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What if Your Mirror Could Speak?

The Mirror. The object that “sees” you every day—revealing every imperfection, every change in your skin tone, every bump. If you could ask your mirror anything, what would it be? What if the smart mirror of the future could diagnose health problems and keep you up on the latest news?

Imagination is about exploring answers to the question “What if...?” What if every person, place, and object could speak to one another? What would be the subject of their conversations? What if the capacity for transformation was present in each of us? Are you ready for the answers? If so, read on...

How Did You Get Here?

At dawn on October 12, 1492, a fleet of three ships—the Niña, the Pinta, and the Santa María—reached land for the first time since leaving Spain two months earlier. It was an island in the Bahamas, close to San Salvador, and the people who greeted Columbus—the Taino—called it Guanahani. By all accounts, the Taino lived peacefully—farming, fishing, and trading with the people on nearby islands. To sustain local trade and community, the Taino shared a common language throughout the islands. Their villages were led by the *cacique*, the chief, and advised by the *bohique*, the village shaman.

When Columbus and his men landed, the Taino greeted them with gifts, food, and drink. They had never encountered white men before—fully clothed, bearded, and carrying the grandiose fanfare of the Spanish conquistadors. The two groups managed to establish a common ground for communication, but accounts mention one detail that perplexed the Taino.

“How did you get here?” they asked.

“Well, we traveled on those three big boats that you can see over there,” the Spanish men answered.

“What boats do you mean? We can see no boats!”

While their culture was richly developed and articulated, the Taino had no frame of reference for boats of the style, size, and purpose that the Spanish used. The Taino built boats for trade and local travel, but were not competing for economic dominance or trying to establish colonial control over trade routes and territory. They were initially unable to “see” the Spanish ships because they simply had no relevance to what the Taino were accustomed to, and thus no meaning.

“The trickster was asking the Taino to “see” with their minds in order to be able to see with their eyes. He knew that imagination creates a space for meaning and possibility; one cannot see what one cannot imagine.”

The Taino *bohique*—the trickster shaman—contemplated the boats and the Spanish, and said to the villagers, “Close your eyes and I will describe the boats to you.” He created a space in their imaginations for the possibility of a boat that big and what it meant. As a medium into hidden possibility, he was asking the Taino to “see” with their minds in order to be able to see with their eyes. He knew that imagination creates a space for meaning and possibility; one cannot see what one cannot imagine.

The landing of Columbus. →

The Niña, the Pinta, and the Santa María were a new variable in the Taino's environment. But they were unidentifiable "signals," meaningless until the trickster established a space for belief, where that meaning could be constructed and the impact of that possibility considered.

Like the Taino, organizations and people around the world are currently struggling to see and interpret what is in front of them. A fundamental transformation is occurring in the way we create, value, and exchange knowledge. This is fueled, in part, by our changing relationships with technology, as well as our rapidly shifting social values and economies. Our technology is becoming smaller, faster, and smarter, and its integration will soon be ubiquitous—determining different ways of living, learning, communicating, building, and destroying. And each development is rapidly succeeded by something faster or more powerful, receding as quickly as it emerged. As we consumers and designers struggle to keep up with the accelerated pace of change—discarding fax machines as quickly as we adopt Bluetooth—we also struggle with the implications of our actions.

TECHNOLOGY

the sum of a society's or culture's practical knowledge, especially with reference to its material culture.

We know that these implications will affect everyone. What is more relevant, and more challenging to articulate, is *how*. What kinds of ideas will we choose to inform our current choices and future decisions, such as which technologies we use and which relationships we foster?

The terms of engagement are also changing. People no longer passively accept a new technology, idea, product, or service as it was originally intended. Rather, we increasingly encourage and empower each other to participate in the creation and exchange of knowledge, experience, skill, and ideas—our social capital. As this shift gains momentum around the world, businesses urgently need a new capability to identify the value in this social capital—mapping and extracting the benefit of ideas to billions of people—in order to remain relevant in an evolving social and economic climate.

This book is about imagination and exploring the "What if...?" that could provide those insights.

With more than 20 years of experience as a product development consultant, I have worked with brilliant hardware engineers, savvy marketing people, street-smart buyers for large retail chains, and clever corporate strategists, all uniquely competent in their fields of expertise—and because of that, all at times uniquely unable to see behavior, expectations,

and responses to new technologies as components of their work. As a result, I have seen countless inventions shelved and many opportunities missed. This book is an attempt to change that.

Back in 1948, in *Mechanization Takes Command*, Swiss architecture critic Sigfried Giedion called for a new type of creativity in order to maximize the promise of mechanization. “To carry through the mechanizing of production,” he wrote, “another class of inventors, another class of doers proved necessary.” One may argue that we have now arrived at similar crossroads.

The platform of technologies currently on the threshold of emergence—artificial intelligence (AI), Radio Frequency Identification (RFID), nanotechnology, biotechnology, to name a few—require a different capability to carry through on their promises because the nature of the promises has changed. Rather than asking, “What can this do?” we must now ask, “What else can this be?”

To be clear, the focus of this new capability is not actually on what technology can do, but on what we can do with it. And in order to stretch to meet our ultimate capabilities, we must have the courage to be what we dream—as individuals, cultures, businesses, and organizations. While our social institutions may restrict and discourage the cultivation of courage or curiosity—as they are too invested in maintaining the status quo—our desire for it as people is real. Our passion for it is real. As further illustrated in the chapters ahead, we only need the tools and the understanding of how to use them. Like the Taino, we need a trickster—a medium into the possibilities of any experience.

MODERN-DAY TRICKSTERS

One of the oldest archetypes in human history is the trickster—the catalytic shape-shifter. The trickster first emerged in the visual record more than 17,000 years ago as a shamanic bird-man in the caves at Lascaux, and has since appeared as a fundamental character in every culture around the world. As animals, deities, spirits, or cultural heroes, tricksters fuel our mythology, inspiring invention and innovation. Whether appearing as a raven on the Pacific coast or a gnome in Lower Saxony, the trickster’s longevity as an archetype lies in its capability for adaptation and transformation, appearing when perceptions and values are outmoded, close-minded, or irrelevant.

“People such as George Lucas, Peter Jackson, and Steven Spielberg are Chief Possibility Officers that we have elected to create extraordinary journeys. When we pay to see their films, we engage in an imaginative contract with them, agreeing to suspend our disbelief for the duration of the experience.”

As the creators and narrators of stories, tricksters extend the possibilities of our imagination, often by rebelling against normal expectations and values to uncover new meaning and knowledge. The Taino *bohique* narrated a new story, with Spanish ships and a distant land, of men who had different values, ambitions, experiences, and knowledge. The role of the trickster is to tear down old frameworks in our imagination and the imagination of our society, and foster frameworks for new possibilities in experience and meaning.

"As the creators and narrators of stories, tricksters extend the possibilities of our imagination, often by rebelling against normal expectations and values to uncover new meaning and knowledge."

The modern-day trickster tends to thrive in the social spaces that can fully support it—particular disciplines like the arts or professional sports. Hollywood is the best known of these, where the modern experts of fantasy and myth make their magic. In this sense, we could say that people such as George Lucas, Peter Jackson, and Steven Spielberg are Chief Possibility Officers that we have elected to create extraordinary journeys. When we pay to see their films, we engage in an imaginative contract with them, agreeing to suspend our disbelief for the duration of the experience—and sometimes beyond it. The contract might read like this:

"This is a story about the lands of Middle Earth, where the Dark Lord Sauron forged the Ring of Power to control all the creatures of Middle Earth. Taken from him in an epic battle, The Ring fell into the hands of a Hobbit, Bilbo Baggins. Unable to resist his power, Bilbo passes The Ring on to Frodo Baggins, along with the only task available: to destroy the Ring of Power. Frodo begins a dangerous journey through the lands of Middle Earth with a Fellowship that will protect him on his mission to destroy The Ring in the only place it can be destroyed: the fires of Mount Doom."

Once engaged in this contract, we expect both the promise of the story and a compelling delivery. The people who offer this promise have recognized the trickster capability within themselves, nurturing it to its fullest possibility. But they are simply a few of the best known tricksters in our midst. In reality, each one of us has the potential to discover and use the trickster capability of medium into the creation of new and meaningful experiences. We are most inclined to recognize and use this capability when undergoing major changes and transitions in our lives; when things seem most uncertain, we are more likely to open ourselves up to imagining *what might be*. We are tricksters when we allow ourselves to imagine

The trickster, one of the oldest archetypes in human history. →

our possibility. What I propose in the pages that follow is a means to recognize this capability in ourselves and in our organizations, as something that can be cultivated, nurtured, and applied.

FINDING OUR INNER TRICKSTERS

One of my earliest childhood recollections is of my grandmother ironing one day, softly humming a Yiddish song. My sister walked into the room and excitedly announced, “The Russians just sent the first cosmonaut in space. His name is Yuri Gagarin.” Grandmother interrupted her humming and asked, “Is this good for the Jews?”

Grandmother imagined what this event could mean for the Russians and the space race, as well as to her community, her family, and herself. She established the relevant connections that included both the endless prospects for mankind and the intimate implications at her dinner table, or in her neighborhood. The potential of these connections gave meaning to Yuri Gagarin in my grandmother’s eyes.

“To see possibility and create a space where possibility can emerge, we must become tricksters ourselves, engaging in the story that translates the information around us into imaginative potential.”

Meaning is our fuel for being—we are meaning-making machines. Constantly forming schemas and structures around our experiences, we actively construct the ethical values that direct our goals, choices, and behaviors. The choices we make in assigning meaning and value define who we are. Like my grandmother, we ask, “What does this mean to me, to *my* life?”

However, sometimes our vision and capability are clouded by expectations, habits, or fears, and we are unable to comprehend or adapt to what something means. This “new thing” on the horizon is meaningless—we don’t know how to see what it represents, what it could be, how it will affect us, or our friends or families. Like the Taino, we cannot see the boats even though they are right in front of our eyes.

To see possibility and create a space where possibility can emerge, we must become tricksters ourselves, engaging in the story that translates the information around us into imaginative potential. For example, when considering the headline “NASA Takes Google on Journey into Space,” we must ask and be able to answer the questions “Is this good for our organization?” and “What could it mean for us?” Both the questions and their answers are a compass pointing to new possibilities.

How do we rediscover this capability in ourselves—as individuals, organizations, and societies? I propose that imagination is the key. Like the Taino, we must allow for the opportunity of new narrative, as stories create a space where anything could be possible. When our mind is at play, we do not worry about the logical constraints of reality. Through our belief, we all become tricksters narrating the possibility of a person, a place, or a technology, participating and performing as the story unravels.

Why Imagination?

Imagination is often mistakenly considered the same as creativity, but there is an important difference: Imagination suggests ideas resulting from freedom of thought, while creativity suggests some actual aspect of creation, even if only in concept. Likewise, there is a distinction between invention and innovation: The former is the creation of something new; the latter is getting further ahead because of it.

IMAGINATION

1. the ability to form images and ideas in the mind, especially of things never seen or never experienced directly
2. the part of the mind where ideas, thoughts, and images are formed.

The primary challenge of the Industrial Age was an example of the latter: to simply mechanize everything that had once been handcrafted. Electricity was developed, structured, and integrated to speed things up or make them more powerful. Over the course of time, the product archetype changed very slowly—a blender was still a blender, whether it was hand-powered or electric. However, when we began to develop electronic and then digital technologies, and then add them to our electrified objects, the business model shifted toward greater product innovation. Users had greater opportunity to choose between multiple products offering the same function, each product expressing a different aesthetic or demographic. This multiplicity of choice then pressured companies to deliver a competitive advantage.

The skill required to move the mechanical artifact into the electrical age was a learnable one, and so was the skill required to move electronic platforms into digital. This was pure product innovation, with direct cost reduction benefits on the side of the maker, and a modicum of functional or price benefits for the user.

CREATIVITY

1. the quality of being creative
2. the ability to use the imagination to develop new and original ideas or things, especially in an artistic context.

The progression from one technology phase to the next required technical skill, creativity, and capability, but little imagination. Creativity drove the desire for innovation, but imagination was left to advertising agencies, which were charged with branding a product with core values—or, like the Taino trickster before them, creating a space in the user’s imagination for the possibility of something never seen before, and what it meant.

"The status quo requires tactics, while the exploration of possibility requires a strategic vision. Strategic vision is more difficult to measure, and its rewards, however great, may lie beyond the horizon."

In the early 1920s, the question was simple: "What else can we use the electric motor for?" The answers: electric blenders, electric hair dryers, electric irons, electric waffle makers, and so on. This was the model of the innovation company, an entity built on advancing technology as it was being tactically applied to archetypes from the mechanical age. Keeping up with innovations in technology was all that was necessary.

Today a common question asked in research-and-development departments around the world is equally simple: "What else can we use RFID tags for?" However, the parameters of the dilemma are quite different: There are very few archetypes that express the potential capabilities of "smart tags." It isn't just a matter of speeding up an existing function. The answer requires a new model of innovation and a new type of corporation—one that is capable and ready to establish new archetypes.

This new capability requires strategic creativity—the ability to use imagination to develop new and original ideas for a strategic purpose—but most of all it requires the prerequisite for creativity: imagination, both as a capability to be learned and as an attitude to be nourished.

Why imagination?

Because creativity is no longer enough; creativity can only add value. Corporations need imagination to *create value* and answer the questions challenging them:

- ◆ What can we dream about?
- ◆ How far can we dream?
- ◆ How can we make these dreams a reality?

WHAT DRIVES IMAGINATION?

In 1896, Guglielmo Marconi successfully completed the first point-to-point communication of a wireless signal, two kilometers across the Salisbury Plain in England. He followed the next year with a transmission over water to Flat Holm Island, from Lavernock Point in South Wales. These events were enough to ignite the imagination of the press, which erupted with a plethora of prophecies, each more outrageous than the last. Or were they?

In *Imagining Tomorrow: History, Technology, and the American Future*, edited by Joseph Corn, Susan Douglas summed up the predictions made in the early 1900s about the future of radio: “Love and life will be ‘perfected’ as wireless communication will ease loneliness and isolation.” Douglas quotes a *New York Times* prediction that “wireless telegraphy will make a father on the old New England farm and his son in Seattle neighbors.”

Century Magazine also made this stunning prediction in 1901:

“If a person wanted to call to a friend he knew not where, he would call in a very loud electromagnetic voice, heard by him who had the electromagnetic ear, silent to him who had it not. “Where are you?” he would say. A small reply would come “I am at the bottom of a coal mine, or crossing the Andes, or in the middle of the Atlantic.””

This was a vision of technological augmentation before nanotechnology, before the microchip. Before the technological capability was present, the desire emerged.

“In case after case, we find that it is behavior—our latent need to fulfill our life’s goals—that drives us to understand the far-reaching potential of new and otherwise “disruptive” innovations.”

This raises the legitimate question: What comes first? Is it behavior—our desire for a better life triggered by the possibilities of current technology—that in turn triggers the development of new capabilities? Or does technology follow its own path, imposing itself on us and determining our lives?

The press's enthusiastic acceptance and fearless predictions about the new technology suggest that behavior was indeed the key motivator—that a better life with better possibilities was desired. However, business and government did not share this enthusiasm. Maintaining the status quo is a tempting proposition, especially in the face of the unknown. The status quo requires tactics—short-term solutions to an existing problem—while the exploration of possibility requires a strategic vision—the ability to develop long-term ideas and solutions to a something completely new. Strategic vision is more difficult to measure, and its rewards, however great, may lie beyond the horizon.

LATENT NEED

the need to satisfy the latent goals of love, esteem, and self-actualization, which are accessible to the conscious mind but not consciously expressed. We permanently seek the conditions that will allow these needs to be realized.

A vision of the future may be seen as an escape from the problems we face every day, but is also a manifestation of hope and the formation of a new goal that then becomes a need. In case after case, we find that it is behavior—our latent need to fulfill our life's goals—that drives us to imagine and understand the far-reaching potential of new and otherwise "disruptive" innovations. Sometimes this drive is pursued with too much optimistic fervor, but at all times it leads business, government, and other capability-building entities by decades. The alignment of desire, possibility, and capability is rare, but it happens. It happened in 1961.

SHOOTING FOR THE MOON

On May 25, 1961, in a Special Message to the Congress on Urgent National Needs, President John F. Kennedy declared the following ambitious goal: "I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth."

His declaration was an expression of desire, both visionary and competitive, in an era of Cold War politics and Soviet space supremacy. Desire to believe in the possibility of technology was what would drive the technology itself and the United States' capability to deliver on this goal, as well

← *The limits of the tactical response.*

as enthralling the imagination of American culture. If we put the three elements required to meet this challenge—technology, desire, and capability—on a timeline, we would see that in 1961, desire far surpassed both the technology available and the capability of the infrastructure. Yet when President Kennedy defined this task as “urgent,” he created a space for belief in the minds of those around him, and the goal suddenly became a priority need for the U.S. government.

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Where did this desire emanate from? Was it to satisfy what psychologist Abraham Maslow defined as the universal need for love and esteem—to foster belonging and status in the eyes of the public? Or to satisfy what Maslow called the need for safety, to create and maintain security in the context of the geopolitical realities of the 1960s? Both.

In a memo to Vice President Lyndon Johnson the month before, Kennedy had posed this question: “Do we have a chance of beating the Soviets by putting a laboratory in space, or by a trip around the moon, or by a rocket to land on the moon, or by a rocket to go to the moon and back with a man? Is there any other space program which promises dramatic results in which we could win?” And so Kennedy’s desire for esteem—for himself and what he represented—set in motion a goal that resulted in one of the most celebrated technological achievements in American history.

In 1961, the desire was all there was. The technology was sketchy; it had not been tested extensively, and numerous satellite launch failures had occurred at Cape Canaveral, Florida. The necessary governmental capability—NASA—was in its infancy, formed just a few years earlier. The gap between possibility, capability, and desire could not have been greater considering the time limit Kennedy imposed. And yet the goal gave the push, and the technological possibility followed, led by an infrastructure capability that grew through success as well as catastrophic failures.

NASA embraced Kennedy’s challenge. Project Apollo became its consuming passion and, at a cost of \$25.4 billion, one of the most significant expenditures ever undertaken by the American government. On July 20, 1969, it also became one of humanity’s historic achievements. “That’s one small step for man, one giant leap for mankind,” said astronaut Neil

← *Aligning desire, technology, and capability: the timeline of the Project Apollo space program.*

Armstrong as he set foot on the moon. His statement signified the fulfillment of Kennedy's challenge and the temporary alignment of desire, possibility, and capability.

THE IMAGINATION GAP

Everyone takes the limits of his own vision for the limits of the world.

—philosopher Arthur Schopenhauer

In the nearly four decades since Kennedy's challenge was met, the occasions have been rare when such alignments have had a similar scope of influence. Instead, emerging technologies have exposed a widening gap in many organizations, individuals, and cultures—a gap between what we are currently capable of and what is possible. We are adept at understanding our current capabilities, yet we do not often explore "What if...?" and guide our actions toward what we see. We are surrounded by advanced technologies and innovative practices, yet few of us see and pursue them beyond their immediate application.

"The Internet explosion and dot-com bubble, eBay, Amazon, RedHat, Google—what organizations saw their emerging potential? Who sees the possibilities of remix culture, MMORPGs, Web 2.0 technologies, and so on?"

I call this the *imagination gap*. In this book, I will define methods and behaviors for bridging this gap and aligning ourselves with capability and possibility.

IMAGINATION GAP

the gap between current capability and future possibility.

To recognize when the imagination gap exists is difficult, and to recognize, as well as admit, a missed opportunity that stems from it is even more so. However, in an October 2005 memo, Ray Ozzie, Microsoft's former chief technology officer (now chief software architect) did so in reference to his company's failure to lead in the development of Voice over Internet Protocol (VoIP), the technology that enables phone calls via broadband Internet connections.

"While we've led with great capabilities in Messenger & Communicator, it was Skype, not us, who made VoIP broadly popular and created a new category. We have long understood the importance of mobile messaging scenarios and have made significant investment in device software, yet only now are we surpassing the Blackberry."

His was a courageous admission of both the existence of the imagination gap and Microsoft's failure to bridge it. Time and time again, we see this. The Internet explosion and dot-com bubble, eBay, Amazon, RedHat, Google—what other organizations saw beyond their emerging potential? Who sees beyond the obvious possibilities of RFID, remix culture, Massively Multiplayer Online Role Playing Games (MMORPGs), Web 2.0 technologies, and so on? What organizations are ready to pursue new capabilities in order to deliver on the possibilities that these technologies represent?

Author Arthur C. Clarke once suggested that the very people who invent technologies are often the ones to miss their full possibilities. Clarke calls it a “failure of nerve”—that even when given all the relevant facts, one cannot see that “they point to an inescapable conclusion.” While JFK sought to align desire, possibility, and capability—addressing a single, visionary goal—Clarke suggested that we must understand the multiple meanings and implications of innovation. His words are both an intellectual challenge and a challenge to our courage, sensitivity, and imagination.

In *Profiles of the Future: An Inquiry Into the Limits of the Possible*, Clarke wrote:

“Without going into technical details (of interest largely to those who can already think of the answers) the time will come when we will be able to call a person anywhere on Earth, merely by dialing a number. He will be located automatically, whether he is in mid ocean, in the heart of a great city, or crossing the Sahara. This device alone may change the patterns of society and commerce as greatly as the telephone, its primitive ancestor, has already done. Its perils and disadvantages are obvious; there are no wholly beneficial inventions. Yet think of the countless lives it would save, the tragedies and heartbreaks it would avert. No one need ever again be lost, for a simple position- and direction-finding device could be incorporated in the receiver on the principle of today's radar navigational aids. And in case of danger or accident, help could be summoned merely by pressing an “Emergency” button.”

Clarke has more or less described the current capabilities of a cell phone and a range of possible behaviors that it would affect and reveal. Given the seeming omnipresence of mobile phones today, we can relate quite easily to his ideas. But imagine reading this in 1961, a full 12 years before the first prototype of a cell phone was released, and the depth of vision is extraordinary. The desirability was expressed; once the technology and capability became aligned, we were given the cell phone.

The Imagination Challenge

If we learn to see, then there is no end to the new worlds of our vision.

—Carlos Castaneda

As we discussed earlier, the challenge for product development and innovation in the Industrial Age was to extend the limits of technology—by improving how things were made, what they were made of, or the capabilities of the machine that made them. These were logical, technical limitations, and they were eventually transcended by technological innovation.

In the current cultural and technological paradigm, the development model calls for something different. It calls for understanding and mapping of behavior—understanding the current limits of knowledge and wisdom, as well as the limits of people and their environment. This is not a technical challenge, nor is it a tactical one; it is a strategic challenge to our limits as humans and to our desire to transform them into possibility. This is the Imagination Challenge.

Technology is a medium into the unseen possibilities of any experience. The Imagination Challenge, as detailed throughout this book, encourages individuals and corporations to create the indispensable condition required to deliver the promise of new technologies—the ecology of play. By generating a new network of concept makers and business leaders, the Imagination Challenge will redefine the role of technology—not as the cause for meaning and purpose, but as the method for how to achieve them.

IF TOOTHBRUSHES COULD TALK

Imagine for a moment that your toothbrush could speak. What would you like to know? What sort of questions would you ask?

"Do I have any cavities?"

"Am I healthy?"

Suddenly one question leads to a stream of others, and a floodgate opens. And these questions are powerful—they do not ask us to consider how to make a better toothbrush, but to consider what else a toothbrush could be. As triggers directing us toward new outcomes, imaginative questions enable us to engage in seemingly trivial conversations with all seriousness. And the answers could lead to the most powerful frontline diagnostic tool in the home.

I propose here that challenges to imagination are the keys to creativity, and the skill of retrieving imagination resides in the mastery of play. The search for a meaningful and relevant future starts by reclaiming play as an ageless and indispensable condition of every human being. The ecology of play and imagination is the ecology of possibility; a space free of the boundaries of day-to-day logic and constraints, where we can dream—embarking on a journey through Middle Earth with a couple of friends, or landing a human on the moon.

RELEASED BY IMAGINATION

Visualize a chessboard. Eight rows of eight cells in alternating rank and file—sometimes wood, sometimes marble, sometimes a combination of pixels. Thirty-two pieces, 16 to a side, poised for the opening move. The game unfolds on the board, the movement of each piece limited by the type and range of motion it can perform: Rook moves horizontal and vertical, bishop moves diagonal, and so on. You seek to win using strategies and tactics that transcend these limits in movement.

You are bound by the architecture of the board and the rules of the game, and by your own ability to maximize future play. A good chess player can see 15 or more moves into the future with one strategy, which must then be tailored and adapted with each subsequent move by his opponent. Despite the constraints of the board and the range of motion for each piece, the opportunities are astounding; it has been estimated that there are more possible games of chess than there are atoms in the universe. The range of possibility is almost infinite when we understand the strategic relationship that develops between opponents.

"By aligning his rational thinking with intuition, feeling, continual learning, and adaptation, Garry Kasparov adjusted his play to maximize his own capability in the context of the game. This intentional flexibility creates a new mental space—a temporary play space."

In 1996, then World Chess Champion Garry Kasparov faced off in a match against IBM's Deep Blue. Over the six-game series, IBM programmers adapted Deep Blue's code in an attempt to match Kasparov's intuition, pattern recognition, responsiveness, learning capability, and passion during play—the key qualities that differentiated human and AI capabilities at that time. (Since then, AI advances have ensured an almost certain win

for the computer.) But the programmers could not adapt the computer's behavior to secure a victory over Kasparov; although Deep Blue won the first game, Kasparov won the following three and drew two. Why? Strategic foresight.

By aligning his rational thinking with intuition, feeling, continual learning, and adaptation, Kasparov adjusted his play to maximize his own capability in the context of the game. It is the difference between *forecast* and *foresight*; the difference between estimating your adversary's next move and thinking, imagining, and shaping the future.

The formal architecture of the game is a platform, while the variable pieces are in a constant state of transition, and success depends on adapting behavior, intent, and expectation to each event. This intentional flexibility creates a new mental space—a temporary play space—that has structure and rules yet supports unlimited exploration and undiscovered potential. But this potential becomes apparent only to the player with strategic foresight.

TEMPORARY PLAY SPACE

a mental construct formed when we engage in any kind of compelling narrative or play behavior; a flexible platform for the exploration of imaginative possibility. At times, the TPS framework is provided and we need only to engage—such as when watching a film or reading a novel. At other times, we must create the framework ourselves, such as when we play chess or create a castle from a refrigerator box.

The temporary play space is the trickster's domain—and the best chess players are tricksters in action. Problems become opportunities to ask imaginative questions that can unfold new strategies or capabilities. While there are contexts and codes that support the game, the only limits are the limits of their imaginations.

Interpreting the Signals

While everyone is not a grand chess master, we all possess the potential to see the signals around us and explore the "What if...?" We naturally sense that there may be other possibilities in a particular context, and yet we have been effectively trained to ignore all but the most empirical and immediate signals, or new information. Why?

There seems to be a current cultural consensus that the signals present in emerging behaviors such as blogging or innovations such as VoIP are “weak,” and so we will interpret their meaning after they have matured or ripened. (I discuss this and Igor Ansoff’s Weak Signal Theory in more depth in Chapter 7.) This relationship assumes that we all have the capability to receive and contextualize information, as long as the signal is strong and clear.

SIGNALS

the representation of an emerging behavior or technology that disrupts the status quo. Signals have four distinct attributes:

precise: the dimensions of the opportunity are exact, accurate, and detailed. The precise phase of a disruptive innovation usually aggregates and obsolesces predecessors. In benefits terms it is an enhancement.

undeniable: the opportunity is real, cannot be ignored or refused, and it shows the potential for high impact.

intuitive: the opportunity can be defined but it has multiple manifestation possibilities. In the course of time, these possibilities will change.

sensed: there is awareness of possibility in the signal. It has multiple strategic opportunity directions, yet undefined.

But what if something different is true—that our ability to receive and understand a signal is more significant than a signal’s intensity? What is the relationship between a signal and the rest of the world, and what is our relationship with it? How do we constrain and direct our interpretation and understanding? Our success or failure to recognize the meaning and relevance of signals is contingent on how agile and insightful we strive to be. But most of all, it depends on strategic foresight: our capability to construct images of the future with the tools of the present.

Whenever we come across a new technology or service, it has the potential to change our behavior as we negotiate new interactions with it. This shift in our normal behavior may be subtle or explicit, such as using a mobile phone to create a short film. Depending on how receptive we are, however, we may overlook potential implications of the product or service beyond that moment.

When Napster exploded into mainstream culture, most organizations and media sources initially saw it as a means to bypass the music industry's existing purchasing structure—a digital extension of the mix tape within an “underground” community. And at first, this was the precise extent of Napster's impact. But Napster also revealed a deeper desire among people to create and share a mobile digital music library. This desire then became a need, and the need required new technologies and social behaviors as sustenance, leading to massively accepted peer-to-peer (P2P) networks, iTunes, iPods, and the MP3 revolution—anything that would enable a user to create, maintain, and collaborate on an ever-evolving compendium of immediate, personalized content. Napster's format allowed for the fast, cheap, and accessible exchange of music, and this exchange quickly expanded to include all forms of digital content, from top-down organization to bottom-up emergence, remix to mashup. People established relationships and built communities based on the quality, type, and purpose of the content they were exchanging, and Internet-mediated platforms such as MySpace, Wikipedia, and Del.icio.us were born and continue to flourish.

“Napster revealed a deeper desire among people to create and share a mobile digital music library. This desire then became a need, and the need required new technologies and social behaviors.”

In 1999, an astute observer probably would have sensed that the desire to download music would contribute to a social media explosion, Web 2.0 technologies, and a redefinition of social exchange and social capital. But it would have been extremely difficult to track its exact trajectory, unless he or she pursued the question “What if...?”

Why We Need to Unlearn

As discussed earlier, our culture has systematically discouraged imaginative pursuits and play except in controlled circumstances such as professional sports or the arts. Our schools and governments teach the limits and rewards of rational behavior, encouraging tactics and logic rather than strategy and play. But without play, the imagination withers away. We can remedy this loss by recovering our imagination—a recovery that begins with unlearning what we have been taught.

← *Napster's impact: from music exchange to social media explosion.*

Unlearning allows for the discovery and framing of powerful questions, and the ability to explore our imagination without expectation or inhibition. These questions create a space where possibility can exist, where every signal that emerges is an opportunity to map possibility for the future of business, technology, or society.

These maps already exist throughout our culture—as a space not bound by rationality but by imagination. Music, literature, theatre, and film are a few of the platforms that draw us in and engage us, allowing us to understand with our hearts as well as our minds. In any of these areas, we enter into an imaginative contract that has been fulfilled when we have found meaning in the experience that resonates in our own lives. The challenge is to extend this behavior beyond these areas and our comfortable limits, to see what else the contract could be.

“The need for unlearning is proportional to our new capacity for imaginative pursuits. We need to unlearn in order to believe in possibility, in order to explore unseen opportunities.”

The need for unlearning is proportional to our new capacity for imaginative pursuits. We need to unlearn in order to believe in possibility, in order to explore unseen opportunities. We see examples of this every day. Though we have learned that one cannot produce products before establishing a need, we all know 1,000 products and services that would have never been introduced if we had followed the classic value-chain process of need identification, starting with the inaccurate and misleading consumer focus group.

“We don’t need this.”

“No one will use this.”

“It is naïve to think people will walk and talk on the phone at the same time.”

“No one needs more than 640K of memory.”

Learning is at times about limits, and limits prevent us from being imaginative about possibility. Unlearning opens us up to the new. We needed to unlearn that music is meant to be listened to while sitting in a chair or being in a group of people. We needed to unlearn that we need to be connected to the wall while talking on the phone. We needed to unlearn in order to see it as “normal” to have a camera and a cell phone as one and the same product.

What do we believe could be possible?

“One day people will walk and listen to their own play list on a device hanging from their neck.”

“One day a surgeon in Texas will operate on a patient in Alaska.”

We need to unlearn what we are told that people want.

Mapping Possibility

Imagine three parallel timelines. On the first, place technology; on the second, user behavior; and on the third, the organization that can deliver the technology to the user. Technology represents possibility. Behavior holds the motivation and wish to use that possibility, and also represents desirability. Organization—government, business, and so on—holds the infrastructural capability to deliver and sustain possibility.

“Organizations attempt to “monetize” new technology through tactical developments, patents, or copyright. However, technology cannot be monetized. It is the use of technology by people—behavior—that can be monetized.”

As we have seen, the capabilities of organizations often lag behind both advances in technology and the latent needs that emerge from them. For convenience, some term new technologies as “disruptive” or “weak signals” because their immediate impact is seen as peripheral or their significance misunderstood. But when the signals are seen as accelerators of profound transformation, organizations rush into a tactical frenzy to bridge the gap between desirability and capability. This is frequently reactive, perpetuating the too little, too late approach to innovative evolution.

Through this approach, organizations attempt to “monetize” new technology through tactical developments, patents, or copyright—catching the latest lucrative wave. However, this approach doesn’t address the critical factor in innovation or invention: Technology itself cannot be monetized. It is the use of technology by people—behavior—that can be monetized.

STRATEGIC CAPITAL

the excess of an organization's future possibility over its current capability; indicates the organization's ability to remain relevant in an evolving social and economic ecology. Strategic capital is defined by three measures:

hindsight: the ability to evaluate technologies within the context of associated behaviors.

insight: the ability to recognize these behaviors as signals of latent human needs.

foresight: the ability to translate this understanding into strategic opportunity.

A strategic approach calls for the mapping of each new possibility and its pending behavioral desirability. As JFK did with the space program, we must align corporate strategy and business models with the shifting landscapes of technology and behavior. This alignment itself is strategic foresight and its chief tool is the imagination. The outcome of this process is the creation of strategic capital. The art of discovering and maximizing strategic capital is called *strategic creativity*.

STRATEGIC CREATIVITY

the art of discovering and amplifying the three key components of strategic capital—hindsight, insight, and foresight—in order to leverage specific core capabilities of an individual or organization; redefines and creates products, services, and systems that realign people's needs and desires with the possibilities of new technology and the capabilities of organizations.

Corporations need to cultivate imagination in their concept-making activities to ensure their prosperity and continued integration into the social, economic, and cultural landscape. Today very few corporations have objectives in imagination—in fostering environments that trigger the imaginative process and imaginative behaviors. However, effective business change is not accomplished by fitting strategic creativity to business, but by fitting business to strategic creativity.

The necessary intervention to accomplish this is our Imagination Challenge. We cannot go along simply improving existing technology. By now we have motorized, electrified, and digitized almost everything—our chal-

lenge today is to define new strategic directions for technology. This is purely a challenge of imagination.

We have no excuse to fail here.

The Imagination Challenge proposes a set of tools for strategic creativity, for strategically applying the benefits and value of imaginative pursuits. Illustrated as a string of research- and concept-generation activities, they aim at generating new economic models that create or reshape organizational strategy. Strategic creativity is both a capability to be learned—a “how to”—and a discipline—a “what.” Its processes define the concerns, conceptualize the possibilities, and create the methodologies that can effectively manage the creation of future technology applications and products, systems, communications, services, and environments.

WHO SHOULD READ THIS BOOK?

Is this book for managers or academics? Both. We believe that business managers and the academic audience will find value in an infusion of impetus, new ideas, and methods. The future will be shaped by the imaginative mind and a new ecology of learning—free of barriers, fears, and inhibitions. And that future is now.

Engineering Possibility

Creativity represents a miraculous coming together of the uninhibited energy of the child with its apparent opposite and enemy, the sense of order imposed on the disciplined adult intelligence. —author Norman Podhoretz

One would be hard pressed to describe as “work” the daily activities of Michael Faraday, the man who invented the electric motor in 1821. Few of his daily tasks fell under what we would consider the definition, behavior, or process of work. However, all fit within the characteristics of play and play behavior. Faraday spent his days building and experimenting with devices simply for the sake of exploring “What if...?”

Faraday’s invention of the electric motor was the classical result of play: There was no obvious monetary or practical value immediately apparent, and yet it provided the curious and the contemplative with a platform for exploration. His discoveries and subsequent writings about them triggered the imagination of his colleagues and competitors, inspiring them to try to define the opportunities the device might yield.

I have proposed here most invention comes out of play. Play behavior and play ecology are necessities to invention, and the willingness to suspend

reality—another characteristic of play—is necessary during the process of evaluation. For years after the invention of the electric light bulb, it was demonstrated as “entertainment” at country fairs, along with giant vegetables, prize-winning pigs, and other exhibits that were extraordinary and beyond the constraints of people’s daily life. In many respects, the archaic English country fair was the temporary play space for the popular acceptance of the electric light bulb.

“The Millennial Generation is play-wise and play-ready, and it will bring this expectation and capability to the workplace. Organizations have the unique opportunity to direct this generation’s expertise toward strategies that will lead to massive innovation.”

From this understanding of invention as play, we can deduce two important points. The first is the need for companies engaged in innovation to create an ecology of play. The second is related to the crucial role of the mastery of play.

The Millennial Generation—anyone born after 1980—has engaged in play patterns that far exceed those of other generations in their complexity and diversity. Computers and digital technologies have always been present in their lives, in multiple venues and multiple platforms. They invest endless hours in play—and play is the primary reward. They are play-wise and play-ready, and they will bring this expectation and capability to the workplaces of the future. However, many organizations are managed by people born long before 1980. Rather than looking at Millennials as a threat to established methods, organizations have the unique opportunity to direct their expertise toward strategies that will lead to massive innovation and permanently redraw the value chain.

The ecology of work is determined by outcomes and outputs; it contends that people must engage in a sequence of tasks directed toward a specific outcome in order to achieve it. I argue that work is ruled by process, and further, that process kills imagination. At every step in a process, the individual is less concerned with the value of the task and more concerned with accomplishing it within time and other constraints.

The ecology of play is free, separate from daily life, uncertain in its outcomes, unproductive in “productivity” benchmarks and terms of reference, and make-believe. We do not question its motives nor do we question its outcomes. While at play, we do not expect to gain status; satisfaction comes purely from participating in a flow of imaginative and insightful moments. In it, no activity feels like a task. Work tasks can be

accomplished in mediocre ways, but play will never accept mediocrity because then it would no longer be satisfying.

The Imagination Challenge requires that we create a new ecology for possibility within organizations, an ecology that is not superficial—colorful furniture, funny toys, and the ubiquitous pool table—but deep, at the human level, affecting the way we think and discover meaning, purpose, and relevance. The imaginative ecology is populated by dreamers as well as builders of dreams—their complementary capabilities are both needed. We need to treat imagination as something that merits the full-time commitment of individuals and the corporation.

Points of Departure

How do we construct such an ecology of possibility? How do we translate the concepts of strategic creativity into our work lives? Later chapters in this book provide a practical guide to doing so. Chapter 11 is a workbook of adaptive action research methods that guide the pursuit of possibility. This chapter shows how to develop a flexible perspective that cultivates and stimulates possibility through repeating cycles of inquiry, reflection, and analysis, followed by collaborative review. To accurately foster this perspective, the research methods themselves must exercise the same flexibility and acceptance toward ideas and signals generated during the research process.

One platform for this exploration is future scenarios, which can shift our perspectives toward the possibility of new behaviors and help us understand the new and unexplored meaning of signals. Untethered by the weights of logic, reason, and expectation, we can imagine anything in these stories. Much as Arthur Clarke's vision of cell phones didn't address technical details, future scenarios move our focus away from the practicality of tangible, mechanical devices, and toward the possibility of devices that are driven by behavior.

FUTURE SCENARIO

a story about people and how they interact with daily life, chores, and objects; describes interactions with technologies, products, and services that do not yet exist; describes *possibility*.

Most people do not understand the specific technical coding of VoIP—how it is structured or where it is flawed—yet they understand how it meets or does not meet their needs, and how it affects their behavior

and relationships with others. Similarly, future scenarios focus on using a tool or a technology in order to fulfill a certain behavior, personal desire, or social need. When you think about a toothbrush speaking to you, you do not think about how this is possible. You do not question whether or not the technology is available and applicable, but rather you imagine how it will bring meaning into your life.

Future scenarios are an integral element in navigating the imagination gap. They allow us to shed the social constraints of rationality by creating a space where the imagination can run free. However, a scenario is a dead thing without a willing trickster and a curious audience. With both, we can maximize the full possibilities of the story, and the future.

Chapters 12 and 13 elaborate on these aspects of this journey to discovery. Applying action research to Dataspace, the preeminent new field of opportunity, these chapters provide a practical guide to using imagination as a method to amplify the signal of data, data transfer, and so on. They also provide a list of emerging signals that will, or could, inform the reality of corporate business decisions in the next few years.

Big Questions

The future is a set of questions, some bigger than others. Every disruption in technology brings with it new sets of questions. This is what we are confronted with today: powerful questions, as powerful as the ones that followed the discovery of electricity.

We are entering an era of trial and error, experimentation, orientation, failure, and discovery. As values and needs shift, and as the Millennial Generation gains strength, we will enter into an era of play and imagination. These are times in which we need to take everything less seriously, open ourselves to possibility, and enjoy the journey. The rewards will come, but none will be more satisfying than our return to the children we once were.

Like the trickster, this book will be your interpreter and guide to reaping the rewards from this journey. We began with the story of the Taino's discovery of Columbus, a story from the past that illustrates our central belief for the future: that emerging possibilities are in our midst, right in front of our eyes. We just need new capabilities to see them and new tools to create meaning and wealth from them.