



*Ahead of the Curve:
Anticipating Strategic Surprise*

Peter Schwartz and Doug Randall

We live in a world of surprises. When they happen, the typical response¹ is, “Who would have thought. . . ?” Who, for example, would have thought that Islamic terrorists would hijack airplanes and fly them into the World Trade Center and the Pentagon? That was a question that almost everyone—including senior military leaders of the United States—was asking after the fact. Yet, even the most devastating surprises are often inevitable. Many people did anticipate the terrorist attacks of September 11. During the last twenty years, a half-dozen well-known commissions predicted that something similar would occur: Terrorists would attack the World Trade Center again; airplanes could be used as weapons; Osama bin Laden would orchestrate attacks on symbols of U.S. power. Yet most Americans, as well as officials in both the Clinton and Bush administrations, focused their attention elsewhere while the inevitable grew imminent.

Why is the inevitable so often surprising? Many people blame a “failure of imagination.” That is true, as statements go, but it does not get us closer to a solution. If a bunch of imaginative people are brought together in a room and asked to speculate about what might happen, they can easily create an abundance of wild scenarios. Even popular fiction can be ahead of the conjecture curve. Back in 1994 in *Debt of Honor*, novelist Tom Clancy wrote about a Japanese man who flew a 747 into the U.S. Capitol. No one reading that book argued that defense mechanisms should be set up to protect against crazed Japanese men; they saw this scenario as fiction and did not take it seriously.

The point is that imagining things is the easy part. What is hard is imagining future scenarios that are sufficiently believable to spur one to act in advance and find ways to persuade others to act. Achieving believability and action requires a depth of insight and understanding that is rare within companies or governments. This encompasses both an understanding of the world around the organization and deep insight into the mind-set of the decisionmakers within the organization.

Strategic Surprises

In advising major companies and governments on long-term issues, we at Global Business Network and the Monitor Group have come to see that the nature of surprise tends to be misunderstood. People mislabel many events as surprises, when they are actually inevitable and can be foreseen. More critically, people frequently focus on the wrong events altogether.

Instead of trying to react to all events and future scenarios equally, the challenge for leadership is to know which ones to act on. It is therefore essential to know how to identify, and then how to avoid, what we call strategic surprises.

A strategic surprise has three key elements that differentiate it from the run-of-the-mill surprises that are so common in today's complex world.

—It has an important impact on an organization or country.

—Because it challenges the conventional wisdom—"the official future," as we like to say—it is difficult to convince others to believe that the surprise is even possible.

—It is hard to imagine what can be done in response.

Strategic surprises, therefore, are those patterns of events that, if they were to occur, would make a big difference to the future, force decisionmakers to challenge their own assumptions of how the world works, and require hard choices today.

To be able to deal with strategic surprises, it is important to be aware of the two major traps into which people fall. First, decisionmakers tend to view sudden and significant shocks as most important when, in fact, they are not usually what matter most. Granted, the tsunami in Southeast Asia in December 2004 was a significant natural disaster. But simply because something momentous happens does not mean it is a strategic surprise.

Strategic surprises are game-changing events. They do not happen every year or even every decade. But when they take place, the rules of the game that were previously in place no longer apply. Strategic surprises usually reshape the rules of competition. The question then becomes: What are the assets needed

to win, and when do strengths become weaknesses, and vice versa? Vantage point also matters; something can be a strategic surprise for one company or country but for not another, because an event's impact may be felt differently.

Second, the myth about strategic surprise is that the surprise is difficult to identify. Yet, if big uncertainties in the world around us are recognized and explored, important phenomena can often be seen—and monitored—as they emerge. It is easier for people to imagine how they might deal with a danger they recognize, even slightly, than one that comes out of left field. This, in turn, heightens their ability to act or persuade others to act.

The sudden collapse of the Soviet Union in 1991 is one of the great strategic surprises of the twentieth century. It fits the definition of a strategic surprise because it made a huge difference to global politics and economics, it challenged the conventional wisdom that the Soviet Union would exist forever, and it was difficult to imagine how anyone could prepare a response to such a radically new world. Although it was a "surprise" that had been foreseen well in advance, most people did not act.

These are lessons that one of us, Peter Schwartz, learned firsthand as the scenario planner who helped Royal Dutch/Shell successfully anticipate the developments of the early 1980s in the Soviet Union, and then respond appropriately. The first hints that something was happening arose nearly a decade earlier when Peter, then at SRI International, engaged in an ongoing exchange program with a group of Soviet writers, poets, economists, and other leading-edge thinkers who were exploring the cultural, economic, and political evolution of their society. At that time, they were already asking questions about the tensions simmering beneath the surface of the Soviet Union's socialist façade. Despite seeing the fault lines, none of these people could construct a plausible scenario in which the cold war wound down before 2025.

Peter later left SRI to lead Royal Dutch/Shell's famed scenario planning team in the 1980s. At the time, Shell was one of the largest holders of oil reserves in the world. But it faced growing competition for access to new resources from state oil companies in such countries as Brazil, Mexico, and Norway. The areas in the world where a private company could explore for oil were shrinking, so Shell needed to imagine the future of oil and how the landscape could change over the long term to create new opportunities.

Peter decided to study both Mexico and the Soviet Union, which were then off-limits to foreign private companies. Shell knew something about both countries, having been thrown out of them by hostile governments in the 1920s, and perceived that meaningful opportunities might one day reemerge because of changing geopolitics. The research into Mexico, while interesting,

was a dry hole. But what the group learned about the Soviet Union proved fascinating and critical. During the early 1980s, the Soviet Union was proposing to build a pipeline to bring its plentiful natural gas resources to the European market. Shell owned a competing natural gas field in Norway, but it was under 1,500 feet of water. (And at \$9 billion, it proved to be the most expensive platform ever built.) Natural gas from that field was four times as costly as Soviet supplies.

At the time, the Americans and Europeans debated whether a Soviet pipeline would give Moscow strategic leverage over Europe (which is what has transpired today). Western European leaders wondered whether their "enemies" should pay a hefty premium to exploit strategically invulnerable natural resources. In effect, Shell had a pressing need to understand if there was a plausible scenario in which the cold war ended and the Soviet Union stopped being a real strategic concern.

Shell's planning group did a tremendous amount of research. It studied the experience of Hungary, then transitioning toward capitalism as a model of "goulash communism." This country was an indicator that things could change rapidly in the Soviet sphere. Shell also had access to a wealth of data about Soviet energy consumption. But when Peter's team compared those data with the best available information about economic output, it realized that the pictures did not match: the amount of energy being used was insufficient for the stated level of economic output. Either the energy data were wrong, or the Soviets were much more energy-efficient than anyone imagined, or the output data were wrong. It turned out that the energy data were correct. This discovery was an important signal that the Soviet Union was already beginning to collapse under the weight of its own economic contradictions. The only question was what the postcollapse environment would look like.

When Peter presented these findings to Shell's board of directors in 1984, the idea that the Soviet Union would soon collapse seemed thoroughly implausible. Although President Ronald Reagan talked incessantly about America's long-term battle with the Evil Empire, people within Shell (and within the U.S. government) had trouble believing collapse was possible. Even if it was, they did not know what they could do about it. Fortunately, the Shell scenario team had also identified the key indicators that would signal which scenario was unfolding, and over the next eighteen months, all the "collapse" indicators flashed. As history proved, the group got the scenario right for the right reasons. It was a true strategic surprise: an important set of issues, decisions, and results that fundamentally influenced future actions.

The demise of the Soviet Union was not that difficult to foresee, however. George Kennan had predicted it in his influential essay on containment in 1947.¹ What *was* difficult was convincing Shell's board of directors that collapse was possible and then to take action, even as, one by one, the indicators turned positive. Ultimately, Shell was able to profit from that call: it was the first major Western company to realign its exploration strategies around the new realities of what soon would be called the "former Soviet Union."

How to Sense Strategic Surprises

We live in a society that relies heavily on precise predictions. Pundits who do not make predictions—or who make predictions that are not exactly right—lose credibility. However, thinking about the future and about strategic surprise is a messy business for which precise predictions are the wrong concept. The goal is not more accurate predictions. Rather, it is better decisions and more effective action.

Instead of claiming that anyone can *predict* what is going to happen, we argue that everyone, from analysts to decisionmakers, can see the forces as they are taking shape and not be blindsided when those changes inevitably reshape the global environment. Anticipating strategic surprise gives decisionmakers the ability to look in the right place for game-changing events and to track them systematically. As these scenarios become more plausible, and ever more imminent, decisionmakers can then pay attention to the right things when they matter most. This kind of insight leads to better questions rather than better answers, but better questions are very, very important.

At this point, some people might say that only specialized consultants, or remarkable companies with access to unique information, can anticipate significant future events. Not so: anyone can sense these forces if they make it a priority and are committed to a systematic approach. Poorly structured, ill-defined, difficult-to-grasp problems can be solved. They are not intractable. They just require novel thinking and approaches.

So how do ordinary people and organizations sense strategic surprises in practice? We have found it useful to construct a portfolio of approaches.

BEING IMAGINATIVE AND SYSTEMATIC

Structurally, organizations must embed two fundamentally different and intersecting orientations—being *imaginative* and being *systematic*. This is a *both/and*, not an *either/or*, approach. One cannot foresee strategic surprises

without being imaginative, but the results will not be believable without being systematic.

It is critical to push people's imagination out to the very edges of believability to see the full range of the possible. Ideas that may be on the fringe now often have a way of entering the mainstream. One scenario that seemed relegated to science-fiction movies a decade ago was that of an asteroid hitting the earth. Today, the United Nations is meeting on the subject and the National Aeronautics and Space Administration is taking the possibility seriously.

It is also important to look for events that seem to have a low probability of happening but that would have a high impact were they to occur. In mathematics, the probability of a large number of events concatenating into a single story—that is, any given scenario—is vanishingly small. But when one considers something as large and complex as a nation or a city or a large company, many low-probability, high-impact events become possible. If there are 1,000 such events and the probability of each one happening is 1 in 100,000, then there is a pretty good chance 1 will occur, and fairly soon.

To encourage imaginative thinking, our company brings leaders out of their element—and their comfort zone. We expose them to different organizations and environments through “learning journeys.” We hold meetings atop tall buildings with plenty of windows to inspire the long view. We encourage people to role-play belief systems they do not endorse so they can see the other side of an issue and to experiment with improvisation as a tool for responding to the unexpected.

In this case, it helps to live where ideas are a key currency, as they are in the San Francisco Bay Area. By being exposed to many new ideas first, Californians have a strong track record of taking thinking that seems implausible and making it real. New ideas from California have a slightly higher degree of credibility than those coming from many other parts of the world. That is not trivial.

Being systematic is equally critical and means exploring, in a rigorous way, how significant events might unfold. Can one construct a plausible, rigorous pathway from here to there? If so, then the event has to be taken seriously. It is fashionable right now to say that practically anything that pops up on someone's radar screen is an unforeseeable, “emergent” phenomenon. People say that surprises *emerge*, meaning that they surface without any warning, so leaders therefore have no ability to identify surprises ahead of time. This is mainly an excuse for a lack of discipline in systematically collecting and analyzing information. Senior managers and officials *can* anticipate events, and pretending that they are not discoverable is analytical laziness. It means these leaders

either did not go through a disciplined process to surface the unexpected, or they failed to adequately analyze and communicate the surprises so that people believed in and acted on them.

There is also a tendency in organizations to rush to an opinion. The president, for example, wants to know *right now* if a country has weapons of mass destruction. Incomplete information is unacceptable. Few organizations reward those who are able to say, “I don't know” and “I need more data on such and such points.”

Being systematic at both the human and organizational levels makes it easier to build systems to detect surprises even with highly imperfect data. Decisionmakers can act with less information or with information that comes in over months and years. Policymakers can take a “real options” view of problems in which new information changes the confidence in or the direction of their decisions as it emerges, causing them to adapt and act differently.

THE FILTERS APPROACH

One relevant metaphor for collecting information is “filters.” Organizations need multiple filters, each one measuring different kinds of information at different granularities. This is similar to building filters to measure sunlight, air particles, or ultrasonic waves. A multiplicity of frameworks, perspectives, and experiences is needed, each surfacing different kinds and categories of insight into the baseline information, many of which overlap.

Most organizations focus on a single source of data when looking to the future. In fact, corporate research departments often separate competitive, market, industry, and financial research; likewise, government intelligence organizations are divided according to source: human (HUMINT), signals (SIGINT), photographic, open source (OSINT), and other types of intelligence. Such organizational structures may simplify data collection but can also make processing good insights more difficult.

There are alternatives. Structured databases can capture and relate varied information like data on demographics, economics, and energy use. Information markets can help make sense of the “wisdom of crowds.” Analyst reports can target underlying, quantifiable trends. In many situations, from national security to corporate competitive intelligence, secret information is often valued over publicly available or open-source information, which may be marginalized or ignored altogether. A portfolio theory of collecting information, however, emphasizes using a multiplicity of data sources—both public and private. But the integration of all that disparate information ultimately relies upon the intuitive judgments of the human mind.

In an interview with us, James Surowiecki, *New Yorker* business columnist and author of *The Wisdom of Crowds*, noted three open-source ways to find relevant data and opinions outside of one's most familiar frame of reference: discover unfamiliar terrain on the Internet; take high-quality but undervalued academic work and transport it to a different environment where it can be of high value; and read outside your field of expertise to find potentially useful metaphors and conceptual insights.² When multiple sources are used and interpreted together, we have found that it is easier to separate the signal from the noise.

In our work, we have also taken the relatively rare step of creating and tapping networks of thoughtful people who have their fingers on the pulse of change. We talk regularly to these artists, scientists, innovators, writers, and politicians to listen for clues about important trends. And we urge organizations to reach out to individuals from multiple disciplines who think differently and use a variety of filters to make sense of information. For example, the Global Business Network team that is working on security and intelligence issues includes a neuroscientist, a political scientist, an intellectual historian, an MBA, and a former intelligence analyst. We supplement that team with a network of insightful, external people to ensure cross-disciplinary thinking and varied perspectives. Of course, it is less efficient to manage so much diversity, which is why so many organizations don't do it. But avoiding strategic surprise is not about efficiency.

Similarly, getting out of the office and experiencing issues firsthand also is critical. Anyone who visits Shanghai, for example, will find it hard to deny that China is going to shake the world in the next fifty years. Reading articles about China pales in comparison to the visceral experience of being there.

PROCESSING INFORMATION DIFFERENTLY

Instead of simply looking at how information is *collected*, it is critical to think about how information from multiple filters is *processed* effectively. People who operate in a secret world, as intelligence agencies do, need to ask how to find and process information in a public environment without giving away secrets. Those who operate in the business world must move beyond a narrow reliance on market research departments to uncover what is really going on. In both situations, leaders need insightful ways of imagining how collected data come together and how to think about the choices that arise from that integration.

We use many frameworks for processing information. One is STEEP, which stands for the social, technological, environmental, economic, and political forces that compose the key drivers of change in the business environment.

Another is "scenario thinking," which involves developing a two-by-two matrix that juxtaposes the most important critical uncertainties facing an organization. This provides a framework for imagining four different, plausible, and challenging futures against which strategies and choices can be developed and tested. "Choice structuring" is a framework that requires people to identify clearly the options they face, the influences on their decisions, and the data required to make those decisions. Many other information-processing frameworks exist; the most important lesson is not to use a single interpretative approach.

Another tempting, but counterproductive, tendency is adherence to a comprehensive "theory of the case." Consciously or unconsciously, people often form a theory of how geopolitics, economics, or the dynamics of an industry or technology works. This is a powerful source of systematic blindness. In finance, modern portfolio theory cautions against investing all your money in one stock; so why would you want to invest all your strategic thinking in one theory? In the 1980s this was a big reason why many people missed the obvious signs of the Soviet Union's coming collapse.

Some individuals think they can get around this blind spot by having multiple theories, or, in the language of investing, by diversifying their assets. While several theories are better than one, the risk of being blindsided remains high, precisely because strategic surprises tend to fall through the cracks between the theories.

LOOKING OUTSIDE-IN AND INSIDE-OUT

In our work, we follow a systematic way of surfacing surprises. We rigorously construct a range of plausible scenarios about the future that enables leaders to explore and exploit the unknown and take action in the face of uncertainty. To do that, we look at a problem from two perspectives: outside-in and inside-out.

An outside-in perspective means systematically exploring the major forces of change: demographic, social, technological, economic, environmental, political. For example, one might analyze immigration patterns, new developments in telecommunications technologies, shifting geopolitical relationships, income disparities, and so on. By studying in depth these trends and the interactions between them, it is possible to identify the forces that are likely to produce a big discontinuity in the future and its relevance to the organization.

In thinking about strategic surprise from this perspective, it is important not to focus simply on events themselves, but rather on the contexts within which they are developing. For instance, the game-changing potential of the

Yom Kippur War in 1973 would have been radically different without the larger context of the cold war. Understanding these contexts then becomes part of the analytical process of anticipating surprise.

The next step is to take an inside-out approach. Here, the question is less about what is going on outside in the world, but rather: What are the risks to the organization? What are the key elements of vulnerability? What would make a big difference in the future? For oil companies, the significant issues might include the price of oil, access to exploration opportunities, or environmental regulations. By pushing those elements to the extreme, new insights emerge: What happens if oil prices skyrocket or plummet? What difference would it make? What if access to new exploration opportunities is denied or assets are nationalized? How could that happen?

When Peter worked at Shell in the early 1980s, he used this approach to develop scenarios about the future price of oil. In a situation much like today, oil had reached \$70 a barrel (in 2006 dollars), and the big strategic issue facing oil companies was how to deal with the “cash mountain” that would result if oil hit \$120 a barrel. In that case the entire industry would struggle to reinvest its enormous profits and diversify into other industries, because oil would start running out by the mid-1990s.

Instead, Shell asked, “Is there any way the price of oil could go in precisely the opposite direction?” The planning group constructed three scenarios, with oil priced at \$120, \$70, and \$16 a barrel. Not surprisingly, Shell’s managing directors quite liked the first two scenarios and thought the third highly unlikely. That scenario showed what would happen if oil started behaving just like any other commodity—according to the laws of supply and demand. When the price went up, people would drive less and use less oil; simultaneously, companies would try to cash in on high prices by producing more oil from more expensive sources. The strategy team had developed the indicators that would tell the company which scenario was playing out, and the board had the foresight to allow them to track these signals. Sure enough, by the summer of 1985 the indicators were clearly pointing to a looming price collapse. Shell was able to profit from the downturn by buying oil fields for far less than their owners had originally paid and by trading oil against companies that failed to imagine just how low the price of oil could go.

The key point was not that this group of people predicted exactly *when* the price of oil would collapse, but rather that it understood *how* the price might collapse and *which* long-term indicators to watch. The company’s directors did not have to accept or reject the scenario on day one but rather could adapt to the indicators over time. They were therefore better prepared and avoided

some big mistakes, such as buying fields or companies when oil was priced at \$70 a barrel.

MAKING SURPRISE BELIEVABLE

There is a tendency to deny strategic surprises altogether. For example, people say, “China can’t maintain its recent success, can it?” And yet China keeps growing in importance.

Much of the reluctance to grapple with such game-changing issues stems from an unwillingness to face the consequences of taking different scenarios seriously. Those consequences might interfere with long-held mental models, organizational structures, or self- or business interests.

Denial is a powerful form of cognitive bias and one of the most common reactions found in organizations of all sizes. Denial is the failure to believe or acknowledge that an organization is facing uncertainty and may need to make major changes to respond and adapt. Denial can stifle creativity and make companies and nations susceptible to strategic surprise.

An example from our own experience concerns the rise of religious politics in the United States. One of the big changes of the last two decades has been the growth and political influence of the fundamentalist Right. This game-changing phenomenon was foreseen in a 2000 book by Robert William Fogel, and before that in sociologist Robert Bellah’s extensive writings on religion in America.³ In his book, Fogel argued that the United States was going through yet another religious revival, this time partially driven by rising birthrates among fundamentalists (and low birthrates among nonfundamentalists). Even though a colleague urged us to read Fogel’s book, insisting that this trend was critical, several of us completely ignored it. We were in denial about the implications of a religiously conservative America, and this competing perspective conflicted with our established mental models. We therefore missed out on alerting our clients to an important force in American culture and politics.

Because denial is such a strong influence, one of the most important steps in constructing an imaginative and systematic analysis of the future involves making the analysis believable. For starters, this requires bringing the portfolio of analytical approaches together to create scenarios that could produce significant surprises. Well-crafted scenarios can help organizations that suffer from denial about future change to rehearse it in advance. By articulating challenging, yet plausible, ways in which the future could evolve, scenarios encourage management teams to “think the unthinkable,” anticipate surprises, and try out new possibilities. In scenario exercises, we encourage teams to explore the strategies they would pursue under radically different scenarios or external circumstances.

Scenario-thinking exercises generally begin with a rigorous fact-finding phase, where the “official future” is articulated. Rather than conducting research about how a company is performing, or what the future is likely to be, the research builds a story describing the assumptions that management has about the future, based on interviews and observable actions.

When our team presents the threat or opportunity of a strategic surprise to clients, we spend a lot of time telling such stories. Constructing good scenarios involves understanding the decisionmakers and how they process information; knowing their mind-set, what they perceive to be the risks ahead, and where they are confident about the future; developing a theory of change for them; choosing the words and graphics that will have an emotional impact; and figuring out how they need to hear the story in order to act. Articulating the *official future* is one way to show people the need to believe in *another* future, which sets the groundwork for believing in *alternative* futures. And narratives—stories, with characters, plots, and paths—help to make these futures real.

In 2003 we constructed a scenario about climate change for the Pentagon that received a great deal of press attention.⁴ We did not invent the story, however. We got our facts from a National Academy of Sciences report entitled “Abrupt Climate Change: Inevitable Surprises.” What we did was construct a worst-case scenario that was *believable* during a time when many were still skeptical that sudden cooling could result from global warming. We did that by explaining the science in a way anyone could understand and then tying the data to a hypothesis about the huge impacts from climate change. We also based it on a real event that happened 8,200 years ago—when the climate cooled suddenly after a period of gradual warming—as proof that it was possible.

When we began to develop our scenario, the collective, conventional wisdom was that the world was facing a gradual rise in global warming that would take hundreds of years to play out. Policymakers would have plenty of time to take counteractions, such as those laid out in the Kyoto Protocol. The time frames for both the problem and the solutions were being measured in centuries.

Mental models are misleading, however. The average temperature may be rising gradually but, as they say, you can drown in a river of averages. (The average depth of the Rio Grande might make it safe to cross, but you can certainly drown where the river is deepest.) Likewise, the average climate of the world may indeed change gradually, but scientists know now that when energy in the atmosphere increases and the relationship of the ocean to the atmosphere is altered, the results will be more extreme, not more average. The world will experience more hurricanes and droughts, more extremes of hot and cold, faster rises in the sea level.

All the warning signs we developed decades ago in our early work on climate change, and have been carefully tracking ever since, have pointed increasingly to the fact that the world is in a period of rapid and dramatic change. The early signals are apparent right now: the slowdown of the northward movement of the Gulf Stream; the ultra-rapid melting of the polar ice cap; and the disruption of the salmon season off the West coast of the United States, which has been attributed to the failure of nutrients in the lower depths of the Pacific Ocean to rise to the levels in which the salmon swim.

The Earth is clearly in a time of rapid rather than gradual climate change, and clear signs of environmental catastrophe will be evident in a few decades, not centuries. The most visible marker of this new era will occur when the nation of Bangladesh disappears from the planet—a catastrophe that will happen sooner than people think. Rather than sea levels rising to destroy it, Bangladesh will first see storm surges that regularly flood most of the country, affecting three out of four Bangladeshis (compared with one in four today) and making the entire country basically uninhabitable.

The fundamental, game-changing question then becomes: Is this a process of slow adaptation and mitigation in a world that is gradually warming, or an urgent crisis in which climate extremes will soon dramatically transform continents and countries? The first scenario might lead a country to forgo nuclear power as an alternative source to carbon-based energy sources, while the second might make nuclear power an urgent priority. There are real consequences to these perceptions. It was precisely this shift in perceptions that led British prime minister Tony Blair to alter his stance on nuclear power from firmly opposed to reluctantly supportive.

Generally speaking, scientists do not present their information so dramatically—and neither do many intelligence or corporate analysts. But telling the story of abrupt climate change like this brought the immediacy and impacts of global warming to life. Interestingly, a few months after our report was published, the movie *The Day after Tomorrow* came out. It told a similar tale in an even more imaginative, if less accurate, way. The result? It made our report look moderate, and today, the impact of abrupt climate change is moving to the center of the scientific and political agendas.

Preparing for Future Surprises

Anticipating strategic surprise is ultimately valuable in terms of preparedness. Organizations that have thought about such significant issues are much more likely to discern important, emerging trends early on; identify the indicators

that tell them something big is happening; and put in place the sensors to detect strategic surprise as it unfolds. If the key indicators are getting worse, the worst-case scenario becomes more and more plausible.

This in turn gives organizations the ability to act in advance if they believe a particular scenario is unfolding. It gives them more maneuvering room and time to create new options. The more powerful an organization or country is, the more important early recognition and anticipatory action become. The stakes get that much higher, and the probability of getting surprised becomes even more likely. Such preparedness results in the ability to seize opportunities, such as gaining first-mover advantage when surprise happens, and to deal more effectively with threats, such as minimizing risks with contingency plans or even preventing certain events from happening.

In our daily work, we are constantly engaged with major companies and organizations, talking with leading-edge thinkers, traveling the world, and using the important tools mentioned here to scan the landscape for "what's next." Global Business Network has been in business for nearly twenty years because our clients highly value the insights such methods produce. And while we are not without our mistakes, we have managed to anticipate many of the major strategic surprises of the past two decades and get others to take action.

We can already see on the horizon the signals of scenarios that may seem implausible now but which would be game-changing if they were to occur. Whether they happen in exactly the way outlined below is not important. What is critical is developing the right indicators and responding if they do.

The Breakup of Indonesia. Two powerful dictators held Indonesia together for decades after it achieved independence from the Netherlands: Sukarno from 1945 to 1967; and Suharto from 1967 to 1998. When Suharto's government toppled after a massive public uprising, the possibility of breakup became increasingly likely. While Aceh appears to be calm, for now, after thirty years of separatist battles and the devastating December 2004 tsunami, East Timor has been the site of massive unrest after breaking away from Indonesia, Java has been rocked by a major earthquake, Sumatra has experienced a huge outbreak of bird flu, and Islamic fundamentalists have been waging war against Indonesia's secular society. And despite recent evidence of an economic recovery, even after large cuts in domestic oil subsidies, for various reasons oil-rich Indonesia is no longer a major oil exporter. Economic and political conditions are changing dramatically, and the situation is ripe to explode, with large consequences for the entire region. Imagine a dozen East Timors.

The Rise of Quantum Computing. Many people believe that we will run out of computing breakthroughs in the not-too-distant future, and that Moore's

Law of ever-multiplying computing power will reach the natural limits of silicon chips and ordinary physics. Conversely, over the next fifteen to twenty years, the world will see the rise of quantum computing, which harnesses the unique new capabilities of quantum physics to revolutionize computing. It will free computers from the limits of the binary numbers one and zero, and allow many states to coexist simultaneously. Quantum computing will be used to solve entirely new scientific problems, and it will change the rules of the game. It could enable entirely new inventions, such as the ability to understand and control how proteins shape the development of the body, while also producing new sources of value and business models.

The Collapse of NATO. Many observers think the North Atlantic Treaty Organization will persist, but we think it appears virtually certain to disappear within a decade. The fundamental interests of the United States and Europe, NATO's key powers, are diverging. The Americans will no longer want to pay billions of dollars to protect rich countries like France and Germany. As postimperial powers, the Europeans are reluctant to get involved in peacekeeping missions in places like Bosnia and Darfur. Their goal instead will be containing U.S. power. Most U.S. forces are already out of continental Europe, (with a small increase at NATO's far eastern border). The United Kingdom remains suspicious of the continental Europeans and is likely to side with the United States in this split.

A Grand European-Russian Alliance. As the strategic interests of Europe and the United States diverge, Russia is increasingly likely to get itself into deep economic trouble. When this happens, Europe could come to its aid, offering money, markets, talent, and technology in exchange for access to Russia's abundant natural gas, oil, and timber resources. More important, it could gain strategic strength from Russia's 10,000 nuclear missiles. An alliance could produce a global superpower that rivals the United States and China in military and economic strength. This scenario could be triggered by a demographic collapse in Russia. The dramatic decline in the birthrate years ago, combined with a sharp fall in life expectancy among working-age men, will cause the Russian labor force to slip into a steady decline. This will in turn lead to an economic collapse in the years ahead. Only high oil prices are protecting the economy now.

The Breakdown of the Euro and the EU. A countervailing force in Europe could also take place as the continent's much-heralded economic and political integration begins to fall apart at the seams. Important indicators of this scenario have already occurred. The rejection of the European Constitution by France and the Netherlands dealt the project of political integration a major

setback that will last for years. The idea that the European Union will become a federal system is off the table politically. Equally vulnerable is the euro project. The key economies of France, Germany, and Italy have significantly diverged in terms of budget deficits, inflation rates, and growth rates. Italy is desperate to get out of the euro and to revalue its currency, a habitual fiscal lever in the past. Political and economic integration reinforce each other. If the various forms of union are to succeed, they must proceed together. If they both retreat together, it may be difficult to sustain the entire European project. While it is just as likely that this scenario may not happen, for the first time observers can actually consider this possibility and look for the indicators.

Egypt Goes Fundamentalist. The signals are obvious: A dictatorial leader is grooming his son to rule after him; a corrupt elite is running a country with a rapidly growing population; a small but aggressively violent elite tries to seize power. What does this scenario sound like? Iran in 1978. It obviously will not happen in exactly the same way. But what if elections are held and the fundamentalists win? Will the situation look like Algeria in 1992, when a fundamentalist victory was suppressed, leading to a decade of civil war? So far, most of the world is not focused on the growing likelihood of this scenario.

An Anti-American World. Suppose the rise of populist governments in Latin America is an early indicator of a global swing to the political Left, driven by inequality. Previous decades have been dominated by the United States, markets, and democracy. Imagine that the more socialist countries like China, France, and Russia are the models for the decades ahead, not the pure capitalists of the United States and Britain. Global anti-Americanism, increased regulation, a decline in market integration, and a rise in protectionism could all trigger a huge global downturn. Globalization could unravel into competing mercantilist systems jockeying with the United States for global supremacy. China is already showing signs of creating an economic alliance across Asia and the developing world in the scramble to lock up natural resources. Russian market reforms are at best spotty, at worst disintegrating. Could all of these countries converge in a new era of containment with the United States as the nation to be contained?

Each of these scenarios is beginning to exhibit all the hallmarks of a strategic surprise. The warning signs are there if one's eyes are open to them. Whether or not they come true in exactly the ways outlined here, the world's business and government leaders will be immeasurably better off if they carefully consider how these scenarios could come to pass and act today to create maneuvering room for the radically different world that these game-changing events could create.

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