



# Leaders Make the Future

Ten New Leadership Skills  
for an Uncertain World

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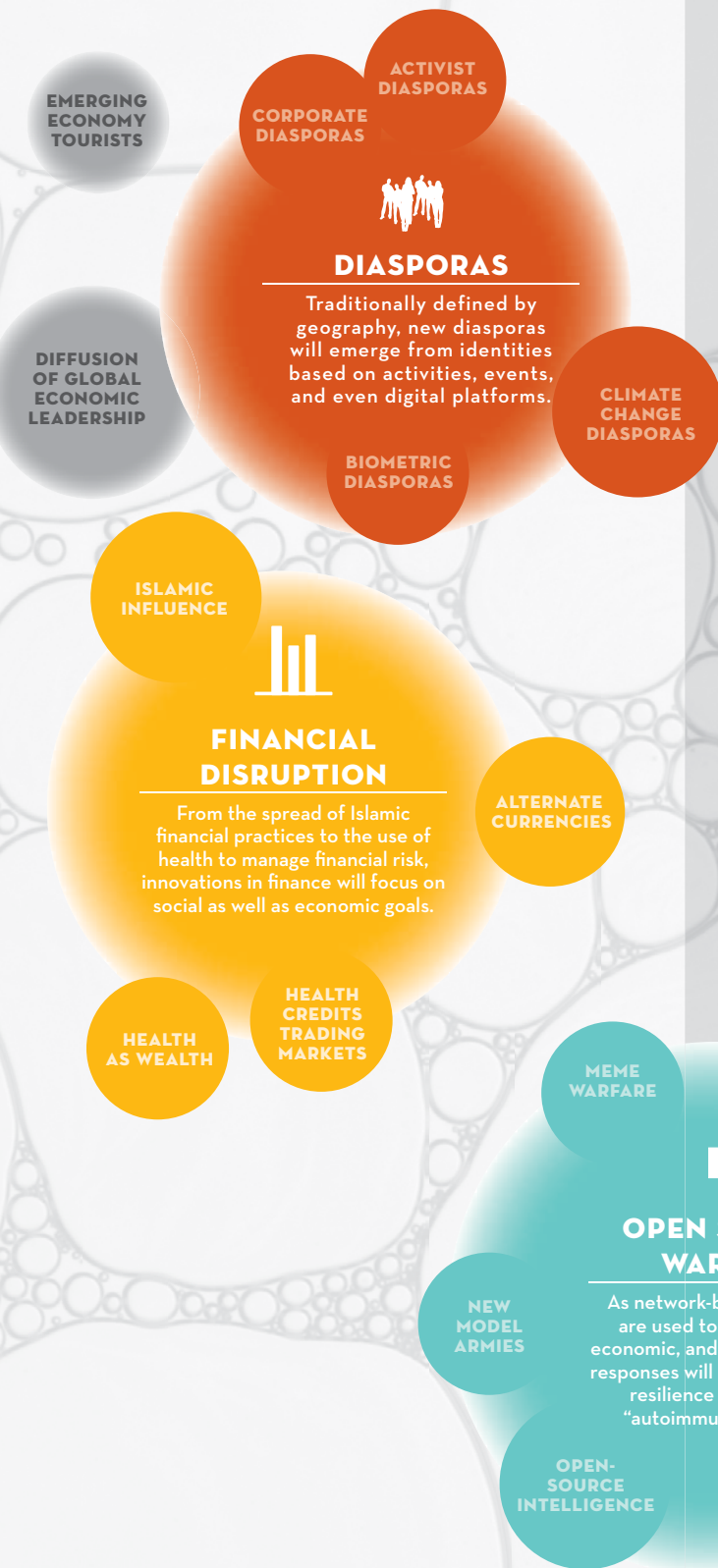
An Excerpt From

***Leaders Make the Future:  
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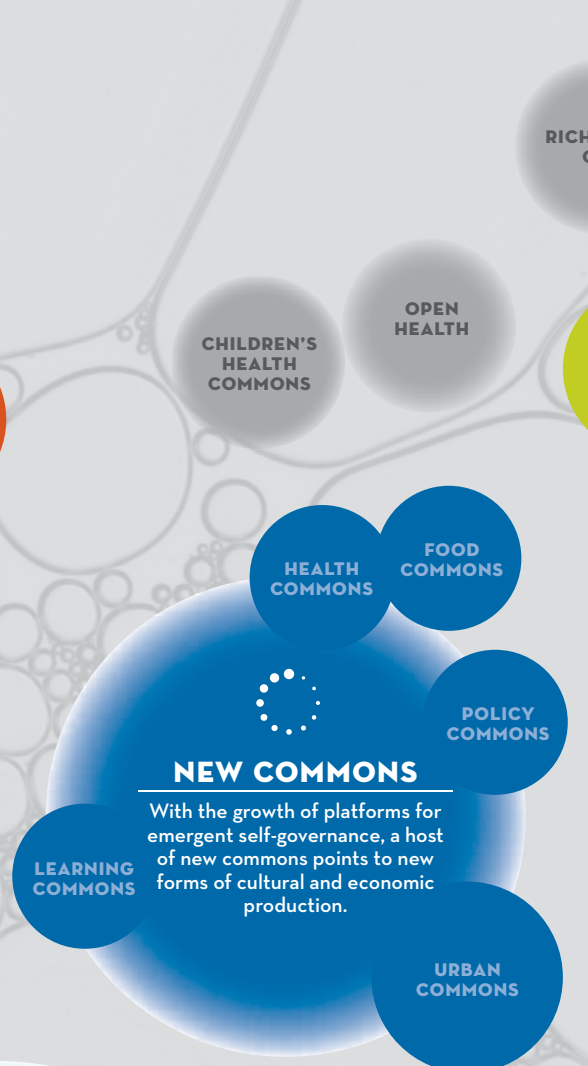
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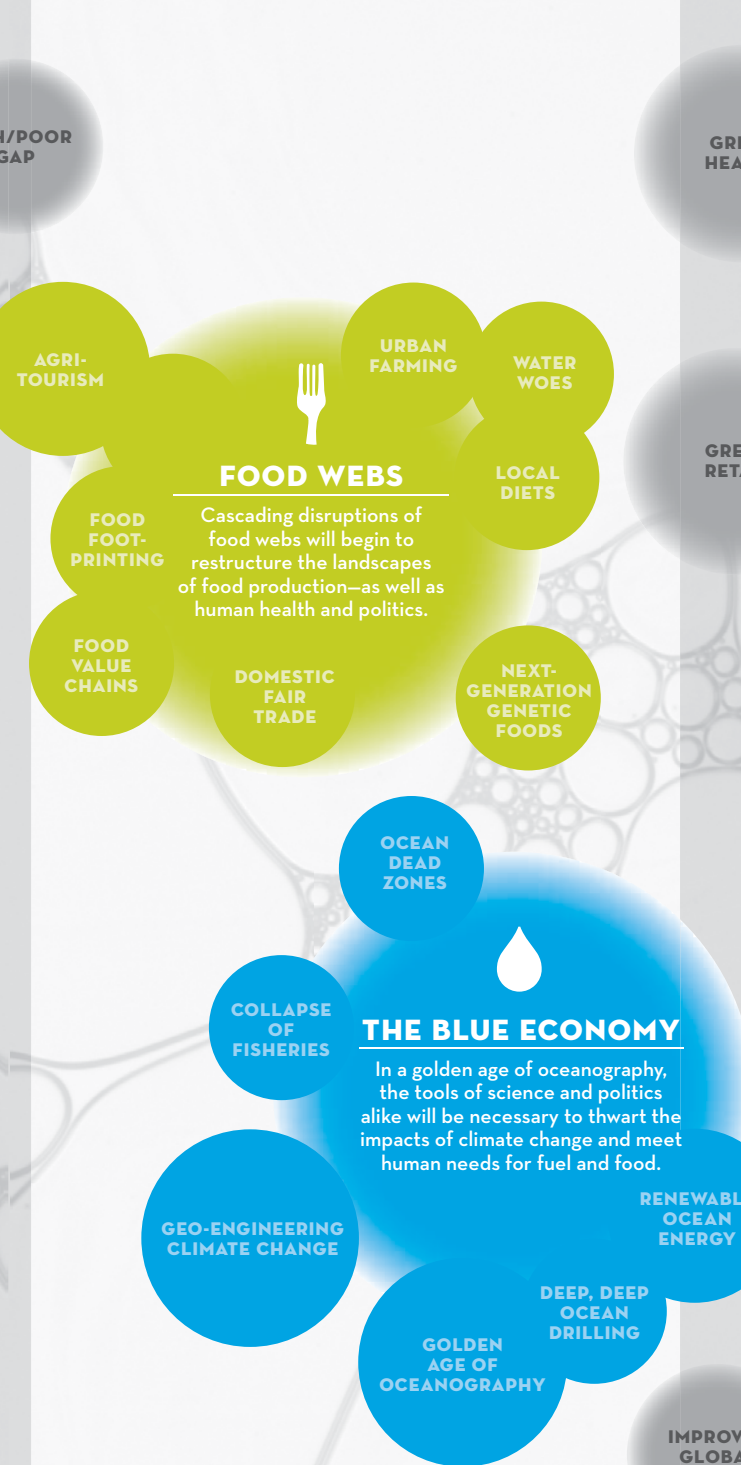
**DIASPORAS:**  
NEW EMERGING ECONOMIES



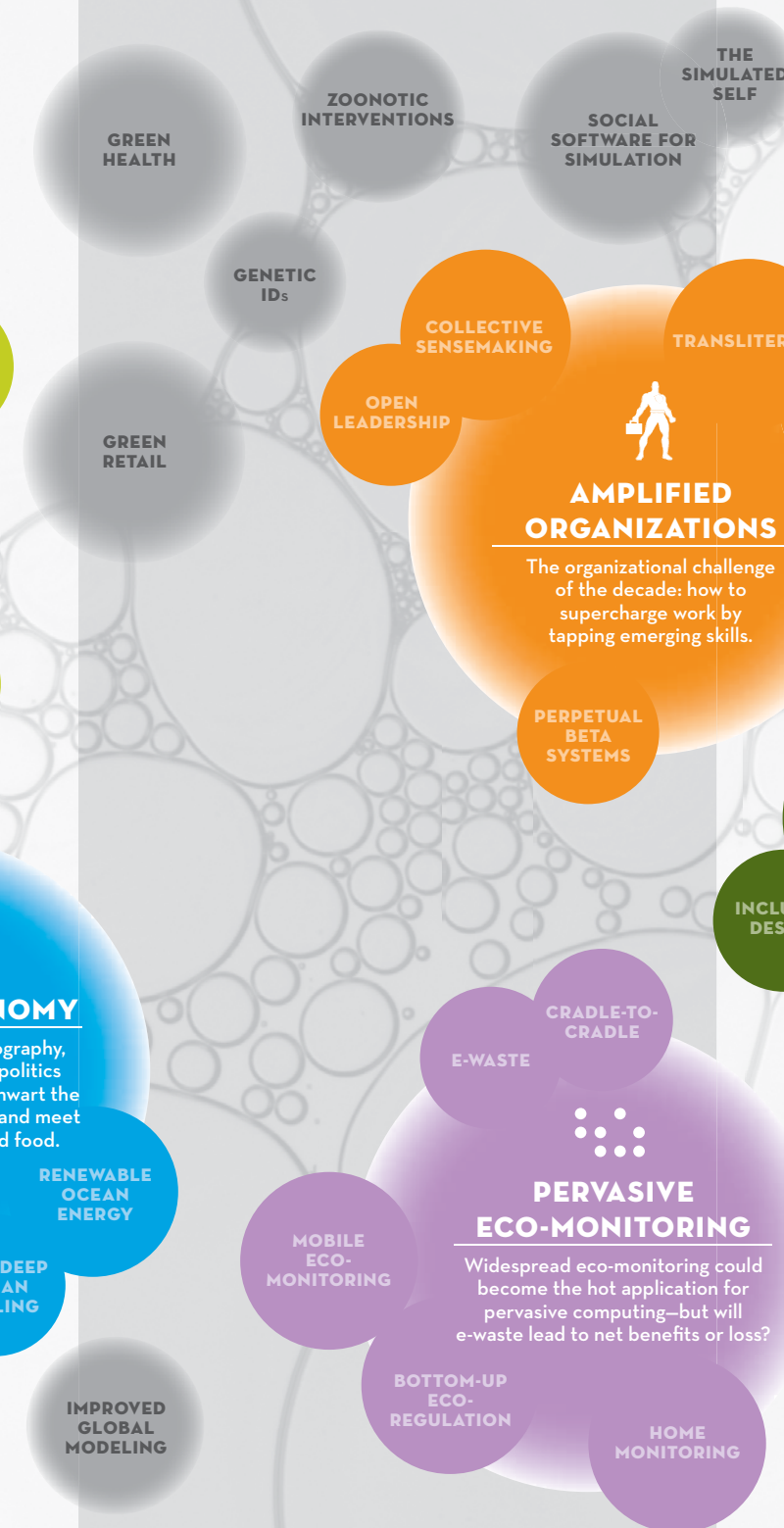
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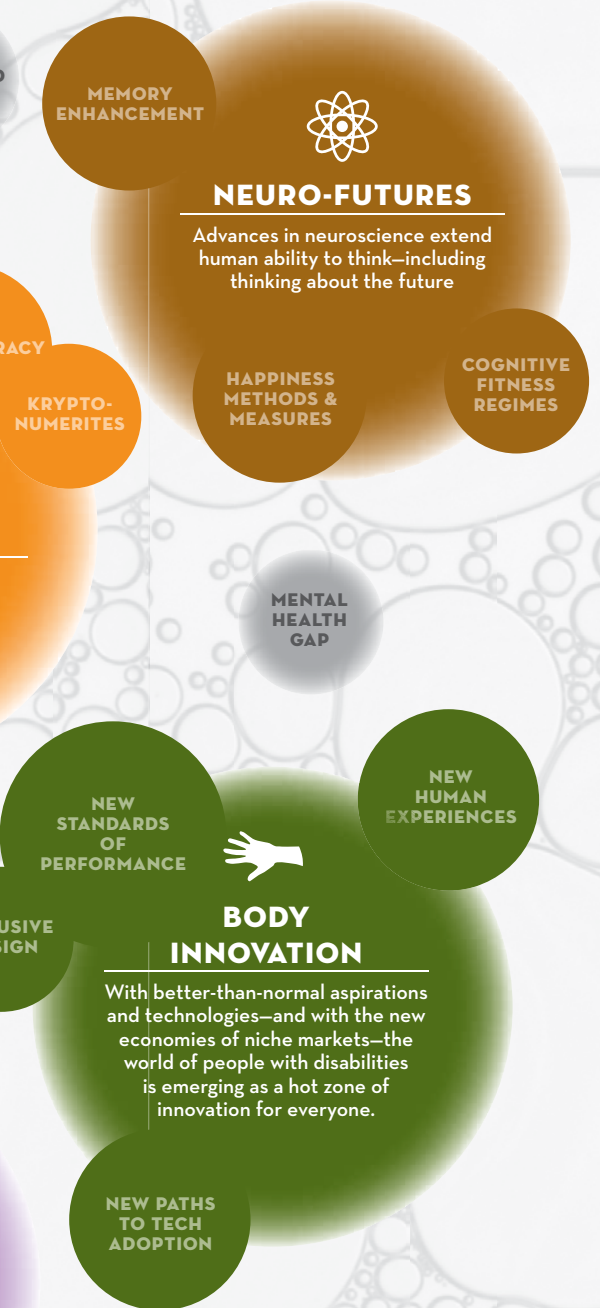
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**ECOSYSTEMS:**  
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**AMPLIFIED INDIVIDUALS:**  
EXTENDING THE HUMAN BODY



**LEADERSHIP SKILLS FOR THE FUTURE**

**MAKER INSTINCT** | Ability to turn one's natural impulse to build into a skill for making the future and connecting with others in the making. The maker instinct is basic to leadership in the future.

**CLARITY** | Ability to see through messes and contradictions to a future that others cannot yet see. Leaders are very clear about what they are making, but very flexible about how they get it made.

**DILEMMA FLIPPING** | Ability to turn dilemmas—which, unlike problems, cannot be solved—into advantages and opportunities.

**IMMERSIVE LEARNING ABILITY** | Ability to dive into different-for-you physical and online worlds, to learn from them in a first-person way.

**BIO-EMPATHY** | Ability to see things from nature's point of view; to understand, respect, and learn from nature's patterns. Nature has its own clarity, if only we humans can understand and engage with it.

**CONSTRUCTIVE DEPOLARIZING** | Ability to calm tense situations where differences dominate and communication has broken down—and bring people from divergent cultures toward constructive engagement.

**QUIET TRANSPARENCY** | Ability to be open and authentic about what matters to you—without advertising yourself.

**RAPID PROTOTYPING** | Ability to create quick early versions of new innovations, with the expectation that later success will require early failures.

**SMART MOB ORGANIZING** | Ability to bring together, engage with, and nurture purposeful business or social-change networks through intelligent use of electronic and other media.

**COMMONS CREATING** | Ability to stimulate, grow, and nurture shared assets that can benefit other players—and allow competition at a higher level.

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Please look inside the book jacket to find the visual forecast map that provides a context of external future forces that are likely to shape leadership skills in the future.

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Ability to exploit your inner drive to build and grow things, as well as connect with others in the making. • The maker instinct is basic to leadership in the future. • Leaders make and remake organizations.

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Ability to see through messes and contradictions to a future that others cannot yet see. • Leaders are very clear about what they are making, but very flexible about how it gets made.

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## INTRODUCTION

# Leaders Need New Skills to Make the Future

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If a man take no thought of what is distant,  
he will find sorrow near at hand.

CONFUCIUS

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LEADERS MUST LEARN how to make the future in the midst of volatility, uncertainty, complexity, and ambiguity. The discipline of foresight can help leaders make better decisions today. We need not passively accept the future. Leaders can and must *make* a better future. That is what this book is all about.

It is hard to even think about the future if you are overwhelmed by the present, yet that is exactly the time when foresight can be most practical. A global futures perspective can help leaders make sense out of the chaotic patterns of change in the external world. Looking to distant possibilities can provide new insight for the present.

Leaders are already experiencing volatility, uncertainty, complexity, and ambiguity (VUCA), but many of their responses are not constructive and the prospects for leadership in the future are not secure. Some leaders will judge too soon and draw simplistic conclusions while others will decide too late and pay a price for their lack of courage or inaction. Some will be overwhelmed by a sense of help-

lessness while others will become cynical and question everything around them. Some will react with anger. Some will pick a side and start to fight. And some leaders will deny the crisis or truly believe that the chaos will just go away. Such leadership responses are both understandable and dysfunctional.

Leaders need not be overwhelmed and pummeled by the world of VUCA. The future will also be loaded with opportunities. Leaders must have the skills to take advantage of those opportunities, as well as the agility to sidestep the dangers.

This book will unfold the ten new leadership skills in a definite order, moving from instinctual to complex. Each of the ten core chapters will describe a future leadership skill that any leader can either develop personally or partner with someone else to perform. The core chapters will help leaders answer these questions:

*Chapter 1:* How can you draw out your inner *maker instinct* and apply it to your leadership? Future leaders will need both a can-do and a can-make spirit.

*Chapter 2:* How can you, as a leader, create and communicate with *clarity* in confusing times—without being simplistic?

*Chapter 3:* How can you improve your skills at *dilemma flipping* so that you succeed with challenges that cannot be solved and won't go away?

*Chapter 4:* Do you have an *immersive learning ability* so that you can learn by immersing yourself in new physical and virtual worlds that may be uncomfortable for you?

*Chapter 5:* Do you have *bio-empathy* to learn from nature and use that wisdom to inform your decisions?

*Chapter 6:* Can you *constructively depolarize* conflict to both calm and improve the situation?

*Chapter 7:* Do you lead with a *quiet transparency* so you are open but not self-promoting?

*Chapter 8:* Can you do *rapid prototyping* by working through many scenarios during the process of development?



*Chapter 9: Can you organize smart mobs using a range of media?*

*Chapter 10: Can you create commons within which both cooperation and competition may occur?*

Our ways of thinking about the future have evolved fundamentally over the years. This artifact from the past comes from the 1964 World's Fair Futurama pavilion sponsored by General Motors. (See Figure 1.)



FIGURE 1. Badge from 1964 World's Fair Futurama pavilion sponsored by General Motors. *Source:* IFTF personal GM artifact, 2008.

Made of lightweight metal and designed so that it could be attached to your pocket or shirt, this motto reveals the popular view of the future in 1964. In those days, the future was something that could only be envisioned by a large company such as General Motors. The future was distant and driven by technology. Today, would most consumers trust GM—or any other large corporation for that matter—to create the future? I think not.

In 1964, the future was perceived as something so complicated that everyday people could only glimpse it if the big companies, powerful government agencies, or scientists gave them that chance. Leaders in this world were not very accessible—nor was the future they were thought to be creating.

In 2008, after discovering this vision of the future from the past, Jason Tester, who designs artifacts from the future at IFTF, remade a

new artifact based on the slogan “I have seen the future,” but injected it with modern maker spirit. (See Figure 2.)



FIGURE 2. New version of an old slogan. *Source:* IFTF, *The Future of Making*, 2008. SR# 1154.

This artifact captures the spirit of 2009 looking ahead to 2019 and beyond. Big companies, government agencies, or universities will not create the future, although they can certainly affect it. People will make the future, working together. “I am making the future” is a call to action, with an attitude.

The maker instinct is the most basic future leadership skill, and it energizes every other skill. All ten of the future leadership skills proposed in this book build on each other and work together. Clarity, for example, wraps a leader’s vision in practical but inspirational language that motivates people through chaos. Creating commons is the most ambitious and demanding new leadership skill. Every leadership skill is present in every other skill, and leaders need to decide which skills to emphasize when.

On the map inside the book jacket is a summary of the external future forces around us that will shape all ten of the future leadership skills. Each chapter uses these forces as lenses through which to view a particular leadership skill.

Leadership must change because of the external future forces. The global rich/poor gap is the most basic and the most extreme future force. People who are poor already experience the VUCA world: their lives are volatile, uncertain, complex, and ambiguous every day. Realistically and sadly, it is hard to forecast a narrowing of this gap, but easy to imagine it getting wider.

In *Get There Early*, I wrote an entire chapter on “The VUCA World: Danger and Opportunity.”<sup>1</sup> VUCA is not new. There has been plenty of volatility, uncertainty, complexity, and ambiguity for leaders to deal with (or not) in the past. The need for leadership in the face of uncertainty is also not new. What will be new in the years ahead is the scale and intensity of the likely disruptions. Having spent forty years forecasting, I believe that the future world will be *more* volatile, *more* uncertain, *more* complex, and *more* ambiguous, or so it will seem if you are in a seat of leadership.

In forty years of IFTF forecasting, the direst forecasts yet are in *Get There Early* and *Leaders Make the Future*. As frightening as they are, however, they can also be motivational. Many people, I hope, will dedicate themselves to proving us forecasters wrong.

One of my jobs as a forecaster is to help people learn how to be comfortable being uncomfortable—but certainly not passively comfortable. The most important value of forecasting is to help people learn to lead aggressively even if they feel uneasy. Discomfort will come with the territory for the next ten years—and probably far beyond. Leaders must not only get used to it, but learn to like it. If you are lucky enough to experience a future that is less chaotic, take it as a blessing and be happy that you are prepared for surprises, since you are still likely to experience them later in life. For most leaders, few things are predictable or slow moving.

Figure 3 summarizes the Foresight to Insight to Action Cycle that is described in detail in *Get There Early*. Even if you don’t agree with a forecast, it can be very useful to provoke insight. The purpose of forecasting is not to predict the future—nobody can do that—but to make better decisions in the present. The ten new leadership skills that are the core of this book summarize my forecast: they are plausible, internally consistent, and provocative statements about what will be most important for leaders in the years ahead. They are intended to encourage you to consider what leadership skills you will need to succeed—given the external future forces of the next decade. As a forecaster, I can provide you with foresight, but it is up to you to come up with the insight and act upon it.

Notice the positive definition of VUCA inside the Foresight to

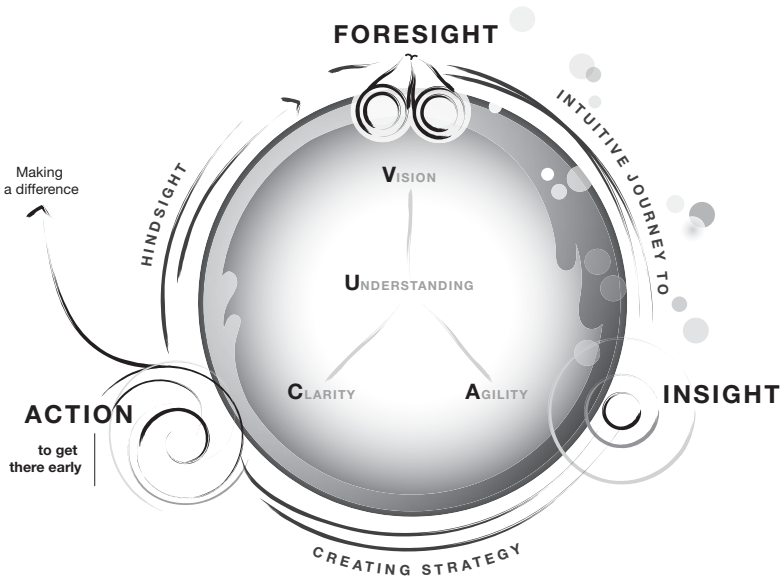


FIGURE 3. The Foresight → Insight → Action Cycle. See *Get There Early* for more detail. Source: IFTF, 2007. SR# 1038.

Insight to Action Cycle. Leaders in the future will need to have Vision, Understanding, Clarity, and Agility. The negative VUCA can be turned around with effective leadership that follows these principles:

- Volatility yields to vision.
- Uncertainty yields to understanding.
- Complexity yields to clarity.
- Ambiguity yields to agility.

The VUCA world of the future will be formidable and loaded with opportunities. The biggest danger is not being prepared—and you can control that by preparing yourself and your organization. The best way to be prepared is to look ten years ahead.

## Ten Years Ahead: The Magic Time Frame

Making the future begins with understanding the future. Foresight can help you do that, even though the future is unpredictable. At Institute for the Future, we've found that the sweet spot for forecast-

ing is about ten years ahead. Ten years is far enough in the future to be beyond the planning horizon of most organizations, yet it is not so far out that it seems unbelievable or irrelevant. Ten years is also far enough ahead to see clear patterns that are not visible in the noise of the present. Foresight helps you discern what is important in the long run. If you understand the external future forces, you can figure out the leadership skills that are likely to be needed.

Starting from the Institute for the Future's Ten-Year Forecasts, this book looks ahead to explore the leadership skills necessary to succeed in the future. Inside this book jacket is a map which summarizes our Ten-Year Forecast of external future forces. This introduction gives a quick tour of its key elements.

Each chapter is organized around a future leadership skill, beginning with basic orientation and grounding. Then links are made between the IFTF Ten-Year Forecast and that particular skill. Each of the ten future leadership skills corresponds to an iconic image intended to evoke a particular feeling, drawn by artist and documentary filmmaker Anthony Weeks who has worked with me for years to visualize the futures that we discuss in workshops.

When you take off the book jacket, notice the look and feel of the map. It is an organic matrix—a kind of conundrum itself—which aptly represents the forecast for the next ten years in that we are moving into a world in which changes will unfold organically and also threaten nature. Engineering and mechanical thinking drove the last economic era; the next era will be driven by biology and the life sciences. On the map, the language is linked to nature in underlying metaphors and background graphics.

The book jacket forecast map summarizes these external future forces that will be important for future leaders to consider. To the right of the map, you see the ten leadership abilities that are most important for this future world. The ten chapters that follow describe each of those skills, along with the abilities, competencies, and traits that will fit together to create a new leadership profile for the future. The book concludes with personal guidelines for future leaders, with a focus on what you can do to be more prepared for the future you intend to make.

At the center of the forecast for the next decade is the gap between

rich and poor and the cascading injustices that result from extreme imbalances of wealth. For much of the developing world, hunger, safety, and subsistence are still daily challenges. Meanwhile, the much smaller so-called developed world population consumes proportionately many more resources. In the future, a variety of new media will make the rich/poor gap even more visible than it is today—from both sides. The world has always had a rich/poor gap, but it is likely to get larger and it certainly will become more visible and have impacts on all portions of the map.

The columns on the map are the most important drivers, or future forces, that leaders should consider:

**Diasporas: New Emerging Economies.** “Diaspora” is a very old word that refers to the Jews who were separated from the Promised Land. These were people linked to a specific land but were also a people “set apart.” The concept of a diaspora is particularly familiar to people who are Jewish or African American, or anyone who has studied the Old Testament. Diaspora is also a very useful concept for understanding the future.

Future diasporas will be different. They will be less linked to geography, but more linked virtually. Some will still retain deep historical traditions, but others will be more modern. Many kinds of diasporas will be important, including these:

- Climate change diasporas, displaced by weather disruptions and linked by a common tragedy, like the Hurricane Katrina diaspora.
- Rural-to-urban diasporas will be common over the next decade, as we shift from being a primarily rural planet to a primarily urban one. Rural-to-urban diasporas are likely to be most dramatic in China, India, and Africa. Many, including children, will be left behind.
- Cultural diasporas, such as offshore Chinese or Indians in the technology industry in Silicon Valley and other parts of the world. Of course, both China and India are so large that there are many different subsets of these diasporas.

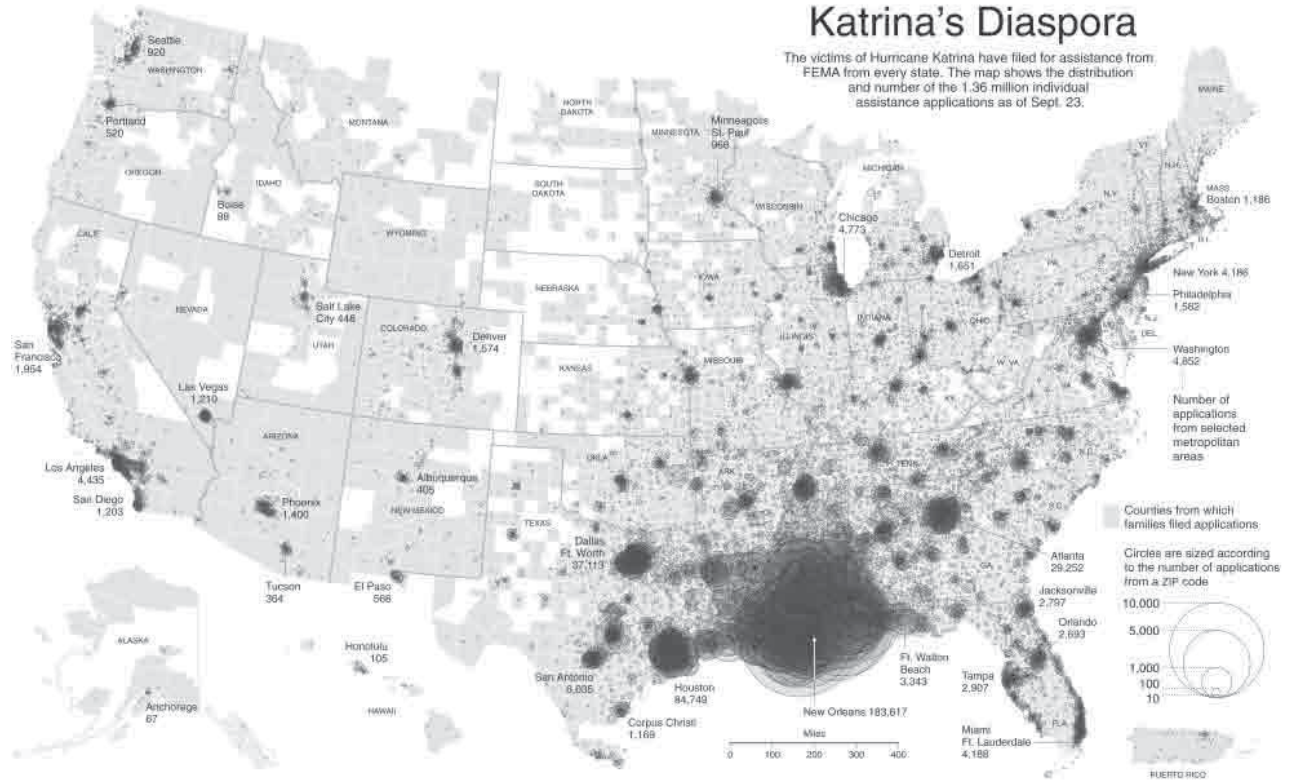


FIGURE 4. This map shows the distribution of applications for assistance filed by displaced victims of Hurricane Katrina.<sup>2</sup>  
 Source: Used with permission of *New York Times* Graphics, © 2005.

- Corporate diasporas, such as alumni of McKinsey, IBM, or Apple. Companies that abide by the maxim “we’re in it for the long run” include both current and former employees—as well as close friends of the family, suppliers, contractors, and others.
- Bio-diasporas, which share biological traits, health conditions, or biometric markers in common. People with similar disease states, for example, form very strong support groups and are very effective users of the Internet, through sites such as [www.patientslikeme.com](http://www.patientslikeme.com).
- Financial diasporas, such as the Islamic financial communities that are creating new kinds of mortgages, bonds, insurance, and even currencies within the belief system or theology of the Islamic faith. Islamic finance is not new, but the Western world knew little about it until recently.

Diasporas can be good, but they can also be evil. Think of them as networks of people who may be physically separated but are bound tightly by shared values. In our forecasts at IFTF, we consider diasporas as more important than traditional governmental or regional links in emerging economies. Indeed, in many parts of the developing world, diasporas are thoroughly integrated into both government and business practices. Within diasporas, innovations and ideas spread much more quickly because of common beliefs and high trust.

Diasporas often have a strong insider/outsider dynamic; members in one have a common bond. It can take longer for people on the outside—sometimes much longer—to build trust and a working relationship with diaspora members. Leaders must understand diasporas and be able to engage with them. In fact, most leaders themselves belong to at least one. What diasporas define who you are? Which ones can you easily identify? Which ones could amplify your leadership and which ones threaten you or your vision of the future?

**Civil Society: What Will We Choose to Do Together?**<sup>3</sup> There are many different ways to mix business, government, nonprofit, and community interests all over the globe. On my first morning in China I vividly remember a newspaper article that referred casually to the “socialist



market economy.” That phrase popped off the page as I read it. Like many Americans, I had thought of economies as being either socialist *or* market-driven. In China, the economy is both, mixing government and markets in ways that bewilder outsiders and sometimes even the Chinese people. What is the role of government? What is the role of markets? What roles do communities and individual people play?

Governments, markets, and people will interact in complex ways in the future—and many of those interactions will be through electronic connectivity. Networked connectivity can help to pull things together, and there will be many new opportunities to improve our civic infrastructure and our ability to cooperate. We are more connected than ever, but that does not mean we are automatically cohesive. The potential of connectivity, however, is extremely powerful. The more connected we are, the better we can work together—for broader benefit. The more connected we are, the more quickly disruptions can spread—as they did with global credit markets in 2008. Leaders in the future will have new opportunities to engage with the society around them using new infrastructures for cooperation. Competition and cooperation will need to coexist in ways that will vary from region to region, country to country, and even at times from city to city.

Corporations will play a major role in shaping the future. Although separate from government, there will be many ways in which they will need to work together. Corporations are often more technologically advanced and faster to change than governments. Still, we need at least some common infrastructure and shared services to succeed. Deciding what we choose to do together and what we leave to the marketplace will be key decisions for leaders in the future.

**Food: The Flashpoint for Rich/Poor Conflict.** Food is basic to life and the next decade will be a critical period for food production and distribution. Global climate change is an underlying shift with deep implications, but there are many more interacting variables to consider. Food is not just functional; it is deeply cultural. Over the next decade, food will be scarce in many parts of the world, and food safety will be a continuing challenge for all. Without healthy food, little else matters.

Distribution of food will be just as important as producing it. People are spread out and food must get to them. Where food comes from is becoming an important part of how it is valued. Food from some places may not be safe, or at least may not be perceived as safe. Food—and specifically the shortage of food—will be a flashpoint for conflicts, which will often be between rich and poor.

**Ecosystems: Navigation of Life.** The lack of response to global climate change aptly demonstrates the short-sightedness of our government and businesses that do not take into account the larger context of life. In the world of today, profit is measured by narrow economic criteria like quarterly returns. Profitability over time will take place in the larger context of sustainability. Global climate change is a wake-up call: it is important to think not only years ahead but generations ahead. Natural ecosystems are both robust and fragile.

Global climate change will shadow the next decade and beyond. Most climate models suggest that the majority of serious negative effects will happen beyond ten years from now, but the decisions we make in the next decade will have long-term impacts. Ten years may seem long to most companies and government agencies, but it is a short time in the context of climate cycles. Leaders will need to think about these larger ecosystem issues as an important part of everyday decisions. Humans are having profound impacts on the earth. Leaders in the next decade will not just be leading organizations; they will be leading life. Leaders have a chance to make the world at least a bit more sustainable.

**Amplified Individuals: Extending the Human Body.** In the next decade, there is real potential for many people to be better than normal, healthier, higher-performing, and live longer than ever before. Of course, there is also a health gap that mirrors the rich/poor gap. While many will struggle to live at all, others will be healthier than normal and a few may enjoy much longer life spans. Minds, bodies, and networks will all be connected in novel and powerful ways to create extended individuals who are amplified in ways we can only begin to imagine. Leaders will control new tools of human amplifica-

tion, but individuals who may not have the same agenda or values will challenge them.

The Baby Boom generation will lead the way in body extensions as they wrestle with the process of their own aging. This is the generation of people who said when they were young: “Don’t trust anyone over thirty.” As they age, I expect one of their leaders will coin a new generational motto: “Don’t trust anyone under sixty.” The Boomers will want to extend their lives and experiment with life—as they have at each stage as they have aged. The Boomers will have a new medical tool kit with which to experiment.

Amplified individuals will create amplified organizations. Our global connectivity is growing dramatically, which is creating new ways to organize ourselves. Think of a leader not just as an individual but as a node on many different networks. The best leaders are not isolated; they are ravenous networkers with active links all around the world. In the future, economies of scale (in which bigger is almost always better) give way to economies of organization (in which you are what you can organize). Leadership is all about engagement, and networked media provide several ways in which leaders can engage to make better futures. The most connected leaders will be the best leaders.

These external forces will appear in each of the next ten chapters that focus on leadership skills for the future. They provide a context for assessing what skills will be most important. Although the rest of the book focuses on the future, it is important to start with a touch of what history has taught us about leadership already.

## Enduring Leadership Skills

When we do ten-year forecasting at IFTF, we always look back as well as forward. Most things that happen are not really new. Often those things we think of as “new” were tried and failed years ago. At IFTF, we used to say that we look back at least twice as far as we look ahead. Now we feel that going back even further is necessary. I recommend studying the previous thirty to fifty years as part of every ten-year forecasting effort. For a recent forecast on green

health, Rod Falcon and his Health Horizons team at IFTF actually looked two hundred years back as well as ten years ahead. This is the largest time span I have ever seen in a forecast and it was completely appropriate—given the long history of linking nature and health.

Each of the ten future leadership skills has roots in the past. As novelist William Gibson said, “The future is already here—it’s just unevenly distributed.”<sup>74</sup> Some of these skills are visible in today’s leaders; and some of them have been used successfully in the past, but they will be much more important in the future.

When I became president of IFTF in 1996, I began a list of principles to guide me as a leader. I had studied leadership but had not been a leader myself on this scale. Being the president was much tougher than I expected. I realize now that many of the challenges were inside my head. I was frequently frustrated and occasionally downright discouraged. I had physical reactions, such as headaches, almost every afternoon. I had emotional reactions, such as unexpected tears. These symptoms convinced me that I needed to make changes in how I was living and how I was leading. This eight-year immersion experience taught me that being a leader is much harder than studying leadership. Being president during a very difficult time gave me first-hand experience that I can now share in this book. I’ve also been influenced greatly by the wide range of leaders with whom I have worked.

This book focuses on the new leadership, but not everything about leaders in the future will be new. Some leadership traits will continue to be important, although in updated forms. Here are some enduring leadership skills that I admire greatly:

**Physical and Mental Discipline: The ability to inspire people in a gripping way with physical and spiritual energy.** In my experience, physical exercise and healthy living are vital to leadership. More information is available to those who want to lead a healthy lifestyle, but it takes personal discipline as well. Leaders must develop physical and emotional energies that work for them as individuals as well as inspire those around them. Leaders need to be coaches for others, but also need to be their own guides. For example, Marge Kiley coaches gymnastics, a sport in which a mistake could mean death. I asked her

what mental discipline she teaches. She said it depends: If the youngster is a risk taker, she teaches the discipline of watching themselves while performing so they can see how difficult and dangerous moves can be. On the other hand, with students who are overly cautious, she tells them to concentrate on what it feels like to perform from inside their heads. Essentially, this is the ancient tension between leading and watching yourself lead.

**Active Attention: The ability to filter out noise and distraction, combined with a strong ability to stay centered—even when overwhelmed with stimuli.** No leader could absorb everything, even in the old days before the Internet. All leaders must filter and learn how to see patterns as they emerge. The difficulty in screening dramatically increases as data sources multiply. Generational differences will become more apparent in the future, especially as young “digital natives” who learned to use media at an early age and have better skills for “continuous partial attention”<sup>5</sup> move into leadership roles. Filtering has always been important for leaders, but in the data-everywhere world of tomorrow it will be extremely challenging.

**Readiness Discipline: The abilities to anticipate, prepare, and practice.** You cannot control the VUCA world, but you can be more or less ready for unexpected events. Leadership has always benefitted from preparedness, but the demand for it will be much greater in a world of increasing uncertainty. Surprises are inevitable. Leaders can, however, consider a wide range of alternative scenarios and practice how they might respond. Readiness discipline will be explored in more detail in chapter 4 on Immersive Learning Ability. Leaders cannot predict but they can prepare.

**Urgent Patience: Ability to judge when to add new challenges and when to counsel steady persistence.** Bill Walsh, who coached the San Francisco 49ers when they were a great team, saw this as a key leadership trait: to discern when people are overloaded (and be patient with them in those times) and when they are overly confident (and press them with appropriate urgency). Leaders can be both urgent and patient, depending on what is needed at the time. The role of

a leader, he said, was to listen for and apply this strategy he called “urgent patience.”

**Story Telling and Listening: Ability to discover and tell engaging stories that help people form a particular vision of the future.** Great leaders are usually great storytellers. While problems can be summarized in a formula or an algorithm, it takes a story to understand a dilemma. The future will be loaded with dilemmas, so it will take lots of stories to help make sense out of them. Many of these will be mysteries and some will be thrillers and they will be told by leaders through a dizzying array of media.

**Humble Strength: Ability to act with courage and clear intent, in an authentic, engaging, and self-effacing way.** This leadership skill will be more difficult to achieve in a fragmented multimedia world. Thinking about the long-term future certainly breeds humility. This enduring strength will be explored in more detail in chapter 7 on Quiet Transparency.

**Synchronicity: Ability to make meaning from new stimuli by finding connections and patterns that are not obvious to others.** Leaders need to see patterns before others see them. The ability to see links between personal experience and future possibilities will be essential. Great leaders have always had this ability, but in the future the patterns are likely to be more difficult to discern.

In addition to these enduring abilities, leaders will need to change in dramatic ways, which in turn will create a demand for new leadership skills. *Leaders Make the Future* is structured around ten new leadership skills necessary to respond to external future forces. I struggled with what to call these characteristics of leadership. Skills? Competencies? Abilities? Traits? Styles? I decided to call them skills—since I am convinced that they can be learned—and I want to emphasize those areas where leaders can improve themselves.

All leaders have innate personal skills that they should leverage, but there is much more for all of us to learn. This book is about changes in how leaders will need to lead. Leaders will make the future, but not by themselves and not without new skills.



1

# Maker Instinct

Ability to exploit your inner drive to build and grow things,  
as well as connect with others in the making.

EVERYONE HAS SOME MAKER INSTINCT. The challenge is to turn the natural urge to create into a leadership skill, to synchronize the maker instincts of leaders with those of others. Many people don't realize their own maker instinct and potential. It must be recognized, valued, and nurtured if it is to become a leadership skill for the future. Beyond do-it-yourself, we need to nurture *do-it-ourselves* leadership. The maker instinct will be amplified by connectivity.

When I go into a new company, I like to ask leaders about their hobbies. If they have complex, exotic, time-consuming hobbies, it may be that their maker instinct is not being fully expressed at work. Perhaps the organization is operating at a routine level that does not



FIGURE 6. Chef Homaro Cantu.<sup>5</sup> *Source:* Used with permission of Cantu Designs.

a workshop we conducted in London—they were tasty, but not an alternative to lunch. He also showed that with the right kind of printer one could receive sushi through the Internet. The next generation of makers will have a new tool set available, resulting in creations that at this point are hard to imagine. Desktop manufacturing will allow us to “print” food, 3-D objects, and other products we have yet to conceive. If you can print sushi and send it through the Internet, what will makers make next?

## A Leader with Strong Maker Instinct

Founding publisher of *MAKE: Magazine* and creator of the Maker Faire, Dale Dougherty is a leader of makers with a very strong maker instinct himself. Through the Maker Faire he is giving everyone



demand deep engagement and does not tap the maker instinct of its leaders.

I remember meeting one executive who rebuilt old steam engines in his spare time. Building steam engines is a great hobby, but this top executive was overdosing: he had fields packed with steam engines. As I learned more about his company and his role, I realized that the corporate culture did not tap into the maker instinct. Rather, the leaders in that company tended to do what they had to do at work, then go home to do what they wanted to do. They had created a culture of discipline focused on good management, but they were not tapping the maker instinct and channeling it into leadership.

I'm certainly not against hobbies, but I am against leadership roles that focus on bottom line results, telling people what to do, and following the rules, rather than requiring leaders to get personally involved in *how* things work and how they could be improved. For example, some people like to arrive, give a speech, and leave. They have no interest in the group process that was unfolding before they arrived and will continue after they depart. On the other hand, makers *like* to see how ideas develop and unfold—and they like to be able to influence how that happens. Leaders need to get involved in the messiness of group process to understand the context for decision making and the underlying relationships among the people working together. The speak-and-run approach may be considered leadership on the speaking circuit, but that's not group leadership. Leaders have the maker (and remaker) instinct to engage in the process, to figure out how things work and what needs to change.

The maker instinct is basic and precedes all other skills that will be needed for future leadership. The roots of the maker instinct run deep. Go to any beach in the world and you see kids digging in the sand. Why do they dig holes and build sand castles? These young makers are honing their maker instinct. My guess is that most successful leaders were very ambitious excavators when they were kids. Leaders are makers by definition. They make organizations, with more or less involvement by others.

The leaders of the future will be less controlling, since there will

be fewer things they can control. They will also be more engaged with others, since connectivity will be required to make the future. Everyone is part of a network. Leaders are nodes, and the best ones are hubs that form, nurture, and grow networks that stretch far beyond the individual leader.

My dad was a maker. To relax, he would go to the basement by himself, where he always had several projects in progress. With great care, he read *Popular Mechanics*, a magazine that aroused the maker instinct in readers every month with inspiring projects like gliders you could pull behind a car. Dad had a Shopsmith woodworking machine—a noisy, whirring contraption that loomed near our furnace. I learned as a child that this awe-inspiring machine was dangerous and that I should stay away unless I myself learned how to become a maker. It was not easy to learn woodworking skills, and I never became nearly as good as my dad, but I still have a serving tray that I made at a Cub Scout meeting using discarded records from a local radio station and imprinting circular patterns on them with a spinning wire brush. My dad made it easy for me to satisfy my early urge to make, giving me lots of advice while he watched over me so I didn't get hurt. The Shopsmith was frighteningly mechanical, but it was also a wonder. Like the maker instinct itself, it was both attractive and imposing.

My dad was a solo maker, working alone in our basement. In the future, solo makers will still be around, but networks of makers will be much more powerful. The maker instinct is solitary, but leaders will need to connect their maker energy to others in order to fuel change. Makers have always been interested in sharing what they make with others and the new media tools will facilitate this urge.

My mom had the maker instinct as well. She loved to sew and then to knit. She made clothes for my sister and me, though I didn't appreciate them until I got older. At our church, my mom and grandmother would go to sewing circles where people would talk as they sewed or knitted. Late in her life, my grandmother became part of the Leisure League at church, a group that made clothing for people in developing countries. She loved the making, but the fact that others

valued her products and found them useful gave them meaning. That work became a big part of my grandmother's identity. Everyone has a maker instinct, but it can play out in many different ways with different people. The maker instinct is both male and female and is found across cultures as well.

*MAKE: Magazine* is a modern reinvention of *Popular Mechanics* and the other maker magazines of that era. Its founder, Dale Dougherty, is well aware of the historical roots of his magazine and what he refers to as the "maker mindset." In honor of those roots, *MAKE* is exactly the same size in its paper version as *Popular Mechanics*, *Popular Science*, and the other do-it-yourself magazines that were popular thirty years ago. Makers tend to respect their roots, and many makers have deep roots.

Maker instinct is a kind of DNA imprint that we all carry in our own ways. *MAKE: Magazine* and the Maker Faire are profound signals that indicate a very important direction for the future. The maker instinct is a drive away from the ordinary—including ordinary leadership.

## Maker Instinct Defined

The maker instinct is an inner drive to build and grow things. Leaders with maker instinct have a constant desire to improve the organizations around them. Both managers and leaders ask how things work, but leaders have an urge to make them work *better*.

For example, when I was a Little League Baseball manager for my son's team, my maker instinct urged me to juggle the lineup to try out different batting orders for maximum effect. When I was president of Institute for the Future, I was fascinated by how organizational changes might better achieve our mission. The popular Kevin Costner movie *Field of Dreams* is a romantic fantasy around a maker theme: "If you build it, they will come." He made a baseball field in the middle of an Iowa cornfield and a miracle happened. True, the Costner character was a bit idealistic and even unrealistic, but he also had an overwhelming maker urge that just had to be expressed. He was right to follow that urge.

Makers like to be hands-on and see things from the inside. The *MAKE: Magazine* motto is “if you can’t open it, you don’t own it.” Open means transparent and accessible, but it also means able to be altered, customized, or personalized. Think about how that maxim has major implications for today’s manufacturers, many of whom do not want you to open their products and will void your warranty if you do. Of course, the specifics of how consumers are allowed to “open” a product are critical. The Toyota Scion, for example, is designed to be customized, but that doesn’t mean that everything about the Scion is open. Manufacturers must decide what they can “open,” while still owning what they can own that gives them advantage. This is not an either/or choice. The clear direction of change, however, is toward being more open and more willing to let consumers engage with and modify the products they buy.

Leaders will grow, re-grow, and reimagine their own organizations again and again. The maker instinct fuels that growth. Leaders will make the future in the context of the external future forces of the next decade.

## **Maker Instinct Meets the Future**

In the future, personal empowerment will mean that customization and personalization will be desired and often demanded. Even global products will need to feel local, or at least not feel foreign. Grassroots economic systems like eBay will make bottom-up financial transactions possible. Smart networking will create results that will not be predicted but will be profound.

### **DIASPORAS OF MAKERS WILL GROW**

At the 2008 Maker Faire, IFTF gave visitors inexpensive video recorders and asked them to go out and gather stories from the makers. They brought back accounts of the maker instinct at work. For example, a twenty-foot-high electric giraffe named Russell created quite a stir rolling around the fair. Russell cost its maker \$20,000 plus lots of time to build it. Colorful cupcakes, each one accommodating a



FIGURE 5. Poster for Maker Faire.<sup>1</sup> *Source:* Used with permission of O'Reilly Media, Inc.

single rider, rolled around the grounds in wandering paths. The two liquid sculptors dropped Mentos candies into Diet Coke bottles to create patterns of spray.

Computer giant and master maker Steve Wozniak spoke at the second Maker Faire and commented that the spirit of Maker Faire reminded him of the early days of the personal computer. Many of today's makers are out to create new products or services, but others are just out to have a good time. Makers are coming together in new ways that are likely to have profound impacts on the future.

Maker communities, as showcased at the Maker Faire, are often diasporas linked by strong shared values and sometimes a common place where its members feel at home. Many of these communities are bound together by ideals about how their work should be practiced, or where their craft was born. Maker diasporas believe in what they are making and how it is made. They often want to spread their word and share their truth. The annual Maker Faire is a vibrant gathering of makers shouting out to a wide array of other makers and celebrants of all ages. Although showing off is part of it, far more is going on.

There is often a strong bond among makers that stretches back in time and forward. Leaders share stories that keep maker traditions

alive and draw in new members. Makers have the skills to make the world a better place, but they often don't know it. They just build what gives them pleasure, but leaders will know how to tap that maker energy as a force for change.

Shared energy is what diasporas are all about. The maker instinct will feed right into diasporic energy which will be amplified by networked media. As these new groundswells of grassroots innovation disrupt traditional patterns, however, organizations are likely to be confused about what to do. For example, both Mentos and Coca-Cola threatened to sue the artists whom they claimed were misusing their products by dropping Mentos into Diet Coke and creating massive displays of fizz. A short while later, both companies realized that lawsuits were unlikely to be successful and were likely to be unpopular with consumers. With some consternation but great consumer insight, both companies decided to sponsor the artists. Makers learn from those who use their products and services, and they learn even more when they encourage people to use them in ways that the manufacturer never imagined.

Solo makers like my dad in his basement are evolving into networked artisans through gatherings like the Maker Faire. Makers love to show and tell. The website Instructables.com allows makers to meet virtually and share projects. The banner on the Instructables home page even refers to itself as "The World's Largest Show and Tell."<sup>2</sup> Maker messages will circulate very rapidly within and among maker diasporas. Products will be turned into stories and the stories will spread like viruses on maker blogs and every other imaginable medium.

## **MAKERS WILL CREATE SHARED SPACES**

One leadership dilemma is how to intelligently give things away without putting your own organization at a disadvantage. Remember: your competitors don't necessarily need to lose in order for you to win. Open source logic teaches that it can be good to give away ideas if there is a good chance that you will get back even better ideas in return. This logic is counterintuitive for many leaders, but those

who tap into the maker instinct understand this concept much more readily than those whose maker instincts were repressed in large corporations. Makers easily access the wisdom they have learned from their hobbies to help them with the demands of their jobs.

At the 2008 Maker Faire, for example, Jimmy Smith from Team FredNet talked about the Google Lunar X Prize, which was awarded to the team that could land a rover on the surface of the moon. FredNet used only off-the-shelf products. They shared their activities with everyone, including their competitors. Thus a new zone was created within which competitors could pool their resources in order to achieve the ultra-ambitious goal of landing a rover on the moon. This logic challenges traditional assumptions about competition. You divulge information to competitors? Yes, in pursuit of the prize there is sharing, but competition continues beyond that base of information.

Corporations used to think of research and development (R&D) as something that happens inside big laboratories and gradually gets released to the people who use the products. In the future, much of the innovation will come from backyards, basements, and kitchens of those guided by their own maker instinct—in both developed and (especially) developing worlds. At the edges of traditional R&D—and even far beyond the edges—corporate-mandated methods are giving way to maker-inspired grassroots innovation. Central corporate R&D will still exist, but it will be more open and on a smaller scale. Threadless, for example, is a T-shirt maker that holds a design competition in which consumers compete and vote on the designs. Those that get the highest ratings get manufactured. The Threadless model may be extreme, but it suggests the direction of change. End consumers can be the designers—or at least the inspiration—for future products.

## **MAKERS AND THE TOOLS OF WARFARE**

When I started out as a forecaster in the early 1970s, many leading-edge information technologies were developed within the Advanced Research Projects Agency (ARPA), which created the ARPAnet, the precursor to the Internet. Gradually, innovations that were classified

as military secrets made their way to public use. In just the thirty-five-year period of my career, this pattern has reversed. Now, the leading-edge tools are coming from consumer electronics and video gaming. Even the tools of war are coming from everyday products adapted with a mix of maker ingenuity and anger. The most sophisticated roadside bombs used in insurgent warfare, for example, come from consumer electronic and cell phone technologies—not from sophisticated big-technology innovation developed inside massive defense establishments. Insurgent makers are everywhere—on the battlefield and behind the scenes. Gradually, these innovations make their way back to the military industrial complex.

Innovation will have both positive and negative results. In a world of asymmetric warfare, innovation happens from the bottom up. Enemies (and potential collaborators) can come together any place and any time. Terrorist networks tend to be organizationally sophisticated, and they know how to make their own weapons. The maker instinct is often very strong within dangerous mobs, and it is likely to grow in the future. Access to tools has improved for the bad guys as well as for the good guys, and sometimes it will be difficult to tell which is which. Makers, alas, can be thieves or vandals, demonstrating the negative side—even as the positive energy of events like the Maker Faire continues to grow.

## MAKERS IN THE MARKETPLACE

Global climate change and an ecosystem that is clearly at risk will continue to be concerns in the next decade. Meanwhile, a new generation of makers is coming of age. Stimulated by the first round of ecological thinking in the late '60s and early '70s, schools provided students with a strong dose of environmental education. These next generation makers are more likely to be eco-motivated and guided by a new mantra to reduce, reuse, and *remake*. Remaking will be even more important for this new generation of eco-makers than making. Their exchanges will grow into marketplaces for goods and services.

Etsy.com, for example, is an online marketplace for makers to buy and sell. Swapthing.com is a sort of eBay for people who want to trade



rather than buy. Both Etsy and Swapthing are indicative of this new generation of makers who want to reuse more and consume less. They salvage what they can and redesign existing products for new applications. Green aspirations will translate into a bottom-up economy of makers who are skeptical about big corporations and planned obsolescence. Maker gatherings already tend to be green, and they are likely to get much greener in the future. People want green energy, and corporations are made of people. These makers are likely to seed shifts within large corporations as well as within communities. They will swap, build, and rebuild.

### **MAKERS IN THE FOOD WEB**

Food has always been an interesting medium for expressing the maker instinct. Kitchens are designed for makers, with as much elegance and creativity as the cook (aka maker) would like. In the always-busy world of the future, the desire to prepare meals will be tempered by time. Although people want to be involved in making food for themselves and their families, they won't have hours to invest in cooking. Expect food retailers to respond with approaches to cooking that will allow people to participate in meal preparation, thus providing the psychological satisfaction of making their own food, without requiring the time to do so from scratch.

Founded by some of the team from *Wired* magazine, TCHO is a high-tech chocolate company in San Francisco, based on the idea of chocolate as a creative medium, with many different customization options. Customers are involved in creating their own chocolate without having to make it themselves. Consider how the maker instinct plays out at TCHO, based on how they describe themselves in these selections from their home page. Makers are often obsessed, very obsessed. Their customers can benefit from that obsession, as is clear from their principles:

TCHO is where technology meets chocolate; where Silicon Valley start-up meets San Francisco food culture.

TCHO is an innovative method for you to discover the chocolate you like best.

TCHO is scrappy and high-tech—recycling and refurbishing legacy chocolate equipment and mating it with the latest process control, information, and communications systems.

TCHO's social mission is the next step beyond Fair Trade—helping farmers by transferring knowledge of how to grow and ferment better beans so they can escape commodity production to become premium producers.

TCHO encourages our customers to help us develop our products, as we launch limited-run, “beta editions” available on our website.

TCHO creates new rituals for sharing chocolate.<sup>3</sup>

These TCHO principles reflect an emerging style of maker culture as it transforms into a sophisticated business. Notice the mix of maker instinct, leadership style, and professional expression. That's leadership with a maker attitude. Expect more efforts like this that allow the maker instinct to be played out in the experience of food.

## **MAKERS MEET LIGHTWEIGHT MANUFACTURING**

Lightweight manufacturing will magnify the importance of makers of the future. Within the next ten years, desktop manufacturing will allow us to “print” other products similar to the way we print ink on paper now. For example, Chicago chef Homaro Cantu offers edible menus so that customers can taste dishes before ordering them. Using special ink-jet printing techniques, Cantu blends his own mixtures of fruits, meats, fish, and vegetables in a form that can be printed on paper and eaten.

“You can make an ink-jet printer do just about anything,” says Cantu. He hopes that his idea may find its way into popular media. “Just imagine going through a magazine and looking at an ad for pizza. You wonder what it tastes like, so you rip a page out and eat it,” says the chef who is working at perfecting the flavors and has applied for a patent on the technique.<sup>4</sup>

Homaro Cantu is an edgy hybrid maker with both information technology and cooking skills. Recently he brought edible menus to

the chance to meet makers. He calls it a “world’s fair by and for the people. It’s not like institutions. It’s not big companies bringing stuff. It’s really individuals just saying, ‘here’s what *I* do!’”<sup>6</sup> Big companies can still play a role, however. For example, they often sponsor areas of the fair where makers show off what they have done with standard products. “Hacking” used to be a negative term, but the makers are recasting it. Manufacturers create products, but makers can add new life to them and even repurpose them for very different applications, if manufacturers are smart enough to listen and learn from this kind of grassroots innovation. Makers will reimagine products even if the manufacturers resist.

Inspired by the Maker Faire, TechShop is a shared space where makers can use advanced tools, learn from each other, and collaborate on new creations. Physical places like TechShop will combine with virtual resources such as online tool sharing to produce a powerful new mix of media for making.

Applying his maker instinct, his leadership instinct, and his instinct to teach, Dougherty has established the remarkable event now known as the Maker Faire. I expect more of these fairs and similar events as the maker instinct spreads do-it-ourselves wisdom throughout our business and social cultures.

## Maker Instinct Summary

The maker instinct is part job and part hobby. Leaders with the maker instinct are able to approach their leadership with the commitment of a job and the energy of a hobby. The leaders of the future will kindle this maker energy in themselves and in others. They will make the future and connect with others in the making. Makers don’t always know the answer, but they’re working on it.

In times of great uncertainty, the maker instinct is what separates the leaders from the powerless. When leaders feel overwhelmed, they can become passive. When things are chaotic, makers will view the stir of uncertainty as unfrozen opportunities to start making something new. It is much better to make something than it is to sit back and wring your hands.

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