We live in an era of massive institutional failure,” says Dee Hock, founder and CEO emeritus of Visa International. We need only look around us to see evidence to support Dee’s statement. Corporations, for example, are spending millions of dollars to teach high-school graduates in their workforces to read, write, and perform basic arithmetic. Our healthcare system is in a state of acute crisis. The U.S. spends more on healthcare than any other industrialized country, and yet the health of our citizens is the worst among those same nations. Our educational system is increasingly coming under fire for not preparing our children adequately to meet the demands of the future. Our universities are losing credibility. Our religious institutions are struggling to maintain relevance in people’s lives. Our government is increasingly dysfunctional, caught in a vicious cycle of growing special interest groups, distrust, and corruption. The corporation may be the healthiest institution in the U.S. today, which isn’t saying much.

One of the reasons for this widespread institutional failure is that the knowledge-creating system, the method by which human beings collectively learn and by which society’s institutions improve and revitalize themselves, is deeply fragmented. This fragmentation has developed so gradually that few of us have noticed it; we take the disconnections between the branches of knowledge and between knowledge and practice as a given.

A Knowledge-Creating System

Before we can address the issue of fragmentation, we need to establish what has been fragmented. In other words, what do we mean by a knowledge-creating system, and what does it mean to say it is fragmented?

We believe that human communities have always attempted to organize themselves to maximize the production, transmittal, and application of knowledge. In these activities, different individuals fulfill different roles, with varying degrees of success. For example, in indigenous cultures, elders articulate timeless principles grounded in their experience to guide their tribes’ future actions. “Doers,” whether warriors, growers, hunters, or nannies, try to learn how to do things better than before and continually improve their craft. And coaches and teachers help people develop their capacities to both perform their roles and grow as human beings. These three activities—which we can term theory-building, practice, and capacity-building—are intertwined and woven into the fabric of the community in a seamless process that restores and advances the knowledge of the tribe. One could argue that this interdependent knowledge-creating system is the only way that human beings collectively learn, generate new knowledge, and change their world.

We can view this system for producing knowledge as a cycle. People apply available knowledge to accommodate the needs of the present, feed this knowledge to the future, and use the future to validate the knowledge in the present. This cycle can be seen as a tree with three branches: Theory, Methods and Tools, and Practical Knowledge.
process called photosynthesis. The roots found, amazing transformational because it functions through a pro-
wholeness is a system. Seeds for more trees. The tree as a
fruit must be used to provide the
fruit from the tree, eventually there
fruit. But, if you harvest and eat
acknowledgement seems designed to produce the
knowledge. In a way, the whole sys-
results. The fruit is that practical
into new capabilities and practical
branches are the methods and tools,
determines the health of the tree. The
of the root system to a large extent
determines the health of the tree. The
branches are the methods and tools, which enable translation of theories into new capabilities and practical
fruit. In our society,
•Research represents any disci-
plined approach to discovery and understanding with a commitment to
research—whether performed by aca-
demics or thoughtful managers or
consultants reflecting on their experi-
ences—continually generates new
theories about how our world works.
•Practice is anything that a group
of people does to produce a result. It’s
the application of energy, tools, and
effort to achieve something practical.
An example is a product development
team that wants to build a better
product more quickly at a lower cost.
By directly applying the available the-
ory, tools, and methods in our work, we
generate practical knowledge.
•Capacity-building links research and practice. It is equally committed
to discovery and understanding and to
practical know-how and results. Every
learning community includes coaches,
mentors, and teachers—people who
help others build skills and capabilities
through developing new methods and
tools that help make theories practical.
“The Stocks and Flows of
Knowledge-Creation” shows how the
various elements are linked together
in a knowledge-creating system.

Institutionalized
Fragmentation
If knowledge is best created by this
type of integrated system, how did
our current systems and institutions
become so fragmented? To answer
that question, we need to look at
how research, practice, and capacity-
building are institutionalized in our
culture (see “The Fragmentation of
Institutions”).

For example, what institution do
we most associate with research?
Universities. What does the world of
practice encompass? Corporations,
schools, hospitals, and nonprofits. And
what institution do we most associate
with capacity-building—people help-
ing people in the practical world?
Consulting, or the HR function
within an organization. Each of these
institutions has made that particular
activity its defining core. And, because
research, practice, and capacity-build-
ing each operate within the walls of
separate institutions, it is easy for the
people within these institutions to feel
cut off from each other, leading to
suspicion, stereotyping, and an “us”
versus “them” mindset.
This isolation leads to severe communication breakdown. For example, many people have argued that the academic community has evolved into a private club. Nobody understands what’s going on but the club members. They talk in ways that only members can understand. And the members only let in others like themselves.

Consulting institutions have also undermined the knowledge-creating process, by making knowledge proprietary, and by not sharing what they’ve learned. Many senior consultants have an incredible amount of knowledge about organizational change, yet they have almost no incentive to share it, except at market prices.

Finally, corporations have contributed to the fragmentation by their bottom-line orientation, which places the greatest value on those things that produce immediate, practical results. They have little patience for investing in research that may have payoffs over the long term or where payoffs cannot be specifically quantified.

**Technical Rationality: One Root of Fragmentation**

How did we reach this state of fragmentation? Over hundreds of years, we have developed a notion that knowledge is the province of the expert, the researcher, the academic. Often, the very term *science* is used to connote this kind of knowledge, as if the words that come out of the mouths of scientists are somehow inherently more truthful than everyone else’s words.

Donald Schön has called this concept of knowledge “technical rationality.” First you develop the theory, then you apply it. Or, first the experts come in and figure out what’s wrong, and then you use their advice to fix the problem. Of course, although the advice may be brilliant, sometimes we just can’t figure out how to implement it.

But maybe the problem isn’t in the advice. Maybe it’s in the basic assumption that this method is how learning or knowledge-creation actually works. Maybe the problem is really in this very way of thinking: that first you must get “the answer,” then you must apply it.

The implicit notion of technical rationality often leads to conflict between executives and the front-line people in organizations. Executives often operate by the notion of technical rationality: In Western culture, being a boss means having all the answers. However, front-line people know much more than they can ever say about their jobs and about the organization. They actually have the capability to do something, not just talk about something. Technical rationality is great if all you ever have to do is talk.

**Organizing for Learning**

If we let go of this notion of technical rationality, we can then start asking more valuable questions, such as:

- How does real learning occur?
- How do new capabilities develop?
- How do learning communities that interconnect theory and practice, concept and capability come into being?
- How do they sustain themselves and grow?
- What forces can destroy them, undermine them, or cause them to wither?

Clearly, we need a theory, method, and set of tools for organizing the learning efforts of groups of people.

Real learning is often far more complex—and more interesting—than the theory of technical rationality suggests. We often develop significant new capabilities with only an incomplete idea of *how we do what we do*. As in skiing or learning to ride a bicycle, we “do it” before we really understand the actual concept. Similarly, practical know-how often precedes new principles and general methods in organizational learning. Yet, this pattern of learning can also be problematic.

For example, teams within a large institution can produce significant innovations, but this new knowledge often fails to spread. Modest improvements may spread quickly, but real breakthroughs are difficult to diffuse. Brilliant innovations won’t spread if there is no way for them to spread; in other words, if there is no way for an organization to extract the general lessons from such innovations and develop new methods and tools for sharing those lessons. The problem is that wide diffusion of learning requires the same commitment to research and capacity-building as it does to practical results. Yet few businesses foster such commitment. Put differently, organizational learning requires a *community* that enhances research, capacity-building, and practice (see “Society for Organizational Learning” on p. 4).

**Learning Communities**

We believe that the absence of effective learning communities limits our capabilities.
ability to learn from each other, from what goes on within the organization, and from our most clearly demonstrated breakthroughs. Imagine a learning community as a group of people that bridges the worlds of research, practice, and capacity-building to produce the kind of knowledge that has the power to transform the way we operate, not merely make incremental improvements. If we are interested in innovation and in the vitality of large institutions, then we are interested in creating learning communities that integrate knowledge instead of fragment it.

In a learning community, people view each of the three functions—research, capacity-building, practice—as vital to the whole (see “A Learning Community”). Practice is crucial because it produces tangible results that show that the community has learned something. Capacity-building is important because it makes improvement possible. Research is also key because it provides a way to share learning with people in other parts of the organization and with future generations within the organization. In a learning community, people assume responsibility for the knowledge-creating process.

**Learning Communities in Action**

To commit to this knowledge-creating process, we must first understand what a learning community looks like in action in our organizations. Imagine a typical change initiative in an organization; for example, a product development team trying a new approach to the way they handle engineering changes. Traditionally, such a team would be primarily interested in improving the results on their own projects. Team members probably wouldn’t pay as much attention to deepening their understanding of why a new approach works better, or to creating new methods and tools for others to use. Nor would they necessarily attempt to share their learnings as widely as possible—they might well see disseminating the information as someone else’s responsibility.

In a learning community, however, from the outset, the team conceives of the initiative as a way to maximize learning for itself as well as for other teams in the organization. Those involved in the research process are integral members of the team, not outsiders who poke at the system from a disconnected and fragmented perspective. The knowledge-creating process functions in real time within the organization, in a seamless cycle of practice, research, and capacity-building.

Imagine if this were the way in which we approached learning and change in all of our major institutions. What impact might this approach have on the health of any of our institutions, and on society as a whole? Given the problems we face within our organizations and within the larger culture, do we have any choice but to seek new ways to work together to face the challenges of the future? We believe the time has come.
for us to begin the journey back from fragmentation to wholeness and integration. The time has come for true learning communities to emerge.

Peter M. Senge, best-selling author of *The Fifth Discipline: The Art and Practice of the Learning Organization*, is an international leader in the area of creating learning organizations. He is a senior lecturer in the Organizational Learning and Change Group at MIT. Peter has lectured throughout the world and written extensively on systems thinking, institutional learning, and leadership.

Daniel H. Kim is a co-founder of Pegasus Communications, Inc., and publisher of *The Systems Thinker*. He is a prolific author as well as an international public speaker, facilitator, and teacher of systems thinking and organizational learning.

Editorial support for this article was provided by Janice Molloy and Lauren Johnson.

---

**NEXT STEPS**

- With a group of colleagues, identify the “experts” in your organization. How do they gain their knowledge, and how do they share it with others?
- Following the guidelines outlined in the article, analyze which of the following capabilities is most strongly associated with your organization: research, practice, or capacity-building. Which capability does your organization most need to develop and what steps might you take to start that process?
- Discuss where in your organization learning feels fragmented, that is, where “lessons learned” are not being applied effectively. How might you better integrate knowledge into work processes so that you or your team can apply what you’ve learned to achieve continuous improvement?