CHAPTER 1

A New Vessel for Leadership:
New Rules for a New Age

The hardest thing is not to get people to accept new ideas; it is to get them to forget old ones.
—John Maynard Keynes

Chapter Objectives
At the completion of this chapter, the reader will be able to

- Compare the characteristics of the Industrial Age with those of the 21st century.
- Enumerate the elements of quantum thinking and explain how it has influenced the journey into the Age of Technology.
- Assess the impact of quantum science and recent advances in technology on health care and clinical practice.
- Describe the implications of Age of Technology thinking on the exercise of leadership.
- Identify the different skill sets for leaders in the 21st century.

Nothing is the same—nor will it ever be again. Ours is a new age, filled with a host of inspiring and challenging opportunities that, just a decade ago, were the stuff of science fiction. Who would have thought that this generation would see the advent of fiber optics, satellite-based universities, genomics, lasers, and a host of technological innovations that boggle the mind and enthrall the imagination?

Along with these many innovations come the challenging adjustments we must make to live in this new world. Instant communication, boundary-less relationships, the globalization of economics and politics, Internet interaction, knowledge that exceeds our capacity to assimilate it—all are having a dramatic impact on every person’s ability to thrive in the 21st century. For most of us, the changes have come so fast that we are unable to fully comprehend how they will affect us and are hard pressed to cope with their implications.
The pace alone—a pace simply unheard of in the last century—is enough to overwhelm even the most energized. As soon as we have the time to consider the particulars of the most recent changes, new changes are upon us and insinuating themselves into our culture. We do not even have the luxury of identifying their advantages and disadvantages and of considering their potential influence on our lives.

Our society, for instance, is just beginning to understand the impact the Internet has had and will have on communication, business, and politics. Further, new elements of the Internet are already emerging to alter our lives and change the questions we are asking about what is passing before our very eyes. Yesterday’s questions will not get answered because tomorrow has become today sooner than we ever could have imagined.

**Leading in a Fluid World**

Leadership cannot be the same. Just as the underpinnings of our society are being radically transformed, so is the leadership necessary to guide people through life. The old models of leadership are no longer adequate to meet the demands of the times. When the world was slower paced and systems theory, complexity theory, and quantum theory were not as well formed or as influential, the nature and role of leadership were different. Even the operational realities of the workplace have changed to the point that work itself requires different skills and a different ethos (Exhibit 1–1).

The stable institutions of the 20th century are quickly unraveling as the framework for the new century gets constructed. Not only are the brick-and-mortar empires of the past breaking up, but work is being moved away from institutions altogether. The infrastructure of society is becoming less institutional and more information based, and the architecture of our places of work, service, and business is changing dramatically. Information structures are primarily relational and function horizontally, whereas most of our business structures have functioned vertically.

**Point to Ponder**

The worker is increasingly in control. The knowledge necessary to get work done is now mostly in the hands of those who do the work. Because the workplace is becoming more dependent on knowledgeable workers, a major shift in power and control has occurred, and the old structures are now in conflict with this new type of worker.
tific management, to the late 1960s, business organizations were structured mechanistically and hierarchically. Even the management theorists of the 1930s, 1940s, and 1950s did not radically alter organizational design. The worker was considered a subset of the work. Most training was gained on the job, and the apprenticeship model used for training was essentially hierarchical as well. The organization owned the work and set the rules. Communication and decision making traveled up and down the corporate ladder: the higher up the ladder, the greater a person’s authority and autonomy. At the bottom were the workers who performed most of the functions—under the control of those who had moved “upward.” Although attention was paid to both the work and the worker, it was barely reflected in the management structure and the application of leadership in organizations.

But this is no longer the case. In the current world of work, it is not the organization, but instead the worker, that is owner of the work. The character of work changed substantially at the end of the 20th century—it became increasingly technical and complex—and now individuals usually need to be trained for jobs before they become eligible for them. Indeed, they are expected to arrive “on the run” and start contributing from the outset. Further, the organization’s increased dependence on the worker has created a new power equation, shifting the locus of control from the organization to the worker.

In the Industrial Age, leadership (Murphy & Riggio 2003) meant being a good manager, guiding one’s subordinates like a good parent, and directing their activities in the interests of the organization. The critical skills were those required for planning, organizing, leading, implementing, controlling, and evaluating (note the acronym constructed from the initials of these six words: POLICE). The ability to function well and undertake well-defined processes was the basis of every role. Good performance and a sense of responsibility were highly valued, strongly encouraged, and heavily rewarded.

So was compliance with the expectations of the workplace. Organizational leaders used vertical communication and command strategies exclusively to ensure that the workplace stayed focused and orderly and that the work was performed efficiently. They also refined hierarchical mechanisms and fostered congruence of workplace behavior in whatever way they could.

It was in this context that the first contemporary notions of leadership developed. A whole host of approaches to understanding leadership and acting as a leader emerged

<table>
<thead>
<tr>
<th>Knowledge Worker</th>
<th>Employee (Former Type)</th>
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<tbody>
<tr>
<td>• Conceptual synthesis</td>
<td>• Functional analysis</td>
</tr>
<tr>
<td>• Competence care</td>
<td>• Manual dexterity</td>
</tr>
<tr>
<td>• Multiple “intelligences”</td>
<td>• Fixed skill set</td>
</tr>
<tr>
<td>• Mobile skill set</td>
<td>• Process value</td>
</tr>
<tr>
<td>• Outcome practice</td>
<td>• Process practice</td>
</tr>
<tr>
<td>• Team performance</td>
<td>• Unilateral performance</td>
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during the century, and each one reflected prevailing notions of work and workplace organization (Exhibit 1–2). These various approaches helped to create the current framework for leadership, both in the realms of action and of decision making.

Exhibit 1–2  Work Life Reality Shift

<table>
<thead>
<tr>
<th>Old Reality</th>
<th>New Reality</th>
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<tbody>
<tr>
<td>• Scripted lives</td>
<td>• Own your script</td>
</tr>
<tr>
<td>• Unlimited resources</td>
<td>• Finite resources</td>
</tr>
<tr>
<td>• Fixed functions</td>
<td>• Tightness of fit</td>
</tr>
<tr>
<td>• Employee</td>
<td>• Stakeholder/member</td>
</tr>
<tr>
<td>• Fixed jobs</td>
<td>• Fluid roles</td>
</tr>
<tr>
<td>• Promotion</td>
<td>• Mobility</td>
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Newton and Organizational Design

Newtonian mechanics had a tremendous influence on 20th-century science and business. In particular, Newton’s model of the physical universe influenced social theorists to view social relationships, roles, and work as highly mechanistic. In addition, entrepreneurs and organizational gurus constructed models of work in which work activities were highly compartmentalized, and they succeeded in spreading the use of these models throughout the world. As a result, work was generally designed with efficiency and effectiveness in mind, and special attention was paid to individual performance as a means of ensuring that the work was done as planned.

Also, 20th-century organizations focused on the assumption that by constructing work processes properly, they would produce products and services of consistently good quality. Here again, the organizational literature reflected a reductionist model. The organizational gurus viewed organizations as being

Key Point

In the 20th century the focus of work was on performing the right processes. In the 21st century the focus is on obtaining the right outcomes.

Group Discussion

We are living on the cusp of the transition between two ages, and life in the 21st century will differ substantially from life in the 20th century. The changes that will occur include changes in work and leadership. The group should brainstorm at least 10 changes that will occur in the new century and discuss their implications for leaders.
essentially the same as always, although differing in structure in minor ways and characterized by an increased degree of control over employees. As Peter Drucker pointed out, the cornerstone of most 20th-century organizations was control, as indicated by the “line and box” approach to configuring the workplace (Drucker 1998) (Figure 1–1).

Leaving the Industrial Age

For the past 30 years or so, the standard models of work and the underpinnings of society have been undergoing a radical shift. The impact of our burgeoning technology has brought about a new construct for social structures and relationships across the whole human landscape. Quantum theory, developed and applied during the middle of the century, has helped to create newer technologies that affect life from the molecular to the global levels.

As an example, consider the computer chip, which has single-handedly altered human experience forever. Among other things, it brought about a whole new understanding of quantum principles and changed the very foundations of social life by connecting people in a new way. Further, we now live with the knowledge that everything is linked and that events in one part of the universe have some kind of impact on what happens in other parts. Our understanding of the linkage between events is the basis for complexity science and has led to changes in the conceptual foundations of the sciences and their social application (Exhibit 1–3).

In turn, these changes have raised the level of conflict surrounding basic issues, ranging from the existence and nature of God to ethical and social norms. Claims that once seemed beyond question are now open to investigation and continuous challenge. New scientific
discoveries have had substantial religious, philosophical, and ethical implications and have caused social discomfort among those holding traditional beliefs.

It is into this equation that organizational leaders are now thrust. The problem is that they too are experiencing the conflict endemic to the times. Most of them have spent the majority of their lives in the Industrial Age, just as everyone else has. They too are confronting newer realities with beliefs and practices acquired in the past. They too are struggling to make sense of the changes occurring worldwide. As an additional challenge to adapting to these changes, they must also lead others to successfully adapt to them. Furthermore, the discoveries and innovations are occurring faster than the rate of adaptation. As soon as one change is accommodated, another occurs, requiring a different response.

Change Is

Quantum theory has taught us that change is not a thing or an event but rather a dynamic that is constitutive of the universe. People cannot avoid change because it is everywhere, but they can influence its circumstances and consequences. In short, they can give it direction.

Schrödinger, a mid–20th-century physicist, used his famous “Schrödinger’s Box” thought experiment to show two prevailing realities operating at any given time, actual reality and potential reality. Actual reality is that which currently occupies our immediate attention. Potential reality, on the other hand, although current and present, is not yet experienced. Being still potential, it is waiting for the right moment to become expressed and thus actual. Potential reality is the realm in which leadership takes form. The leader’s role is to engage with the unfolding reality, perceive it, note its demands and implications, translate...
it for others, and then guide others into actions to meet the demands of a reality not quite present. This leader must be comfortable with the ambiguity of the “in between,” that is, living in two realities, that which is ending and that which is emerging. Demonstrating this comfort with the journey provides a frame for leading others through the chaos and uncertainty of change.

In this transformational time between two ages, the leader’s primary role is to live fully in the realm of potential reality. The leader is not so much an operational expert and problem solver as a good “signpost reader.” To be effective, the leader must anticipate the path of change and then spell it out for those who are moving their own activities, knowingly or unknowingly, in the same direction as the change is taking.

The Transition Between Ages

Living at a time when the forces of change are converging, as always happens in the transition between ages, is especially difficult. The dynamics of a substantive change are moving in concert to create the underpinnings for a comprehensive transition (Bridges 2002) from one way of living to another. This has occurred several times in human history. From the Middle Ages through the Age of the Enlightenment and the Industrial Age and up to the current era, which we might dub the Age of Technology (or the Information Age), historic indicators have presaged major shifts in human experience (Figure 1–2).

There is an important difference, though, between previous shifts and the one that is now occurring. When the previous shifts were viewed after the fact, their significance soon became clear, even if it was rarely apparent during the critical transition points. Today, on the other hand, the period between predicting future changes and confronting their unfolding is too brief to allow plans to be made to accommodate them. Indeed, today’s leaders act as agents of change, but, like everyone else, they must also undergo the changes themselves virtually at the same time as they perceive them. Wholly new leadership skills are required to manage in this kind of a world.

Think for a moment about some of the ways in which the script of life is being rewritten for all of us:

- The Internet is currently the fastest growing primary business tool, and it is fundamentally altering how business gets done.
- Fiber optics, in conjunction with satellite technology, have connected the world into a seamless communication network in which information can be transmitted instantly from any place on the globe to any other place.
Information has thus become highly portable, and, given the developments in shipping, everyone has access to almost anything wanted or needed anywhere in the world.

Each person has control over any relationship, personal or business, and can personalize any interaction within any context at any time and in any way he or she desires.

Miniaturization has made it possible for people to be mobile and still remain connected to everything and everyone. Furthermore, it has made innovations in service, communication, information, and health care faster, easier, and less expensive to implement than ever before.

Globalization has created a world community and removed boundaries between people, be they political, social, or physical. The recognition of the mobility of human experience and of work has created a new virtual and global landscape for human action.

These are just a very small sample of the transformations that are occurring. And these transformations are only the beginning. Even so, they are having a major impact on our understanding, on the way we live and relate, and, of course, on the way we work.

Imagine the lives of our great-grandparents or even our grandparents and how different our lives are from theirs as a result of these technologies. Then consider the possibility that the children of current teenagers might never write or read as we have, interact and play as we have, relate to each other or travel as we have. And remember, it is this generation that will, not so long after we have retired, usher in the next stage of work.
In short, our generation is a transitional generation—the last generation of the Industrial Age and on the cusp of the Age of Technology. We are in essence the bridge between two ways of experiencing the world. What we do will lay the groundwork for a future that will look nothing like the world most of us know.

Leading Change

It is hard to believe that anyone today could be unaware that we are in the midst of a major social transformation—a transition to a new way of living and acting (Figure 1–3).

The role of today’s leaders is to encourage this transformation. Indeed, they must make a commitment to the journey and work hard to incorporate the changes in their lives in a very personal way. In other words, rather than simply suggesting that everyone and everything must change, they must lead by example. They must serve as witnesses to the

Group Discussion

List dramatic discoveries and inventions that occurred during the past century and compare the way life changed as a consequence with the way life changed during the preceding millennium. Then discuss the changes likely to occur in the first decades of the 21st century, especially in health care.

Figure 1–3  Universal Dynamics of Transformation
changes and show others how to adapt to the changes in their own lives.

In the initial stage of this transformation, leaders must be able to show that the coming changes are critical and must, through their passion for movement, inspire responses from others. This is not the time for complacency but for truth telling and confrontation. In short, it is a time to persuade people that the changes could make a substantial difference in their lives and in their work. Convincing people of this requires a level of honesty and directness once thought to be confrontational.

In the case of health care, the major transformation underway will lead to the end of the hospital-based sickness-oriented model of service delivery. Our technologies will allow us to treat illnesses at an earlier stage and reduce the need for costly surgical interventions. As a consequence, not only physicians, but also nurses and other health professionals, will need to make substantial changes in the way they practice medicine and provide services.

Leaders in health care must help people end their attachment to the kind of health care system with which they have become comfortable. So many health professionals are mourning the loss of what is passing away or has passed away. In some cases their sense of loss is understandable, but most of what is being mourned should not be retained or brought back. That was then; this is now. Some of the things that attracted many of us to health care have vanished for good. The question is not whether they will return but how to adapt to the new circumstances.

Health care leaders must try to engage others in the process of making their own changes. They must take whatever action is necessary to impress upon health professionals that this is a time of great mobility and of shifting foundations. In particular, they must call all stakeholders to the table to work out what must be altered and what must be introduced to fashion a new health care delivery system. A great tragedy will occur if health care leaders are unsuccessful in this task and allow stakeholders simply to react to changes long since past. Complacency will guarantee failure.

Leaders may be victims of their own insights and past successes, which can cause them to use an outdated recipe for success as well as misleading measures of success. They must see the approaching challenges within the context of their becoming, not through the eyes of past triumphs.

Not only must leaders close the door on the passing age, but they must turn around and view the entire landscape to develop a workable vision of the future. Health care leaders often are too shortsighted, and their vision too tenuous. The conditions that will determine the future of health care are vastly different from anything that has been experienced to date, and thus leaders need to con-
struct a radical vision of how services will be provided in the new health care landscape. The impact of micronization, genomics, biotherapeutics, and chemotherapeutics is forever altering Western medicine (Exhibit 1–4), and the structures that support the provision of Western medicine will also need to change. The brick-and-mortar infrastructure and the current administrative and operational framework are no longer entirely relevant, and they will need to be adjusted in response to financial, political, and technological pressures. Imagine how painful that message is for the serious and talented men and women who have devoted their lives to building the current health care system. The requirement to tear it apart and begin anew is overwhelming to them, but they are called to this task by the changes that have occurred already and that suggest the direction in which health care is moving.

Health care leaders must be able to communicate to others their vision of the future and bring as much energy and commitment to the reformation of the health care system as possible. They need to capture the hearts and minds of all health professionals and other stakeholders in the health care system by being relentless communicators and forever challenging current ways of thinking and doing. They must push the walls of thought and work to ensure that the stakeholders are fully engaged in critiquing what they do, assessing the product of their work, and questioning whether what they are doing is congruent with the changing demands placed on them. Every stakeholder must continually examine the appropriateness of current work rituals and routines and determine what should be retained and what should be left behind as no longer relevant. The job of the leaders is to raise questions about the efficacy and effectiveness of current work routines and whether they are meeting new and emerging expectations.

The most important task of health care leaders is to communicate their vision, not so much by their words but by their behavior. If the leaders cannot respond appropriately to the demand for change, others will not be able to either.

Exhibit 1–4  Changing Medical Therapies

<table>
<thead>
<tr>
<th>Old Therapies</th>
<th>New Therapies</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Surgery</td>
<td>• Lasers</td>
</tr>
<tr>
<td>• Salves and creams, drugs</td>
<td>• Microsurgery</td>
</tr>
<tr>
<td>• Accommodation</td>
<td>• Genomics</td>
</tr>
<tr>
<td>• Nothing can be done</td>
<td>• Pharmaceuticals</td>
</tr>
<tr>
<td>• Treatments</td>
<td>• Chemotherapy</td>
</tr>
<tr>
<td>• Enemas</td>
<td>• Radiotherapy</td>
</tr>
<tr>
<td>• Blood letting</td>
<td>• Synthetic products</td>
</tr>
<tr>
<td>• General supplements</td>
<td>• Specified supplements</td>
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Their next most important task is to anticipate the blocks in the way of substantive change. Implementing any planned modification requires the integration of numerous activities and people, and thus faces many embedded obstacles. The most notable are elements of the organizational structure, which itself acts as insulation from the demand for change. One of the first jobs of a leader acting as a change agent is to diffuse the power of these elements and thus remove a large barrier to concerted and dramatic action on the part of the stakeholders.

Leaders must be aware that there are people who have devoted their lives to avoiding the prospect of change and that one person dedicated to blocking change can bring the entire change process to a grinding halt. Change avoiders or resisters must be identified, challenged, worked with, empowered, and placed in the midst of the change process so they do not impede the ability of the organization to thrive. The entrenchment of behavior and of structures that reward these behaviors now provides the single greatest barrier to meaningful change in health care and contributes to the decline in the system. There is nothing more tragic for society than the desperate stranglehold on a system in need of great change by leaders who benefit by delaying or avoiding the necessary shifts. These leaders cease to be relevant or viable and actively contribute to the overwhelming onset of great decline and ultimate failure.

Because the transition from one age to another is a long-term process, leaders must continually set short-term goals to give stakeholders a sense of movement and accomplishment. The attainment of these goals allows the stakeholders to mark their journey forward and visualize and celebrate the process of change. It also gives them a moment of respite and reflection and helps them gather the energy necessary for the next stage.

Leaders must look at change not as an event but as a journey—a never-ending journey. Every point of arrival, in other words, is also a point of departure. Therefore leaders must carefully balance periods of effort and action with periods of rest and celebration so that the stakeholders will be regularly refreshed and reenergized to meet future challenges.

Finally, change is experienced on a personal level and on a cultural level. And culture always rules. This truism must be solidly rooted in the mind of every leader engaged in transforming an organization. The task is to prove to the workers that the modifications will improve their work or the workplace. Today’s workers are faithful, not to the workplace but to their work. They know they can take their skills elsewhere and be welcomed with open arms. The leaders must thus be aware of the demands regarding work that exist within the prevailing culture. Incorporating symbolic and cultural norms in the language and process of change helps cast it into a form that the workers can understand and value. Every wise leader knows the political realities pertaining to a change process and adapts the process in light of them so that key stakeholders have their needs adequately met and can devote their efforts to implementing and sustaining the process.
Quantum Age Rules

The new age, into which we are quickly moving, is characterized by many new patterns and processes, as described below.

**Linear Thinking Will Be Replaced by Relational and Whole Systems Thinking**

Perhaps the most radical shift to occur will be the move away from mechanistic (Newtonian) and reductionist models of thought and research. In the 20th century, most research was based on vertical (or linear) processes. Quantum science, in contrast, has an affinity for complexity and chaos. The use of complex relational algorithms has lessened the former devotion to vertical processing, and relational and whole systems models now constitute a new foundation for scientific and business research. Because researchers are now capable of rapidly processing and relating complex arrays of data, they can use different processes for making decisions and creating new products and technologies, such as computer chips and pharmaceuticals.

**Structure Is About Wholes, Not Parts**

Our newly acquired capacity for discovering and understanding linkages and intersections has made it clear to us that at some level everything is interdependent. Further, our knowledge of the interconnectedness of everything has caused us to look differently not just at the physical components of the universe, but also at organizations and human interactions (Exhibit 1–5). This is not to say, of course, that we always fully comprehend the nature of the interdependence between any particular elements.

The notion of fractals is critical for understanding the order that exists in chaos and for appreciating the impact of complexity on organizations and human behavior. The smallest level of a single organization and the most complex array of a large aggregated system containing the organization are connected inexorably through the power of fractals.

If you have ever looked at a hologram, which is a three-dimensional photograph of an image, you may have noticed that no matter what size section you focus on, the entire image is still present in the smaller piece. Holography thus can be used to explain the nature of fractals, for in a fractal the complete pattern is present in any component regardless of the level of detail or complexity. A tree is a good example from the so-called natural world, for its overall structure, including the trunk and branches, is similar to the branching pattern of each leaf.

**Group Discussion**

Along with the nature of work, the characteristics of workers are changing. Discuss how the times have an impact on the culture of the workplace and the characteristics of workers, compare the characteristics of new and old workers, and explore the issues that arise when both types of workers must perform together.
Fractals have tremendous implications for organizations. From the smallest structural elements to the very complex patterns of behavior existing throughout an organization, the same patterns appear and are played out in precise detail. This fact implies that at every level of the organization there exists a self-organizing capacity and that this capacity maintains a balance and harmony even in the midst of the most chaotic processes. To the extent that the balance and harmony are sustained, the organization’s life is advanced. To the extent that they are upset or cannot be articulated, visualized, and acted on at every level of leadership, the organization’s actions tend to impede its integrity and effectiveness. It is important, therefore, that the leaders of the organization be aware of the continuous and dynamic action of fractals in all organizational behavior and structure so that they can advance the consonance and value of the employees’ activities and enhance the organization’s ability to fulfill its mission.

Perhaps it is even more important for the leaders to recognize that, within the context of the fractals’ dynamic action, their own actions have cascading and rippling implications in every other part of the organization. In fact, they should understand that no decision, action, or undertaking can occur any place in the organization without ultimately having an impact on every other action, decision, and undertaking. In addition, once they are cognizant of the web of interaction and interdependence that exists in the organization, the leaders will approach deliberation and decision making only with extreme care, caution, and thoroughness.

It is pertinent that issues of relationship and interaction and empowerment and ownership have become increasingly implicated in our understanding of work. We now view individuals rather than organizations as owning work processes, and this change in our understanding has altered the relationship between workplace and worker. Further, by focusing on different descriptors in portraying how human dynamic systems work and how processes get sustained, we have created a new framework for considering design and func-
tion within the workplace and within the entire human community—and for considering what is and is not effective in the workplace and in relationships between people, as well as for looking at issues of accountability, productivity, and value.

For example, no longer is it enough for leaders to assess the functional proficiency of individual workers as a way of determining whether a work process is fully effective and sustainable. Instead, they must also examine whether each worker’s competence fits with the competence of the other workers. “Goodness of fit,” not the individual proficiency of any single participant, leads to effectiveness and sustainability.

**THE VALUE OF WORK IS A FUNCTION OF THE OUTCOME, NOT THE PROCESS**

Our understanding of the value of work has undergone a change. In the past the focus was on process, and the existence of a good work process was taken to be a sufficient condition of good service. We now recognize that process is not the only determinant of good service. Indeed, a work process gets its value from the purpose toward which it is directed (the desired outcome), and if the purpose does not inform and discipline the process, then the process can lose its value.

Work is not inherently valuable, despite the Judeo-Christian tradition. Consider how many people who have said that their work provided meaning in their lives found their lives pointless when the function and content of the work shifted. What they forgot is that work is not meaningful in itself but becomes meaningful when it fulfills an important purpose. People sometimes feel “burned out” when the meaning that should drive the work is sought in the work activity itself. When the work changes they cannot cope, because they experience not simply the end of a way of working but also an end of meaning. Their “how” has become their “why.”

Process is not always connected to outcome and hence to value. Nurses and physicians, particularly, have a hard time understanding this. Sometimes their commitment to treating patients is not disciplined by the recognition that the value of any treatment activity lies in the final outcome. Indeed, they often provide health services in cases where there is little evidence that the services dependably result in a good outcome. Medical practice variance accounts for billions of dollars a year in health care expenditures. In the future, the connection between process and product—between particular treatments and their outcomes—must play a more significant role in the management of health care resources and the valuing of health services.
TECHNOLOGY HAS CHANGED WHAT PEOPLE DO, HOW THEY LIVE, AND WHO THEY ARE

When the technological advances of our own time are viewed objectively, it is difficult not to marvel at them. Many inventions that first appeared in science fiction have been realized in the past few decades, and there are obviously many innovations yet to come, including some that will alter the very structure of life. Frightening as it may be, for the first time in human history we can control our own evolution and that of every other species on the earth.

Health care leaders need to realize that technology is transforming the very ground of health care for the first time since the development of germ theory. Genomics and related sciences are shifting the therapeutic framework for health care, probably for the rest of the century. How many of us are able to provide leadership in a postgenomic health care system? How many of us really know what that means?

Certainly, health care will become less dependent on the use of highly mechanical interventions, especially surgical interventions. Given the advances in bio-, chemo-, and pharmacotherapeutics, many conditions that required surgery can be handled more easily and less invasively through modern drugs. Even Alzheimer’s disease will become a treatable illness before the end of the decade. The question is, what will be the implications of the switch to new therapeutic modalities, especially for the treatment of older persons and for the traditional institutional models of treatment (Exhibit 1–6)?

Leaders will have to grapple with these emerging realities and incorporate them into their own lives. Most people are finding it difficult, if not impossible, to see what the new technologies will entail for life in the 21st century, despite wanting to embrace them. They need help in grasping how the technologies will affect them and what adjustments they must now make to thrive in the coming age.

NEW RULES WILL APPLY IN THE NEW AGE

Imagine not just learning to live within the context of a whole new set of rules but leading others to embrace them in their own lives and work. This is the fundamental leadership task—dealing with the same changes as everyone while helping others thrive in a new reality. What makes this even more challenging is that people are always inclined to reject the implications of the changes that are occurring.

Several late–20th-century innovations are still having a powerful impact on people’s lives and on their relationship to health professionals and other service providers. These innovations include the Internet, wireless communication, fiber optics and lasers, and new

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Exhibit 1–6  Seven New Age Imperatives

1. Open access to health information
2. Medicine/nursing based on genomics
3. Mass-customized diagnosis and treatment
4. User-specific insurance programs
5. Integration of allopathic and alternative therapies
6. Payment incentives tied to outcomes (quality)
7. Focused service settings for specific populations
drugs. The Internet, for example, not only has had an impact on global communications but also has altered the way business is conducted. People can now shop without leaving home and even without any human contact whatsoever. They also can access a wide variety of information, including information they once needed to visit a library or a professional expert to get. When people meet with their doctors, they might already have accessed health information from other sources and have questions and concerns they want to discuss. The Internet, in other words, is helping to shift the locus of control from the providers of health services to the users, and it is also affecting the patient–provider relationship in other ways:

• Patients now determine the parameters of the patient–provider relationship, setting the stage for a different kind of interaction than has historically occurred.
• Patients need to develop partnerships with providers to sort through the available choices and pick the best. They need providers to act as educators who are willing to assist them in making health care decisions.
• Patients need help from providers both in verifying the accuracy of the data they have independently garnered from a host of sources and in interpreting the data.
• Patients are interested in options, not an order to undergo a particular treatment. They want to be able to consider a range of options within the context of their own personal values and priorities and choose the one option that best fits these.
• Providers now need to be concerned with what patients know and can do with regard to controlling their own health decisions in a “user-driven” world. More of the responsibility for health care will be placed with patients and their loved ones. Providers must now transfer skills to others and surrender ownership of care to others.

Although the locus of control has shifted to the patients, they are essentially uneducated about health care. Still, ready or not, they now must take command of their own care and acquire whatever skills they need to manage it. The current role of providers is to ensure that patients not only have the proper tools and skills but actually succeed at managing their own care. Consequently, providers need to alter their priorities. Rather than intervening medically and giving care themselves, they now frequently help their patients to make proper health-related decisions and to learn how to perform necessary self-care tasks. To an extent, they are becoming health service agents, assisting their patients in getting whatever equipment or services they and their patients have determined are needed or desirable.

**Health Care Will Be Provided Earlier than in the Past**

Over this next century bio-, chemo-, and pharmacotherapeutics will come to dominate the health services landscape. Because technology will be able to assess a person’s physiology in ever greater detail, diseases will be identified sooner than they are now, and diagnostics will make it possible to predict with high levels of accuracy a person’s degree of risk for particular diseases and conditions, and provide preventive treatment before symptoms manifest.

The question for the health professional is how will the improvement in diagnostics alter the practice of medicine? In the past, medical and nursing interventions generally required the recipients to be hospitalized. The therapies of the future will require much less hospitalization and will hardly impede the patients’ normal routines. The main goals of health
professionals will be to provide the right therapy at the right time and to educate people about their life processes, their health, their choices (including medical and lifestyle choices), and the risks associated with each choice.

The largest two groups of health professionals, nurses and physicians, have much to accomplish in the next two decades if they are to successfully make the transition to the new era. Their clinical roles will change substantially during this period, and getting these groups to converge around a new way of delivering services will be a challenging and tumultuous experience for health care leaders. They will require extreme diligence as well as a skill set that will stretch their resources to the limit. To design the future, they will have to understand the current landscape and how it differs from the familiar territory of past experience.

THE CONTEXT IN WHICH LEADERSHIP IS APPLIED IS UNDERGOING CHANGES

From deconstructing infrastructure to confronting “new age” workers, leaders have a new set of tasks before them—tasks they are not fully prepared to address. For most leaders, their understanding of the nature of leadership was formed in the early and middle 20th century and reflects outmoded models. During the last third of the 20th century, newer models of leadership and its application emerged. These models are based on new ideas about organizational structure and managing people and processes (Exhibit 1–7).

In the past, organizations were built on the Newtonian principles of mechanistic functioning, compartmentalization, and vertical control (Exhibit 1–8). The dominant theme of Newtonian thinking is that the universe is simply one vast machine. In fact, Newton saw the universe as a sort of giant clock that could be explained in mechanistic terms, and he and his followers took the goal of physics to be the discovery of the laws that supposedly govern the parts of the universe (material particles and the bodies of which they are constituents). Almost all scientific progress of the late 19th century and the first half of the 20th century was grounded in Newtonian concepts.

The kind of mechanistic explanation favored by Newtonians has not accounted for
human behavior and other patterns of activity in the universe, however. In the early decades of the 20th century, questions were raised about the adequacy of Newtonian physics to explain the incongruous and “messy” underpinnings of the universe. Biology, perhaps, has offered the best evidence that not everything works mechanistically and that the universe is rife with chaos and incongruities.

Quantum theory and other more recent scientific theories have had a large impact on theories of leadership. Many of the elements of traditional leadership grew out of a Newtonian framework, especially those focusing on hierarchical control. Indeed, organizational leaders during the 20th century tended to rely on vertical hierarchies and compartmentalization of activities to manage people and productivity, and the structures of their organizations reflected this tendency. The rise of quantum theory and the new appreciation of complexity and chaos as the foundational characteristics of the universe have changed our views of science and of life (Exhibit 1–9). Many writers mistakenly believe that all that has occurred has been a shift in focus from physics to biology, but this way of looking at the matter itself reflects a kind of compartmentalism. Rather, what people are

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**Exhibit 1–7** The Major Tasks of the 21st-Century Health Care Leader

- Deconstructing the barriers and structures of the 20th century
- Alerting staff about the implications of changing what they do
- Establishing safety around taking risks and experimenting
- Embracing new technologies as a way of doing work
- Reading the signposts along the road to the future
- Translating the emerging reality into language the staff can use
- Demonstrating personal engagement with the change effort
- Helping others adapt to the demands of a changing health system
- Creating a safe milieu for the struggles and pain of change
- Enumerating small successes as a basis for supporting staff
- Celebrating the journey and all progress made

**Exhibit 1–8** Newtonian Characteristics

- Vertical orientation
- Hierarchical structures
- Focus on control
- Reductionistic scientific processes
- Top-down decision making
- Mechanistic models of design
- Process-driven action
beginning to understand is that all elements of the universe are a part of a broad system of intersections and relationships.

All our current theories of leadership are challenged by the major shifts in scientific thinking noted above. What were once thought to be the foundations of leadership are now being subjected to further exploration and clarification. Hierarchy and order, for instance, are no longer seen as requisites for leadership, and the rules governing relationships and interactions within organizations have been forever altered. Further, it is now recognized by some that the patterns of relationships in an organization are just as important as the relationships themselves or what lies within the related elements. Leaders must understand and apply these newer notions if their organizations are to thrive internally and externally.

**Exhibit 1–9 Quantum Characteristics**

- Multifocal characteristics
- Nonlinear structures
- Focus on relatedness
- Multi-systems scientific processes
- Center-out decision making
- Complexity-based models of design
- Value-driven action

**Leaders Must Replace Traditional Leadership Models with Models that Reflect the New Framework**

The current literature on leadership contains a large array of concepts that suggest a whole new framework for action. Foremost among these is the concept of complexity and the view that everything is related. This view entails that the interactions between the parts of a system are critical to the system’s productivity and ultimately its sustainability (Maser, Beaton, & Smith 1998). The main leadership task, then, is not so much to manage function or work but instead to coordinate the elements (e.g., the workers) and facilitate their relationship at every organizational level.

Leaders must maintain a panoramic view of the world to discern the direction their efforts should take. Their ability to see intersections, relationships, and themes is what ensures that the organization will undertake the activities it needs to thrive.
In the Industrial Age, leaders were concerned most of all with function and operation. The work was compartmentalized, and the focus was on the activities of the individual employee. The employee’s work life was regulated by a set of job obligations, and by meeting these obligations the employee was able to advance upward, receive better pay, or obtain other rewards. A performance evaluation system might be in place to assess the employee’s proficiency, and any rewards given to the employee would be based on the quality of the work, not on whether the work had made a difference to other employees or to the organization as a whole. Work processes have historically been treated as having more value than their outcomes.

In the new age, the ordering will be reversed. The most important question will not be “What have you done?” but “What difference did it make?” The former question reflects the Judeo-Christian tradition that work is inherently valuable, whereas we now view work as valuable to the extent it achieves the purposes toward which it is directed. Consequently, leaders need to consider the relationship between the work, the worker, and the purpose of the work as a dynamic that continuously drives value. Further, they need to understand that the relationship is cybernetic, which means that each element supports and feeds the others in a seamless connection.

Although the relationship between process and outcome is clear, it is not always direct. There are many circumstances and variables, including inherent and contextual influences, as well as unplanned factors embedded in the process, that affect the relationship between each element of the work and the outcome of the work. These variables interact with the work process and influence both the process and the outcome. It is here that complexity plays its part.

The new age commitment to focusing on process from the perspective of outcome creates havoc among health professionals. Leaders must be fully aware of professionals’ intractable attachment to process and the functional activities that make it up. People generally come to prize particular work activities once they become expert at and are rewarded

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**Group Discussion**

Explore the notion of goodness of fit between outcomes and processes. In particular, discuss how a leader’s expectations regarding staff would likely change if the leader looked at processes not independently but from the perspective of their outcomes. As part of this discussion, describe what steps the leader could take to get staff to focus on product (outcome) rather than function (process) and what changes would occur in the provision of health care services as a result.

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**Key Point**

In the emerging age, a large part of the leadership role will involve facilitating the transition to a new way of living and working. Leaders will increasingly devote their energies to helping others adapt to the new rules for thriving in the world of work.
for doing them. They find it a challenge to adjust or even eliminate what they do in the face of a lack of evidence that it produces anything meaningful or sustainable. Indeed, simply getting folks to the table to discuss the product of their activities can be difficult. Yet, this is what leaders must do if they are to change the content of the work and make it more meaningful.

**EVERYTHING IS PART OF ONE COMPREHENSIVE SYSTEM**

Formerly, it was believed that three types of functional relationships existed. Any two things in the universe were independent of each other, they were interdependent, or one was dependent on the other but not the reverse. In the quantum age, however, we realize that all things are interdependent (**Exhibit 1–10**). That is, all things are tied together in a wide variety of refined and sometimes inexplicable ways, some obvious and some all but invisible at any level of observation.

Leaders now must carry out their tasks with an awareness of the relatedness of processes, actions, behaviors, and functions. No act is independent, and no act adds to the viability of an organization independently. Every element interacts with every other element in some way, and all the elements together constitute a complex mosaic of movement and intersection. When looked at as a whole, the picture the elements present—and the information they impart—is entirely different from when they are viewed separately. Indeed, looking at the parts independently of each other may lead one to draw conclusions that might actually impede the progress of a whole process or prevent its completion, with lasting and perhaps limiting results.

**Exhibit 1–10: Interdependence**

In nature everything is interdependent. There is an ebb and flow between all the elements of life. Leaders must see their role from this perspective. Most of the work of leadership will be managing the interactions and connections between people and processes. Leaders must keep aware of these truths:

- Action in one place has an effect in other places.
- Fluctuation of mutuality means authority moves between people.
- Interacting properties in systems make outcomes mobile and fluid.
- Relationship building is the primary work of leadership.
- Trusting feeling is as important as valuing thinking.
- Acknowledging in others what is unique in their contribution is vital.
- Supporting, stretching, challenging, pushing, and helping are part of being present to the process, to the players, and to the outcome.
To help the readers adopt the proper perspective, this book discusses the principles of complexity and chaos theory and explains how chaos can affect work, relationships, organizations, and interactions. It also discusses many of the new skills and talents that leaders must acquire, as well as new metaphors and terminology better suited to describe work-related interactions and processes. By attaining a deeper understanding of the implications of systemness and complexity, leaders will relate to and interact with others in new ways and be challenged to develop a new foundation for their role as leaders.

**A NEW UNDERSTANDING OF PLANNING IS NEEDED**

In the Industrial Age it was believed that everything should be outlined and planned down to the smallest detail. The expectation was that by planning future activities with great specificity, an organization could respond to the current situation accurately and effectively. Henry Mintzberg (1994) stated that most of the largest companies in the world really only accomplished 20 percent of what they had originally planned to do. Think of the resources devoted to planning that garnered virtually no return on investment.

When a plan is constructed, the future looks a certain way at that moment in time, and the context at that moment creates the foundation for what is perceived. However, because change is constant and the universe is forever in a state of chaos and creativity, the context is shifting rather than stable. The reality at the planning stage quickly gives way to a new reality that could not have been anticipated at the planning stage. And, of course, this cycle is continuous and never ending, making it impossible ever to plan with broad certainty.

Leaders now must incorporate the vagaries of complexity and chaos into the process of anticipating and planning for the future. Detailing the specifics of some future state is no longer a viable means of planning. Discernment and signpost reading are better skills to have than are those related to defining and direction setting. Leaders must realize that no real-time insight is sustainable, nor is it entirely accurate. It is simply a reflection of the particular point a person or organization is at in their continuous and relentless unfolding and becoming.

A good leader is one who can read the signposts that suggest a change is imminent and can discern the direction of the change and the elements indicating its fabric. The good leader synthesizes rather than analyzes and views the change thematically and/or relationally, drawing out of it what kind of action or strategy should be applied—that is, the response that best positions the organization to thrive in the coming circumstances.

For a leader to act as a strategist today means not detailing the organization’s future actions, but translating the signposts of change into language that has meaning for those who must do the work of the organization. Translating the signposts into understandable and inspiring language is more critical than almost any other strategic task. It is vital that a change have implications for those who are doing the work. Another way of saying this is that it must have meaning to them within the framework of their work activities so that they can commit to it, which they must do if they and the organization are to adapt to the change successfully. The leader’s job is to describe the change in a way that allows the workers to understand its value and how it will affect their own efforts.
In this new era, leaders need insights about contextual themes rather than step-by-step guidance on how to implement a minutely defined vision. They must understand that their organization is on a journey and that they need to continuously peruse the landscape for guidance rather than create a list of steps through which the organization will move on its way to a preset future. Becoming aware of the themes and undercurrents and reading the contextual signposts regularly is a wiser and more effective strategy for the new age leader than laying out an itemized plan that may or may not correspond with future conditions.

**Swarmware and Clockware Need To Work Together**

Kevin Kelly (1998) coined two terms, *clockware* and *swarmware*, to describe contradictory forces that must work together to create meaningful action and a thriving workplace. Clockware is the rational and structured process framework; it is ordered, vertical, rational, purposeful, and organized. Swarmware, on the other hand, consists of the disparate intuitive, sensed, inherent processes at work just under the surface of all action. Swarmware is as essential to the effectiveness of a system as clockware. Overdependence on either one prevents the system from adapting to the demands of change and keeps it from thriving.

Historically, leadership has emphasized rational and operational science skills and functions at the expense of intuition and feeling. In most workplaces the former, seen as more “masculine,” is prized, whereas intuition and feeling, often viewed as “feminine,” are taken to be less applicable in the hard-driving corporate world.

Even in health care, caregiving and relational behaviors were viewed as okay for nurses and doctors but as having no place in the business end of service delivery. The principles of quantum, chaos, and complexity theory, however, entail that failure to incorporate these behaviors into the operations of an organization—in addition to rational, hard-driving, objectified behaviors—reduces the organization’s viability. Too much of the rational and hard driving can alienate people and distance them from the work process, reducing their energy, their creativity, their commitment to the organization, and their ability to perform their jobs effectively.

Simply being capable and competent in form and function is not enough; leaders must also exhibit the ability to balance a complex range of skills and system resources to develop the employees’ capabilities and grow the organization. They must know how to create a balance between means and meaning, and enter into the relationship between all the elements at the personal level and at the organizational level. Incorporating their vast array of behaviors and skills into the mosaic of interactions creates resonance between the functional and the relational, both of which are essential for developing and maintaining the vitality of person and system.

**Point to Ponder**

Good leaders know how to integrate the rational and the intuitive, for both are equally important. They conflict with each other but also complement each other. Consequently, leaders must think clearly and rationally while at the same time remain sensitive to the underlying flow of change.
LEADERS MUST FIND THE RIGHT BALANCE

Weighing the various structures and influences in a work system and finding just the right mix of elements are challenging jobs. Yet that is exactly what leaders must learn to do. And they must learn to do it with a minimum of artificial supports and structures.

The infrastructures of most of the health care system are so burdensome and complex that they actually interfere with the ability of organizations to do what they are designed to do. Because of overstructuring, most organizations would not know how to live without the structural elements that encase every function and activity in the system.

In the new age, we must come to realize that there should be just enough structure to support the integrity of the organization and not an ounce more. The more structure an organization has, the more structure it serves and the more resources are drawn away from the system. Structure is actually an enemy of work and effectiveness. Under the rubric of “good order,” structure drains the energy and creativity out of a system and obstructs relationships and interactions necessary for the system’s functioning. It ends up crippling the system's ability to do its work and to fulfill its purposes. The goal of an organization's leadership should be to reduce structure as much as possible.

Structure is like information in that both can easily be overvalued. Information clearly should play a role in decision making. Yet there is never enough information to guarantee a decision is the right one in given circumstances. Furthermore, an organization can strangle itself with data in the effort to know everything pertinent to a critical decision before making the decision. Leaders need to accept that they will never know enough to guarantee the correctness of their decisions and that information is simply a tool that offers a glimpse of relevant factors at a given point in time. Because conditions are constantly changing, too much dependence on information can lead to poor decisions just as easily as a total lack of information can.

For information to be valuable, its quantity is not as important as its relevance and its quality is not as important as its timeliness. Leaders must know how much information is enough, what its focus is, what it indicates, and what its bearing is on the decisions that need to be made. They also must know when the limits of information have been reached and when its application requires discernment, deliberation, and judgment.

At every level of activity, there is a complex pattern of irregularity. Quantum scientists call this pattern a fractal. Fractals are embedded in every element and process of life. Although complex, they exert an influence on order and chaos in the universe and are evident in the
action of planets and stars, plants and animals, even the beat pattern of a human heart. Our understanding of fractals and their application to organizations flies in the face of every organizational model. These models, including the organizational charts and job descriptions associated with them, are part of a concerted effort to exclude from organizational life the disorder and chaos that lies just below the surface. Yet no matter how rigorous the structure, the chaos bursts through and creates confusion and discord, making nonsense of efforts to control it.

It is impossible to codify all the activities in an organization. How many health care facilities now have so many policies and procedures in place that they sit on the shelves neglected until the next accreditation visit? It is simply not possible to codify all the elements, interactions, and relationships necessary for the care of human beings. The vagaries of the human condition militate against creating a format or structure that sets adequate behavioral or procedural parameters for treating medical conditions. The foundations of action lie in the principles of care and service, but although the principles are constant, the context within which they are applied is not.

Here again, it is the relatedness between factors that should drive a leader’s response. Because the elements, behaviors, and variables affecting action are uncertain, the leader’s task is to achieve as much balance as the circumstances allow. And because this balance is fluid, the leader must act to adjust it in response to changes in the circumstances, including internal and external influences. The leader is always interpreting, explaining, adjusting, and applying the issues and dynamics affecting the character of the work and the integrity of the workplace.

Besides being an explicator of chaos wherever necessary, the leader must be present to the staff in a way that ensures them of connection, understanding, and experience. The leader must show that he or she is as vulnerable to the vagaries of circumstance as anyone else and can live with chaos comfortably and knowledgeably. Still, it is difficult at best to deal with chaos. People fundamentally love order and want their leaders to deliver stability and “normality.” Despite this fact, leaders, rather than insulating people from their

**Group Discussion**

In a fractal the whole is replicated in each part. Each branch of a tree, for example, shows the same pattern as the whole tree, as does each leaf. Again, the indentations and projections in a few feet of shoreline may mimic those in a 100-mile stretch of coastline. Apply the notion of a fractal to organizations, groups, and teams. For instance, how does the notion of a fractal apply to the design of an organization? To the relationship between leaders? To roles? How does it apply to the organizational chart for a health care system?
innate disorder, must instead help them to embrace it, understand it, and develop the personal skills necessary to cope with it.

**CHAOS AND PARADOX ARE ALWAYS AT WORK**

Even at the fundamental levels of life, chaos is hard at work. Creatures as small as one cell are constantly undergoing accidental modifications that give them a better chance of thriving. It is a basic requisite of all life to adapt to changing conditions. The demise of the dinosaur is a good example of what happens when living beings fail to adapt.

The age we are fast entering is vastly different from the age we are leaving. Science and technology are altering every aspect of our lives. Our challenge is to embrace the new circumstances and then sort out their implications and applications as we go. For the person who says, “I don’t want to learn about computers and how to use the Internet,” the best response may be to say, “Die, it will be easier on you.” Although facetious, that piece of advice reflects an element of truth. Technological advances and the challenge of adapting to them are not going to go away.

In the coming age, leaders will be called on to tell the truth, teach coping and adaptation skills, and learn new skills and apply them in new ways and in new settings. The infrastructure that generated past leadership roles is disappearing, and the new circumstances will demand new roles and challenge everyone to respond to a whole new set of questions.

Furthermore, the new age will open up the door to uncertainty and a general lack of “rightness.” The prevailing principles will be open to interpretation and will be applicable in a host of ways. No one response to a change or answer to a question will be clearly best. There might be many correct responses depending on the cultural and intellectual context. Leaders will have to respect the diversity embedded in every condition or issue (Exhibit 1–11).

The techniques for finding common ground, for sorting through the various landscapes representing the diversity inherent in each issue, are now required by every leader. Also required are consensus-building and group-process skills, because leaders have the job of getting people to come together around issues and helping them determine appropriate responses within the context of their own roles. This is a challenge that cannot be met by establishing standardized job procedures or rules.

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**Exhibit 1–11   Paradox**

There are many paired elements of life that appear contradictory but at a deeper level are in fact complementary. These include the following:

- Chaos and order (there is order in all chaos and vice versa)
- Creativity and tension (tension leads to creativity and creativity causes tension)
- Conflict and peace (conflict is necessary to peacemaking, containing in it the elements upon which peace must be built)
- Difference and similarity (difference seen at a great distance appears as an integrated whole)
- Complexity and simplicity (complexity is simply the visible connection between aligned simplicities)
Leaders must develop an affection for risk and for the edges of agreement and understanding. They must be able to “push the river” so that the mental models people bring to the resolution of concerns or the determination of strategies and actions are shifted or even fundamentally altered. There is nothing worse in deliberation than using a mental model or frame of reference that does not fit the circumstances. As we move inexorably into the new age, we must try to understand its characteristics within the context of its becoming rather than of the past. Peter Drucker said it best when he suggested that we must all close the door on the Industrial Age and simply turn around.

It is in turning around that we begin to confront the inadequacies of our historic mental model. We begin to see the future unfold within its own context rather than one we bring to it. We look over the landscape of our becoming and are stimulated to go to those places that least fit our prevailing mindset and that challenge what we understand and the language we bring to the journey.

Leaders need to be called out of certainty into experimentation. They must take smaller steps and let the consequences of each step suggest the best direction in which to move next. It is in the steps of experimentation—of testing and evaluating—that their direction and its appropriateness can be discerned most easily. Finally, leaders stand to gain most information about what is viable and sustainable by bringing a variety of testing procedures together and using them jointly.

**PAY ATTENTION TO THE INFORMAL NETWORK**

In every organization there is a formal structure and process and an informal network. This network is primarily relational and carries most of the information about how people in the organization think or feel and what their sentiments are regarding almost anything in the system. It is as vital and valid a part of the system as any other, and it requires attention because, among other things, it typically contains essential pieces of the dynamic that have been overlooked or missed as well as the “undiscussables,” issues that are too sensitive to lay on the table and opinions that do not reflect the prevailing point of view. Embedded here too are some of the most dynamic notions of what should happen or what should be done.

All elements of the system, whether formal or informal, are a part of the dynamic of change in the organization. Each can be a vehicle for action and even transformation. Leaders need to pay notice to all the informal pathways and networks of communication and relationship, from hallway conversations to lunchtime discussions, from whispered comments to sarcastic asides—each plays a role in the complex web of interactions necessary for sustaining the organization. Taking an
opportunity to hear, communicate, or interact is never inappropriate. All means are legitimate and deserve attention. Each, when joined with the others, contributes to discovering the state of the organization and determining the proper actions to take to strengthen it.

**Simple Systems Are Linked To Create More Complex Systems**

The universe consists of a web of simple and discrete networks that cannot survive or function without some intersection and interaction with each other. Complexity is the sum of simplicity. Each needs the other to thrive. Simple systems seek out each other in a mysterious dance of self-organizing and join with each other at appropriate intersections to configure a larger whole. Called *chunking*, this process is similar to fitting pieces together from a child’s erector set to build a structure. Each element has its own purpose and meaning, but its purpose remains unfulfilled until it interacts with the other elements.

The implication for human organizations and behaviors is that all things begin with the simple. Sustainable change rarely originates at the top of a system; instead, it usually starts at the center and works its way outward. For instance, the purpose and meaning of a service organization are generated by the staff closest to where the services are provided, which is also the organization’s source of development.

Leaders need to understand that sustainability comes from where the organization lives out its life—the point of service. Here the pieces of the organization come together to fulfill the organization’s purpose. Here is where providers and clients come together to live out the processes toward which the organization’s infrastructure and operations are directed.

Although leaders profess to recognize the importance of the point of service, the design of many organizations does not reflect the point of service’s key role. The organizational hierarchy typically strangles the dynamics of the system and creates an artificial and unsustainable framework for decision making and action taking. Individuals not at the center are often placed at the top, leading to a misalignment of priorities and a lack of accountability for decisions at the point of service.

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**Group Discussion**

Karen Weiss, RN, is the head of the nursing department in a medical clinic. The staff members like her because she can get things done and keep things moving. Although she has a highly developed sense of order, recent changes are making it harder for her to stay “in control.” She feels as though things are getting ahead of her and she is losing her touch. Others also are not as satisfied with her performance as they were. Discuss the following questions: What is the real issue in this case? How is Karen’s need for control in conflict with the principles of complexity? Who has accountability for decisions? Should Karen change her manner of leading? If so, how should she change it, and what does she need to do to change it? How does Karen make sure that the staff is more involved in decisions that affect their own lives?
Point of service take responsibility for strategy, policy, and direction setting and, by so doing, remove the authority to act from its rightful place. It is a universal principle that the further away from the point of service a decision about what goes on there is made, the higher the risk, the greater the cost, and the lower the sustainability. Sadly, many organizations increase their risk and their costs and fail to attain their objectives as a result of failing to incorporate this principle into their way of doing business.

Staff, in constructing the correct complex relatedness and infrastructure, must be free to “chunk” from their center and create linkages with the strategic, financial, and support structures that facilitate their work. Here again, tearing away much of the intervening infrastructure and the organizational layers and compartments serves to free the organization to enter into the more fluid and variable relationships it needs to provide health care. The simple essential components can then be joined by those who own them to other essential components to construct a web of intersections and resonating connections that hums with life and meaning.

The operation of a computer perhaps best exemplifies these forces at work. Software code has defined functions but must interact with other pieces of data before it has utility for the computer user. A certain segment of code may be said to have application value, but it must interact with other segments before this value can be realized. In other words, each segment has value in virtue of its contribution to the whole.

Learning occurs in the same way. Simple concepts lead inexorably to other simple concepts, and when they are all ultimately tied together, the learner understands the interdependence of different simple processes and thereby achieves knowledge. Furthermore, the learner recognizes that knowledge, rather than being valuable in itself, is valuable to the extent that it can be applied in action.

What complexity teaches us about knowledge is that it is not so much a capacity as a tool. It has relevance at a particular moment or in a specific situation. A shift in the context, an increase in understanding, or new information affects the elements of knowledge and challenges the person to “move on” and adjust what is known, valued, and applied. In fact, there is an endless dynamic comprising the aggregation of knowledge, the letting go of what is no longer valid, and the reaching out for what is next in the endless journey of learning. The critical point here is that what is relevant or irrelevant, adequate or inadequate, at any given time is not the whole of a person’s knowledge but rather pieces or elements of knowledge (chunks). The person moves in and out of these chunks and, in so doing, alters the relationship between them and the whole complex of knowledge.

In systems thinking, leaders are aware of the importance of “intersections.” It is here where much of the work of leadership unfolds. The interface between the elements of a system is where much of the challenge and the work of effectiveness occur. The problems
of creating good fit between the pieces of a system require focus and effort on the part of the leader and serve as the place where most of the “noise” and confrontation between people and systems unfolds.

Good leaders understand this and are able to use it in the interests of others and of the organization. They never get so attached to any specific item, process, or activity that they treat it as permanent and/or unchanging. Each item, process, or activity is part of a mosaic and comes and goes depending on the demand for it at various times. Good leaders know to let go when that is appropriate and to take on and adjust when that becomes necessary. Furthermore, they know that the organization’s complex and chaotic circumstances require them to keep an eye on the larger picture and read the changes that are occurring or about to occur and make the necessary adjustments at the appropriate time.

Good leaders know that a complex system works when the simple systems work. If something is wrong at the point of service, the system as a whole is affected. Because the interdependence between simple components is so “tight” in an effective and viable complex system, any break in the simple (or local) systems leads to breaks at all levels of the complex system. It is by ensuring the effectiveness of the simple systems that good leaders facilitate the integrity and efficiency of the whole system (Figure 1–4).

**SYSTEMS DO NOT COMPETE WITH EACH OTHER BUT SIMPLY SEEK TO THRIVE**

Chaos theory and quantum theory hold that competition is anomalous. Still, the current literature on organizations and their management contains numerous discussions of the viability and importance of competition.

All living systems seek to thrive. At a fundamental level, they are not concerned with each others’ survival unless it is somehow related to their need to thrive. Adaptation is not about competition between the fittest but about survival of the fittest, and the survival of a system is more dependent on its inherent adaptability to its environment than on anything else. To thrive, the system must have beneficial interactions with its environment and must also have the capacity to adjust to the prevailing conditions quickly and effectively. A system is fundamentally in competition with itself, not with anyone or anything else (Figure 1–5).

The concept of being in competition with oneself is generally foreign to capitalistic ways of thinking. Still, even capitalism treats competition as fundamentally a personal exercise—a contest between oneself and others for profitability and success. What it does not always recognize is that whether success is achieved has less to do with one’s competitors than with one’s adaptability, creativity, energy, and commitment to succeed. In other words, the pursuit of success should not be viewed as a contest with others but as a personal effort to give one’s best and to thrive in the environment one has chosen to live in.

In the coming age, persons and organizations increasingly will be challenged to adjust to the new context and the new rules. Those that thrive will be those that can read the signposts and apply the new rules to their own lives or their own operations. Organizational leaders will need to learn the fundamentals of thriving in the new age. They must make a diligent effort to keep up with the transformations in technology, global communications, information infrastructures, and social conditions. Here again, reading the signposts becomes a very
Figure 1–4  Point of Service Systems Design

Figure 1–5  Structural Integrity and Interdependence: Functional Components of a Health Structure
important skill. Paying attention to indicators, monitoring innovations, experimenting with new and unfamiliar approaches, and living comfortably with the ambiguity and "noise" of change are all essential skills for the great leaders of the future.

**The Compression of Time Will Affect How Work Is Done**

There simply cannot be a leader anywhere on the earth who has not noticed the not-so-subtle change in our sense of time and space. Most people now in the work force have noticed how time has speeded up and how radically its quickening has affected the content and flow of work. Leaders can turn anywhere and hear others in the organization suggest that there simply is no time to do all that is required. Leaders themselves are aware of how very little time they seem to have to meet what appears to be an increasingly large set of demands.

Technology, including the prevailing methods for purchasing and shipping material goods, is primarily responsible for the compression of time and work. For example, LASIK surgery, a type of corrective eye surgery, takes only seven or eight minutes; Internet grocery stores deliver groceries within two hours of the placement of the order; and communication by e-mail is virtually instantaneous. Quick transmission of information and quick delivery of goods and services are increasingly normal in our global society.

The need for hierarchy—for many layers of decision making and management—has all but disappeared from the business world. In the late 1980s and early 1990s, business leaders reconfigured their organizations to eliminate management structures that had long been part of organizational culture. The goal for organizations was to become nimble and fluid, and whatever impeded their achievement of this goal was either cast off or reconceived.

Health care organizations are today going through a crisis similar to the one that existed in the business community 10 years ago. There is too much “brick-and-mortar” infrastructure in place to support a delivery system that has all but disappeared, and this infrastructure is now an impediment to the system’s survival. Changes in technology, service structure, clinical models, consumer demand, and health care economics are conspiring to create a need for health care organizations that possess the same fluidity and nimbleness formerly required of businesses. The chaos currently being experienced in the system arises from the conflict between the requirement for a radical shift in design and service and the continuing commitment of leadership to the outmoded infrastructure. The myriad stakeholders in the health care industry—nurses, doctors, hospitals, pharmacists, and so on—are struggling to hold onto their piece of the health care pie without realizing the pie is now being sliced in an entirely different way.

**Key Point**

There is never enough time. Technology has compressed time so that what once was enough is now insufficient. Leaders must help others see their work from the perspective of compressed time. For example, now that clinical interventions require less time, practitioners and patients must shift their expectations to fit the narrowed time frame.
The compression of time is inexorably working to reconfigure the context for health care and restructure its framework without the consent of the participants. Health care leaders must now focus on interpreting external demands and translating them into internal actions. They are being called into the chaos of creativity to produce a good fit between the new framework demanded and the infrastructure that must be constructed to support it.

Much of the current work of health care leaders involves deconstructing health services. The current infrastructure must be largely deconstructed so that it can be replaced by newer models of service and support. Leaders must perform a range of activities in reconfiguring health care to fit the coming age, when space and time will be further compressed, services will be more fluid and more highly mobilized, and the locus of control will shift from the provider to the user. The changes that will occur include these:

- The hospital bed will cease to be the main point of service. During the next two decades, the number of hospital beds will decline by about 50 percent.
- The service structure will be decentralized. The health care system will deliver small, broadly dispersed units of service.
- Services will increasingly move out of the hospital. More than 70 percent of the medical services currently provided in hospitals will be provided in clinics and doctor’s offices by the end of this decade.
- The core practices of the professions will be substantially altered. The institution-based late-stage services that once predominated will be replaced by high-intensity interventions that do not require hospitalization, and these interventions will transform the roles of the various health professionals.
- Users of health services will become more accountable for their own health. Providers now have the major job of helping to transfer the locus of control for medical decision making and life management to individuals who have never had it and do not yet know what to do with it. Their work over the next two decades will include educating the users of health services and assisting them in acquiring the necessary skills.
- The users of health services and the technology of health care will progressively interface such that virtual and technical interaction and communication will become the norm of health service provision. Connection between providers and patients will increasingly be virtual, with supporting technology making clinical services possible without bringing patients to the provider to use these services.

For the deconstruction of health services to be effective, leaders must know that this transformation is taking place and agree to lead the effort. The conditions are already in place, but the work of making the change meaningful and feasible has yet to be done. If a leader is opposed to the transformation or is unable to acquire the necessary skills, then both the leader and the transformation suffer.
One responsibility of leaders is to help others mourn the loss of what is passing. For example, many of the reasons that led people to enter the health professions no longer apply. Despite this, health professionals often continue to believe that the reasons are still valid or refuse to acknowledge that their idealization of the past might be keeping them from embracing the future, to their own detriment.

One way to aid health professionals in mourning their losses is to help them enumerate these losses and determine what they must let go to obtain the skills and master the roles needed to function in the new health care system. Each person must give a voice to his or her own losses and symbolically let them go to turn in the direction of change and innovation and meet the coming challenges. By doing this, the person becomes free to explore the changes and ultimately design a personal strategy to accommodate him or her.

Death is part of the cycle of life and is a requisite of all change. Not everything in the universe that thrives will continue to do so. When circumstances change radically, some formerly vigorous systems fail. In some cases, the demands are beyond the system’s capacity to adapt; in other cases, the changes call for a new work format that cannot be achieved simply by altering some of the characteristics of the workplace.

Leaders are obligated to help those things that should diminish or die to do so quickly. They are expected to make it clear to the staff that the process of bringing something to an end is as necessary as any other organizational process. A part of the tough work of helping necessary change along is changing staff attitudes about the permanence of work. Employees do get stuck in their rituals and routines. Their attachment to these routines may be the only point of security they have in this fast-paced world. What they might not know is that holding onto practices that are no longer relevant endangers their ability to succeed in the future. Leaders must “truth tell” to keep staff in mind of the fact that work effort and function are transitory and that attachment to the work itself may be the greatest impediment to their own success and that of the system.

Leaders must keep their eyes fixed on the work and on how changes might impact the ability of staff members to do the work. The function of work continually changes, and attachment to work routines simply slows the individual’s adaptation. A refusal to adapt does not diminish the demand for change; it just makes the adjustment to the change increasingly more difficult for the individual.

**Group Discussion**

Twenty years ago the average length of stay in a hospital was about 5.7 days. In the coming decade, the average procedure will require a stay of only 4.5 hours or less. These two facts indicate the extreme shift in the nature of clinical services. Discuss how the new service model will change the way health care providers work. What tasks will cease to possess value? How can leaders convince staff to abandon old practices that are no longer relevant? And what are the implications for patients?
All Change Ultimately Makes Good Sense

As Stephen Hawking eloquently stated, “Change is.” Chaos, complexity, and change are not things but forms of dynamic activity. According to Hawking, they are the only constants in the universe. They will never cease, for their end would be the end of everything. Perpetual dynamic movement is what underpins every action and process. This aspect of reality is less understood and less often made use of than physical laws, but it exists nonetheless.

Leadership is mainly concerned with adapting to change, and all the leadership functions and activities outlined in this and other contemporary leadership texts are informed by this understanding. In fact, theorists are inclined to be less definitive than formerly in their statements about the attributes of leadership and in their recipes for leadership success. Instead of being guided by an unchanging set of principles, leaders need to be fluid and adaptable, because their role changes in concert with the changing conditions.

Leaders are aware that it is in the pursuit of meaning that the direction of a change can best be discerned. They continually look past the real and the present toward the unformed and potential to better evaluate the present and the direction of transformation. The subtle themes and ebbs and flows that lie just beneath the surface of events and experiences have more to say to leaders than do the events themselves.

Leaders know that much of what is seen and experienced is a metaphor for the operation of the infrastructure of change. The chaos so often represented in the change process is a cover for an explicit and elegant order that can be perceived only by focusing on the whole rather than on the parts. Indeed, looking only at the individual parts makes it almost impossible to see the integrity, order, and beauty embedded in an elegant web of flow and linkage.

Leaders are motivated by the connections that give meaning and value to the current and the real (Exhibit 1–12). The rules that guide the journey of change are both simple and complex, and the full set is not fully comprehensible all at once. An important task for any leader is to discern the predominant operating variable impacting the journey at any given moment. Using insight, the leader is able to apply the value it represents and use it as a

Exhibit 1–12 Motivated versus Unmotivated Leaders

<table>
<thead>
<tr>
<th>Unmotivated</th>
<th>Motivated</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Focus on the present</td>
<td>• Focus on the potential</td>
</tr>
<tr>
<td>• No time for the work</td>
<td>• New kind of work</td>
</tr>
<tr>
<td>• Things are getting worse</td>
<td>• Things are different</td>
</tr>
<tr>
<td>• Cannot do the work any more</td>
<td>• New mental model for work</td>
</tr>
<tr>
<td>• No one knows . . .</td>
<td>• How can I get to know . . . ?</td>
</tr>
<tr>
<td>• It is too much for one person</td>
<td>• Share the work</td>
</tr>
<tr>
<td>• This too shall pass</td>
<td>• It is a journey I lead</td>
</tr>
<tr>
<td>• Doing more with less</td>
<td>• Doing different work differently</td>
</tr>
</tbody>
</table>
window for viewing the next factors, principles, or interacting forces pushing toward the next step in the transformation.

Leaders are forever caught in the potential. It is their ability to thrive in the potential that distinguishes good leaders from the rest. Good leaders are always on the edge of chaos, looking over the horizon, looking just beyond the precipice, and they are able to read, interpret, and express what they discern there. Their real gift is their ability to walk back to where those they lead are living and translate what they have seen into a language that has force and meaning for those who can hear it. They then have the job of getting behind the staff and pushing them into their own conceptualization and definition of the emerging reality, allowing the staff to own what they see and act on it in a responsive and viable way.

**Conclusion**

Leadership skills are learned skills, and their mastery requires neither magic nor a high level of intellectual capacity. Leaders emerge in a wide variety of circumstances and reflect a broad range of talents and personalities. There is no one pattern of behavior or personality type that is most suitable for the leadership role. In short, leaders come in every size and shape.

What leaders must possess is the ability to understand the vagaries and complexities of human interactions and relationships. In their role as leaders, they must take into account chaos and complexity as these do their work and create their inimitable patterns of adaptation and growth. Good leaders live in the edge land between now and the next and are able to engage folks in the journey of the whole across the landscape of a preferred and optimistic future.

Leaders in the coming age will need new skills and new insights about leadership and the preferred methods of “journeying.” These skills and insight can be learned, adapted to current conditions, and applied in a variety of ways to meet the demands of the journey. In their application, an individual may come to discover the leader in him- or herself, feel the excitement of leadership work, and catalyze others in the journey of discovery and advancement.

**References**


Suggested Readings


Fulmer, W. 2000. Shaping the adaptive organization: Landscapes, learning and leading in volatile times. Chicago: AMACOM.


Quiz Questions

Select the best answer for each of the following questions.

1. For the past 30 years we have been leaving what age?
   a. the Middle Ages
   b. the Age of Technology
   c. the Information Age
   d. the Industrial Age

2. What is the primary vehicle moving us out of the past age?
   a. economics
   b. technology
   c. satellites
   d. politics

3. As we get closer to fully living in the new age, the pace of change
   a. quickens
   b. slows
   c. becomes unstable
   d. stays about the same

4. Adaptation means
   a. adjusting to the current reality
   b. accommodating the emerging reality
   c. bringing the past reality forward
   d. living fully for today

5. Autopoiesis is a process in which
   a. living systems seek to continually reinvent themselves
   b. living systems leave behind forms they do not like
   c. living systems maintain their stability throughout each change
   d. living systems end themselves because they have no other role

6. Accountability is a matter of
   a. using good work processes
   b. acting responsibly
   c. performing efficiently
   d. achieving desired work outcomes
7. Systems thinking identifies which of the following as an essential characteristic of all systems?
   a. codependence
   b. predictability
   c. interdependence
   d. incrementalism

8. Chaos is essential to all change. The primary purpose of chaos is
   a. to confuse people enough to make them change
   b. to challenge people to see clearly the changes that are coming
   c. to cut people’s attachment to the past and engage them in the “noise” of change
   d. to get people to identify the characteristics of a particular change and to respond specifically to these characteristics

9. The primary role of the leader during a time of great change is
   a. to help people embrace change and engage with the change efforts of others
   b. to explain the kinds of changes people can expect
   c. to keep people from experiencing too much pain during the change process
   d. to push people into necessary changes and help them cope

10. Chaos theory and complexity science require leaders to alter their understanding of how change works. To develop a new understanding of change, leaders must first see their role in relationship to
    a. the changes that are occurring in the workplace
    b. the whole system and its place in the change process
    c. the staff’s issues and their responses to the demands of change
    d. the challenges that lie ahead in implementing new changes