles, cut the safety or personal injury incidents in half by strong-arming people to comply with EPA regulations and procedures. But he realized he could never get a perfect record with that kind of autocratic management. What he needed to do was implant a desire and an ability to be safe.

So he focused on a *pattern* of safety by building an environment where safety was the ultimate concern. Every Monday morning, the senior group would meet to talk about anything that had gone wrong, even though it could be detrimental if the EPA got hold of some of the information.

At one particular meeting I observed, they talked about personal injuries. The first incident involved a plant worker who hit a deer while driving on a dark road 300 miles from the plant; the second incident concerned a team leader who had been rear-ended in his car about 12 miles from the plant. The group asked themselves what they could learn from these incidents—concluding they should alert people that the deer are coming out because it is winter, and people should therefore be careful on the dark roads and wear their seatbelts.

At the end of this meeting, I went up to Dick and said, "I don't understand why you're talking about these accidents that happen hundreds of miles from the plant." He looked at me like I was from another planet and said, "Meg, if you care about your people's safety, *you care about their safety*."

He is a wonderful teacher. And he is involving his entire workforce in expressing their individual assessments of what the patterns of safety mean. I believe that such pattern consciousness leads us back into the arena of visions, values, and mission statements, but with much greater seriousness and intent. And our work is not just in establishing a core identity for an organization—the work is in creating the processes so the organization can discover its core pattern for itself.

Developing a Capacity for Autonomy in Our Organizations

To develop a strong core identity, we need to develop the capacity in our organizations to constantly self-update, stay connected, be in touch, develop relationships, find necessary information, and know how to interpret that information. Much more of our focus needs to go into how well we work together and how available we are to each other. Such possibilities signal a whole new way of being in organizations.

The biologist Francisco Varela said we need to understand systems as autonomous cognitive systems, and acknowledge that they have the capacity to determine what works best in their environment. They don't need a template, model, or imposed structure. As self-organizing beings, we all have the capacity to figure out what works best for us in a given environment. And we can develop that capacity in our organizations—if we don't, we will be in a lot of trouble. But how do we build this capacity in our organizations? I don't know that answer yet—but I think that is our work for the next 10 years.

One of the terrors of these new lenses of science is that most of what made us "experts" is irrelevant. The process is one of letting go of our cer-

tainties and expertise and becoming willing to stay in a place of *not knowing* for longer than feels comfortable. Together, we are being challenged to open ourselves to a whole new way of looking at the universe and our organizations.

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The changes required by the new science are deep; the challenges are significant. A clear articulation of a new vision of the organization marks the beginning of the journey. Making that vision a reality also requires a core community of people who are committed to helping transform themselves and their organization.

Peter Senge suggests that the concept of community may replace organizations as the focal point of our work. Building these communities will require investments in organizational infrastructures and in what he calls a deep learning cycle. —DHK

PETER SENGE— BUILDING COMMUNITIES OF COMMITMENT

Something very interesting has been happening at the MIT Organizational Learning Center over the last three to six months. We have started to experience an interesting shift in what I would call the root metaphor of our work. The root metaphor for a long time has been "organization." That seems to be shifting now and becoming "community." It is that shift I would like to ponder together: where it is coming from, why it is occurring, and what are the implications.

I want to start by making a fundamental distinction between "organizational architecture" and the deeper learning cycles that are at work (see "Framework for the Learning Organization"). What we mean by architecture is what you actually try to build. I have suggested three dimensions of this architecture: Guiding Ideas; Theory, Tools, and Methods; and Innovations in Infrastructure.

Guiding Ideas

In a recent paper that Fred Kofman and I wrote called "Communities of Commitment," we tried to articulate what we believe are three guiding ideas that

are relevant for learning organizations: the primacy of the whole, the community nature of the self, and the generative power of language.

The idea of the primacy of the whole challenges our tendency to look at the world as if parts are primary and wholes are secondary. We are always trying to "put the pieces together," but perhaps they are already together. Maybe there is nothing but wholes within wholes, and it is only our common use of language and our patterns of thought that cause us to see things as isolated and separate.

That leads into the second basic notion, the community nature of the self. We tend to think of "self" as something isolated in time and space: here I am, there you are. But in other cultures, a person only exists in relationship. It is a different way of looking at the world— one that is more consistent with the primacy of the whole.

The generative power of language means that, when all is said and done, "there ain't nothing out there except what we say is out there." The basic notion is that we are continually constructing our reality, and there is enormous power in that if we start to recognize it.

Theory, Tools, and Methods

Some examples of tools for building learning organizations are dialogue, systems archetypes, and causal loop diagrams. The theoretical understanding behind these tools is crucial for extending learning beyond a particular situation or setting. Numerous times a group of people has actually achieved a breakthrough and produced results that are qualitatively ahead of what anyone has done before, but the learning doesn't spread. Why? I think it is because we have very little idea what it means to build good theory. Deming has a saying: "No theory, no learning."

A simple illustration of theory building is the product development work at Ford, where they have created causal loop diagrams to better understand the dynamics of resource allocation. Their work is producing superior results, but more importantly, they are building theory.

Innovations in Infrastructure

What are some innovations in infrastructure that are important to our work? One innovation is "learning forums." In late June I attended AT&T's Chairman's Forum, in which the top

Framework for the Learning Organization
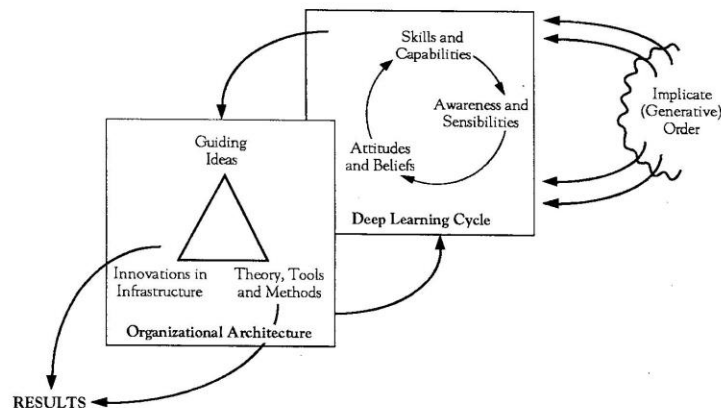
The irony of designing a learning organization is that the organizational architecture—the "hard," quantitative aspects—is in reality the most ephemeral aspect. The deep learning cycle—the development of new skills and capabilities, new awarenesses and sensibilities, and a shift in attitudes and beliefs—constitutes the essence of the learning organization.

150 managers worldwide come together once a year for a day and a half just to talk. The conversation was quite remarkable—I sensed a candor and openness in that conversation that I don't think I have ever noticed in that kind of group. I asked AT&T's chairman Bob Allen why he started these forums, and he said, "We have a lot of infrastructure in our organization for decision making; we have very little infrastructure for learning."

Much of our research at MIT is focused on another innovation in infrastructure called "learning labs," which are practice fields for decision making. Nobody wants to make a mistake that might cost the company jobs or money, and yet all learning is about making mistakes. So somehow we have to create domains, integrated into our work environment, that are literally about making mistakes. That is exactly what a practice field is.

In many ways, dialogue is an attempt to integrate a particular type of practice field into a real work setting. The purpose is to start to think together about complex issues. Not to resolve or make a decision, but literally to improve the quality of our collective thinking, which will then directly inform and improve the quality of decisions.

Putting it Together

The significance of the "Framework for the Learning Organization" is that there is a meaningful distinction between the architecture and the deep learning cycle. All of the stuff in the triangle—Guiding Ideas; Theory, Tools, and Methods; and Innovations in Infrastructure—are the "hard," quantitative stuff. But there is an irony to it—everything in that triangle could be changed tomorrow if a new CEO came into the company. What is most "hard" turns out to be most ephemeral, most fleeting.

The essence of the learning organization is what is on the right hand side of the diagram—the deep learning cycle. The development of new skills and capabilities, the development of new awarenesses and sensibilities, and a shift in attitudes and beliefs are the soft stuff, the stuff that lasts.

Recently I was reading David Bohm's book *Wholeness and the Implicate Order*, and I came across a remarkable statement about the evolution of the concept of "measurement." In the West, our prevailing notion of reality is "what is most real is most tangible." Bohm points out that the word "measure" and the word "maya" in Sanskrit trace their roots to the same word, which means "illusion." "This startling divergence over some 3,000 years reflects a profound divergence in Western and Eastern notions of reality. In the prevailing philosophy of the Orient, the immeasurable is regarded as the primary reality."

The idea in "Framework for the Learning Organization" is that there is a progression from the most subtle, what Bohm would call the most "implicate," to the most explicate or manifest. It is not to say that results are not important, but the deep learning cycle and the architecture lie on a sort of continuum from the most subtle to the most manifest.

Community

Juanita Brown, an organizational change expert, said, "The fundamental glue of an organization is economic transaction. The glue that holds together a community is the opportunity to make a contribution." That is a different root metaphor.

Let me give you an example of that shift, using the idea of shared vision. I don't think organizations have shared visions. What is an organization that it can have a vision? It is the *people* in that organization that carry the vision. What really happens when a group of people in an organizational setting build a shared vision? The vision transcends the organizational boundaries, especially when we start to think of building community rather than improving organizations.

Not all visions are created equal. Some have more power than others. This is part of what David Bohm calls the "implicate order"—something wanting to happen. There is a continual unfolding of the universe, and it is our human capacity to participate in the unfolding. So why are we all doing this? I think it is because we sense it is part of

the unfolding. It is what needs to happen next.

I remember a beautiful articulation of this idea by Martin Buber, a Hebrew existentialist philosopher: "The only thing that can become fate for a man is belief in fate...It does not keep him in leading strings, it awaits him. He must go to it, yet he does not know where it is to be found. But he knows that he must go out with his whole being. The matter will not turn out according to his decision, but what is to come will only come on what he decides and what he is able to will...Then he intervenes no more. But at the same time he does not merely let things happen. He listens to what is emerging from himself to the course of being in the world. Not in order to be supported by it, but to bring it to reality as it desires." ◗

Margaret Wheatley, author of Leadership and the New Science, *president and co-founder of The Berkana Institute, a non-profit foundation that supports the discovery of new organizational forms. She is also a principal of Kellner-Rogers and Wheatley, Inc.*

Peter Senge, author of The Fifth Discipline: The Art and Practice of the Learning Organization, *is the director of the MIT Organizational Learning Center.*