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Harvard Business Review

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Schwab Retirement Plan Services growth rate and industry growth rate as measured by compound annual growth rate of client assets. Sources: Cerulli Associates Quantitative Update—Retirement Markets, 2007, and Schwab Financials, 2003–2007.

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Features

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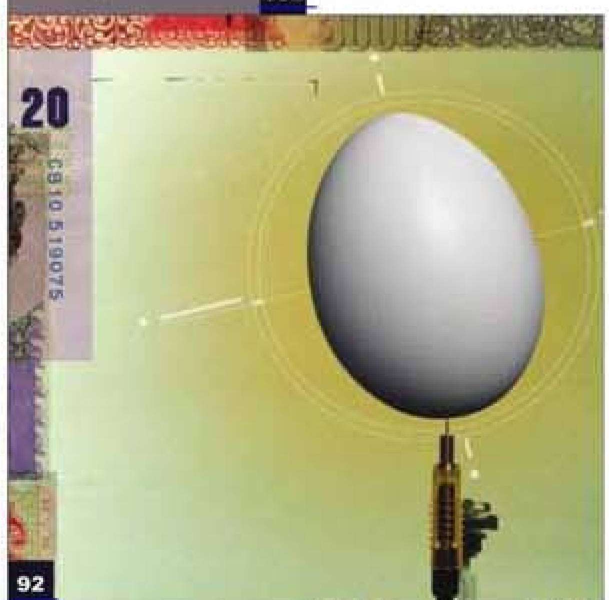

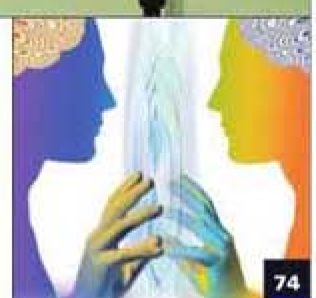

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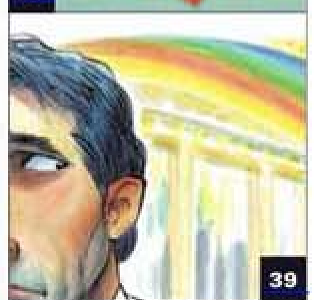

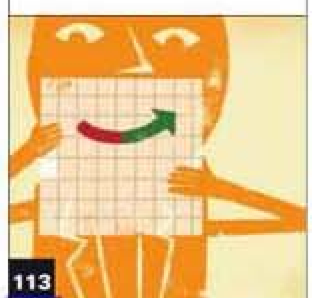

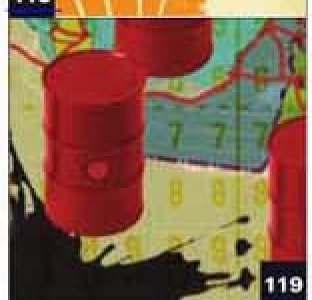

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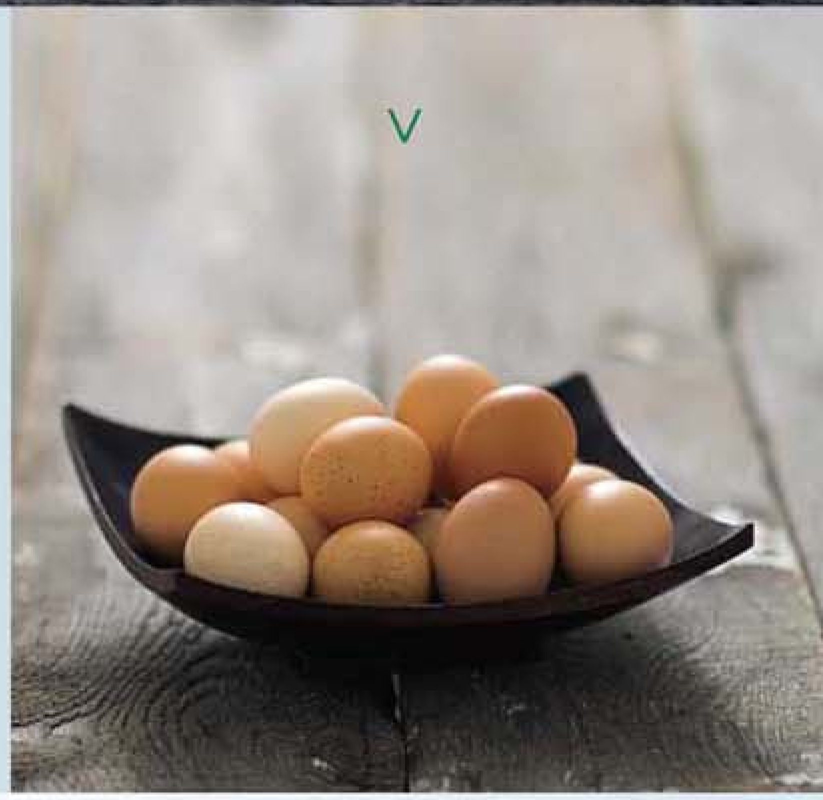

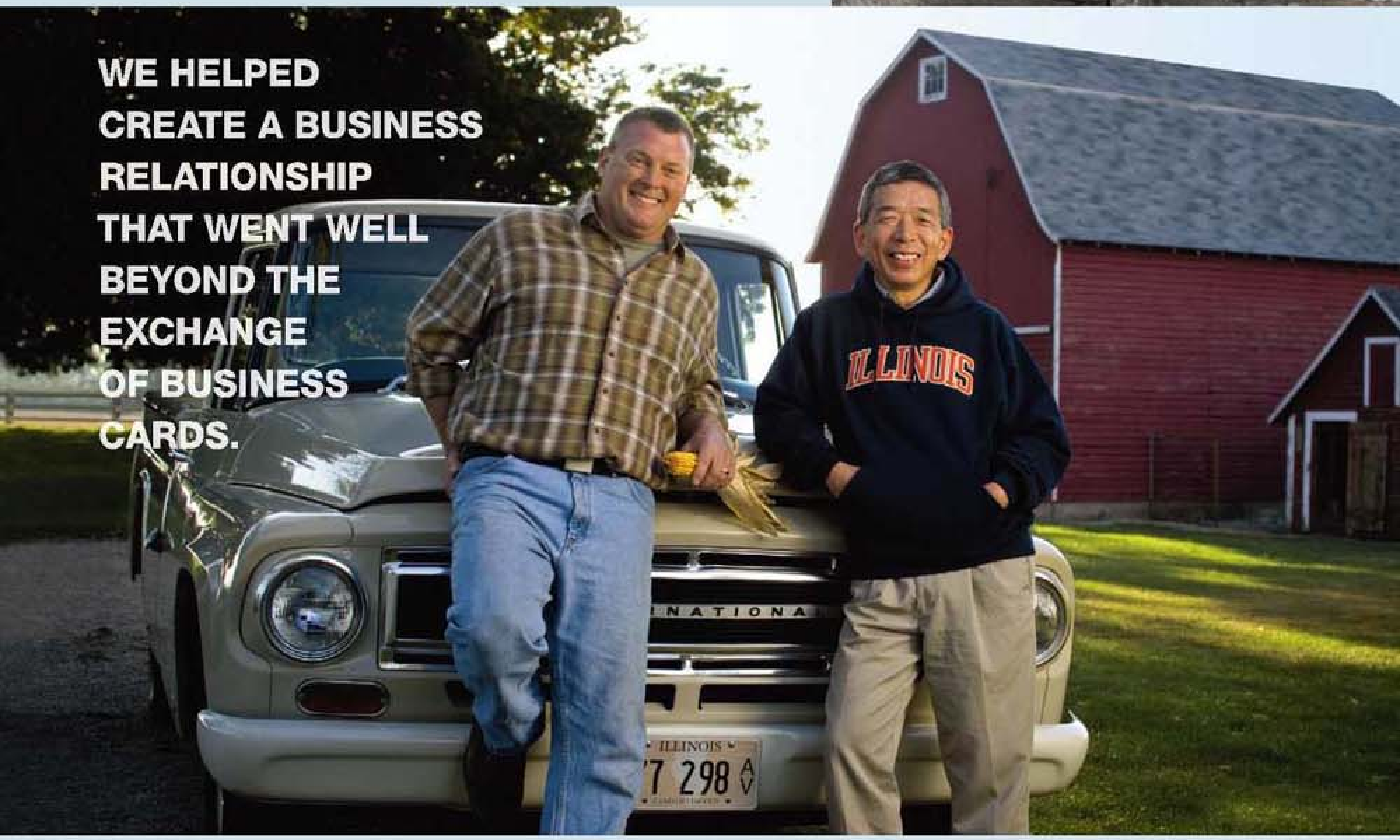

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> Seven Ways to Fail Big

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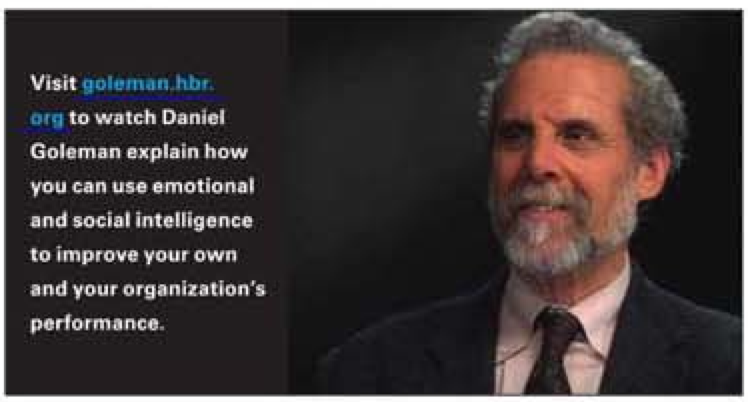

> An Inside Look

Harvard Business Review Editors' Preview

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The editors of HBR have posted questions that managers ask about their biggest challenges, along with selected articles that address each one. Readers can suggest questions or topics by clicking on "E-mail Us" on the HBR Answers page.


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Risky Business

WE FELT briefly validated last winter when economists, too, seemed confused about what the subprime mess in the United States would ultimately mean for the global economy. But after a little more thought, we decided that their confusion was terrifying.

Seeking a better understanding of the risks posed by modern financial engineering, we consulted Diana Farrell, director of the McKinsey Global Institute, and posed this question: If you could gather the world's wisest statesmen and economists for a new round of Bretton Woods talks, who should be there, what would their work consist of, and what would they decide? Her answer appears at the front of this month's Forethought, and it's fascinating. Their job, she concludes, would be to balance the very real benefits of evolving capital markets with the new risks they entail – and doing that would require a change as much in how leaders *think* as in what they regulate.

Not coincidentally, this issue includes a two-part article on risk management by Kevin Buehler, Andrew Freeman, and Ron Hulme, also from McKinsey. The first part is a wonderfully clear account of the financial industry's development of risk-management tools over the past 40 years. The second part explains how corporations can adjust to the revolution in risk management and, in particular, how they should think about which risks to hold on to and which to outsource.

Rounding out this look at the new, riskier face of global capitalism is an article about investment strategies in the Persian Gulf – "Where Oil-Rich Nations Are Placing Their Bets." The authors – Rawi Abdelal, Ayesha Khan, and Tarun Khanna – persuasively argue that there's a world of difference between what the Gulf countries are actually trying to achieve and what Western leaders imagine they're aiming for.

Also in this issue, Daniel Goleman and Richard Boyatzis sketch the ways in which brain science is uncovering the biology that underpins leadership. The authors demonstrate that the soft side of leadership has its roots in hard science about the brain.

Pixar produces delightful, sophisticated animated films that parents as well as kids love. It is that rare thing, a company with a recipe for both artistic and commercial success. In our cover story, Pixar's president, Ed Catmull, shares the principles behind that success: First-rate people are more important than great ideas; the best talent in the world can't deliver unless solid support systems are in place; it's not only possible but necessary to get star players to work in a peer culture; and, most intriguing, it's "bad for our souls" to aim for less than excellence.

Another kind of filmmaker – the documentarian Errol Morris – is the subject of our Different Voice interview this month. He brings a historian's eye and a forensic scientist's rigor to the problem of sifting through ambiguous evidence to arrive at the closest approximation of the truth.

"Seven Ways to Fail Big," by Paul Carroll and Chunka Mui, has an ambitious agenda: to categorize the bad strategic bets that companies make and to identify decision-making processes that will help other companies avoid similar failures. The key process is appointing devil's advocates with enough clout to stop a bad decision in its tracks.

Finally, "How to Protect Your Job in a Recession" brings us full circle. If the vagaries of global financial risk threaten your job, how can you hedge your own risks? Janet Banks and Diane Coutu, who have observed layoff survivors over the past two decades, offer practical advice.

After six years of leadership with the magazine, Tom Stewart has decided to step down as editor of *Harvard Business Review*. His intellect and enthusiasm will be missed.

–The Editors

Robert Meganck

Harvard Business Review

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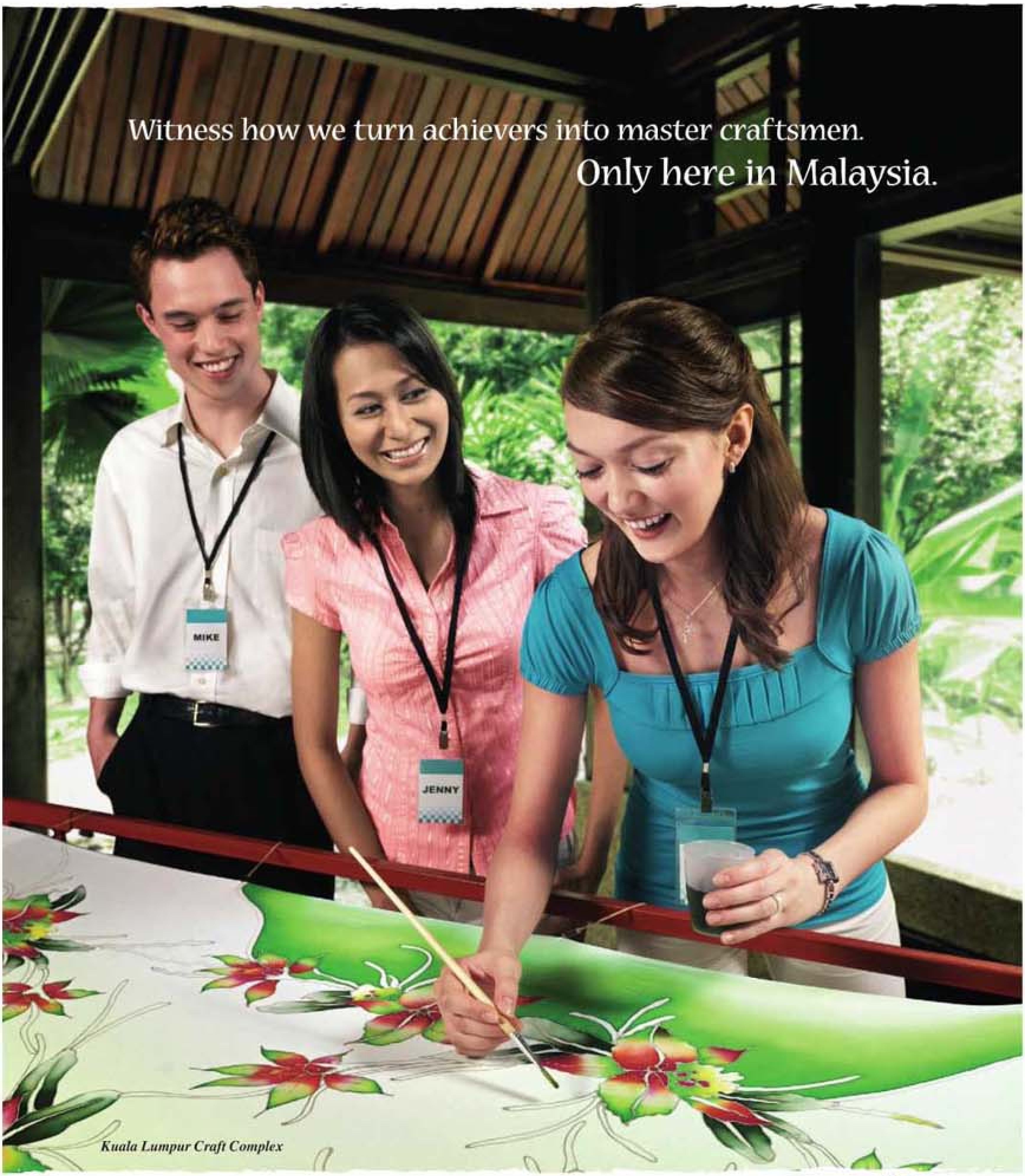

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William A. Sahlman
"How to Write a Great Business Plan"
Harvard Business Review
July–August 1997

"Make a note: Heavy foot traffic is *not* an advantage to our locations."

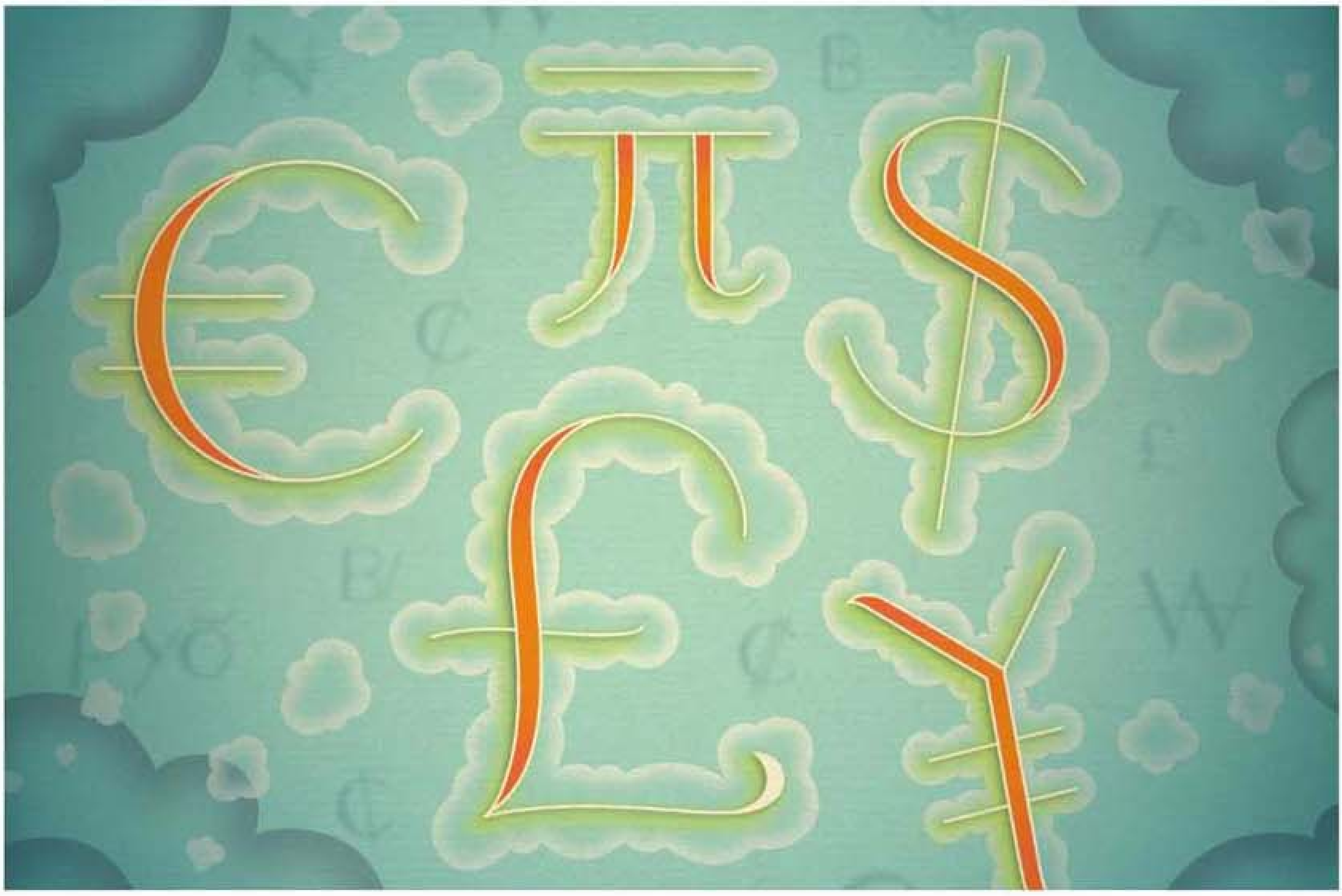
"Consultant tracks. Fresh ones."

"We're pressed for time, so we'll be jumping to conclusions."

Teresa Burns Parkhurst, Roy Delgado, Rod Rossi

forethought

A survey of ideas, trends, people, and practices on the business horizon



Jessica Hische

GRIST

New Thinking for a New Financial Order

by Diana Farrell

The current credit crunch has added new urgency to discussions about redesigning the rules of the game for global capital markets. Clearly, risk management has lagged behind innovation in the financial system, and existing regulatory frameworks and institutions need to be updated to keep pace. But too often, proposals for reform reflect outdated thinking based on a view of the world as it existed in 1944, when the Bretton Woods system was created. It was an era in which national economies were largely managed by governments, international financial activity extended little beyond trade, and the United States was the center of the financial scene. In order to develop appropriate new rules for the current era, we must begin to think differently about the rapidly evolving financial world, focusing on three key dimensions:

Activity on a global scale. National governments are clearly still important to the world financial system, but their ability to unilaterally manage and regulate financial activity is diminishing. Instead, as global capital markets grow, they are dispersing financial power. The United States remains the world's biggest economy and home to the largest financial markets, but the influence of Europe, China, and the Middle East (among others) now extends globally. Investment of trade surpluses by Asian countries and of petrodollars by oil exporters has pumped liquidity into global capital markets, lowered interest rates in developed countries, fueled a new wave of leveraged financial activity, and propped up struggling Wall Street investment banks.

All this has happened as the world's capital markets have undergone an extraordinary transformation. The value of the world's financial assets – including equities, private and public debt, and bank deposits – has soared from $12 trillion in 1980 to $195 trillion in 2007 (see the exhibit "An Explosion of World Financial Assets"). In fact, those assets have grown faster than the world economy, a phenomenon my colleagues and I at the McKinsey Global Institute call *financial deepening*. In 1980, the total value of global financial assets was roughly equal to world GDP; by the end of 2007, world financial depth, or the ratio of assets to GDP, was 356%. In addition, those assets are more intertwined than ever before. Today, one-third of owners of government bonds, one-fourth of equities owners, and one-fifth of people who own private debt securities are not from the country where the assets were issued. Even the individual investor who buys only U.S. stocks on U.S. exchanges is paying prices determined in global markets.

New private and public actors. Pension and insurance funds continue to be the major private investors, but other private and public players are increasing in importance. Hedge funds, private equity funds, central banks, sovereign wealth funds, government investment corporations, and government-controlled companies – all with different investment goals and strategies – are now prominent on the global landscape. Some of these are hybrids, acting in public and private spheres with both public and private funds. The recent crisis has highlighted the weaknesses of systems that regulate some actors but not others and that have no international reach. At a minimum, this patchwork approach encourages investors to operate in the realms with the fewest restrictions – a race to the regulatory bottom.

The specter – and the reality – of unregulated markets. Policy makers need to grasp how much financial activity is taking place outside traditional publicly traded and regulated markets – and to ensure adequate oversight. Several Western banks and other companies have recapitalized in 2008 not by selling shares or debt on public exchanges but by seeking large cash infusions from private investors. As debt markets froze up, banks unloaded lots of loans by selling them to private equity firms. And while the credit crisis cooled the leveraged buyout boom of early 2007, many private equity firms have adapted in 2008 by acquiring stakes in public companies.

...

We know that deeper financial markets, though unruly and unpredictable, have many benefits: They can provide broader access to capital for borrowers, increase opportunities for sharing risk, and spur economic growth. Of course, market turmoil can also cause great disruptions, such as the currency crises that led to devastating recessions in Asia during the late 1990s and shortly thereafter in Argentina – not to mention the U.S. subprime mortgage debacle, which continues to unfold. As policy makers look ahead, their goal should be to enable the world to enjoy the benefits of evolving global capital markets while managing the risks more effectively. But success depends on updating our thinking, not just our rules.

Diana Farrell (diana_farrell@mckinsey.com) is the director of the McKinsey Global Institute. She is based in San Francisco.

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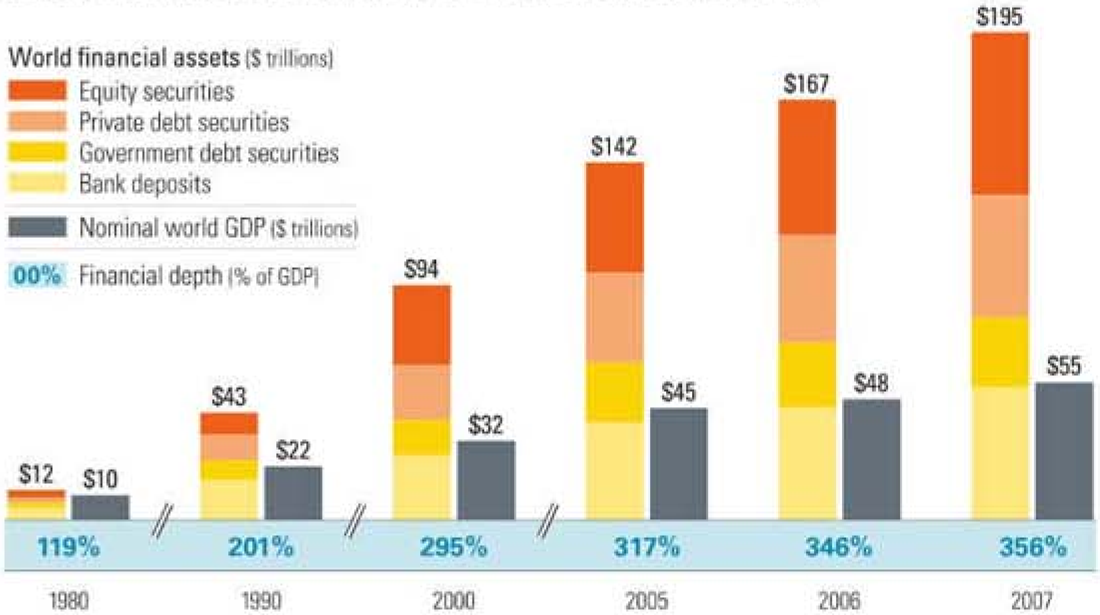
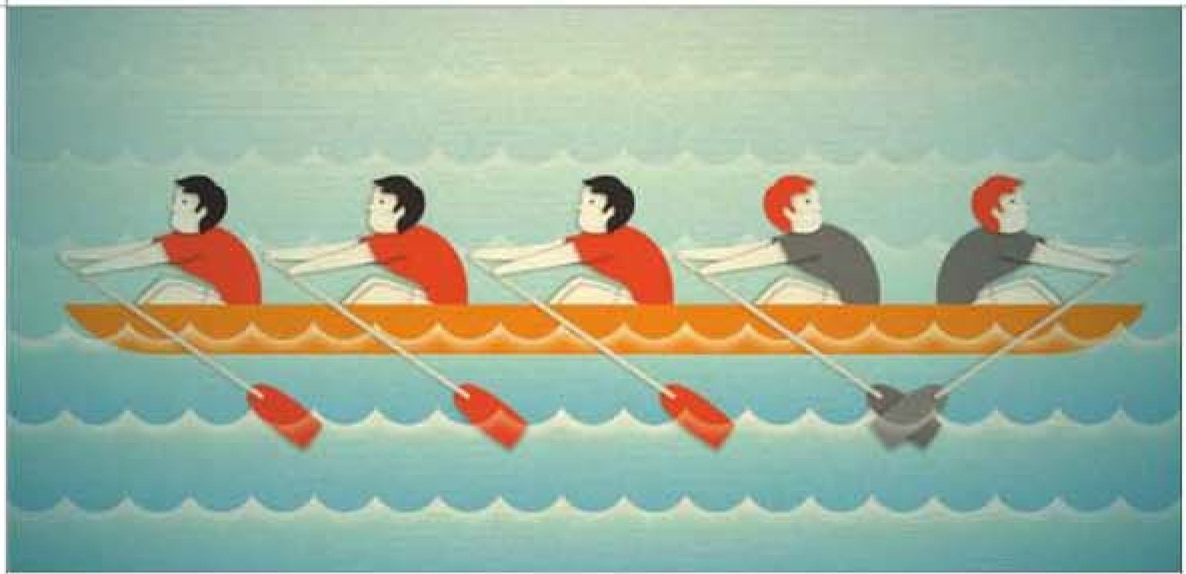
An Explosion of World Financial Assets

In the past three decades, world financial assets (left-hand bars) have grown much faster than world GDP (right-hand bars) – a phenomenon we call financial deepening. Assets have increased from 119% of GDP in 1980 to 356% in 2007.



Note: Asset and GDP figures have been rounded for simplicity. Financial depth percentages were calculated using nonrounded figures. Source: McKinsey Global Institute



TEAMS

Lessons from the Oxford and Cambridge Boat Race

by Mark de Rond

What lessons does a 180-year-old rowing match between two of the world's oldest universities hold for high-performance business teams? I spent seven months with the Cambridge University Boat Club as an organizational ethnographer, from the first day of training until the race, and witnessed coaches using a team-selection technique that business managers might profitably adapt.

Few environments test the ability of team members to balance competitive and cooperative instincts as well as the Oxford and Cambridge Boat Race does. The event now attracts a television audience of about 120 million worldwide yet remains more or less what it was when first staged in 1829: a distinctly *private* affair. Despite the public spectacle, celebrity treatment, and media circus, the race remains a profound, primal test of individual character in the context of a team. Indeed, the elite oarsmen who win coveted places in Cambridge's Blue Boat are those who compete most ruthlessly – away from the glare of the cameras – to secure a seat and then collaborate seamlessly with whichever crew members are ultimately selected. How do coaches identify these rare individuals?

Selecting the fastest eight from among 40 athletes is difficult, not least because the eight strongest are unlikely to make for the fastest combination. More important than sheer strength is a talent for coordinating with other crew members. One selection technique used by Cambridge is *seat racing*. Two four-man crews of similar strength and ability race each other under the same conditions over a straight 1,500-meter course. After the first race, two rowers, one from each crew, swap places; then the boats race each other again, with the aim of isolating the effect of a single rower on an entire crew. This exercise gives coaches a good indication of each oarsman's boat-moving ability – and of the relative speed of combinations of rowers. And so the process continues, each time with two different rowers swapping places. The nature of seat racing is such that rowers have no choice but to fluctuate between viewing a fellow rower first as a foe then as a friend, as they strive to cooperate flawlessly with someone who was a competitor just moments earlier.

Business teams aren't rowing crews, of course, but the same principles of competition and coordination apply. The next time you're trying to assemble a team, why not have two groups face off on a series of problem-solving challenges, swapping members between the groups until you arrive at an optimal combination? It may seem like a cumbersome exercise, but it could identify your strongest and most cooperative team. Not a bad way to get both oars in the water.

Mark de Rond (mejd3@cam.ac.uk) is on the faculty of Cambridge University's Judge Business School in Cambridge, England. He is the author of *The Last Amateurs: To Hell and Back with the Cambridge Boat Race Crew* (Icon Books, 2008).

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CLIMATE STRATEGY

Start Thinking About Carbon Assets – Now

by Alex Rau and Robert Toker

Many U.S. companies, particularly midsize firms, have been avoiding the carbon-credit markets. Delaying participation is understandable – the markets are predominantly overseas and are still evolving. But it's risky to wait until greenhouse gas regulations emerge from the U.S. Congress.

The opportunity cost of ignoring an asset that's sitting there waiting to be created is significant. And it's likely that competitors are already learning how to generate carbon credits; once U.S. regulations are finally in place, those companies will be way ahead. Perhaps most important, businesses need to understand how carbon markets will affect the competitive landscape and many investment decisions.

In the interest of getting apprehensive companies to think about greenhouse-gas-reduction assets, we present here a FAQ-format pocket guide that we developed in collaboration with Joanne Howard and Lindsey Bartlett of the British Consulate-General in Houston.

How much is a carbon credit worth?

The value of a carbon credit, a financial contract representing a verifiable annual reduction or avoidance of one metric ton of greenhouse gas emissions, currently ranges from a few dollars to more than $40, depending on various factors. The credit is issued by a regulatory organization – specifically, by a branch of the United Nations in countries that have signed the Kyoto Protocol, or by a nonprofit in voluntary carbon markets. In "Kyoto countries," companies surrender accumulated credits to regulators in order to comply with emissions limits. That will happen in the United States, too, once carbon-emission caps are established.

My company replaced its incandescent lightbulbs with compact fluorescents. Does that count as a carbon asset?

Sorry – probably not. For midsize companies (those with revenues up to $1 billion), such an initiative is likely to be too small to generate much value. Besides, the carbon savings from operational efficiency improvements are not yet well documented, and it's also not clear who would own the right to the carbon reduction – you or the power company. But don't give up. There are other carbon-related assets to consider.

What are the other initiatives my company can take?
Focus on the most common. Those include switching to less-carbon-intensive inputs, converting to cleaner-burning fuels, generating renewable energy, and capturing methane, industrial gases, or waste energy. A cement company could generate credits by replacing traditional feedstocks with fly ash from coal power plants. A brewery could capture methane produced during fermentation. Using well-established methodologies for turning those types of projects into carbon assets increases your likelihood of receiving credits, and it avoids the cost of developing new methodologies.

How much money are we talking about?
Tried-and-true approaches typically cost $50,000 to $150,000 per project in up-front development expenses for navigating the regulatory approval process and preparing contracts and other documentation, beyond any underlying capital expenses. Developing a new methodology could set you back an additional $50,000 to $200,000. In both cases, carbon-related transaction costs usually don't vary with the size of the project, so initiatives producing more credits end up being more lucrative. Recovering waste heat and gas at a steel factory, for instance, could generate 200,000 credits a year, worth up to $5 million.

Let's say I adopt a new, emission-friendly technology and package the resulting CO_2 reduction as a carbon credit, but then revert to my old polluting ways. What happens to the credit?

continued on page 30

The Best Advice I Ever Got

Linda Mason
Chairman and Founder, Bright Horizons Family Solutions

When my future husband, Roger Brown, and I graduated from the Yale School of Management in 1980, we postponed job offers in management consulting to run emergency programs in Cambodian refugee camps. The Vietnamese had recently invaded Cambodia and ousted the Khmer Rouge, and thousands of refugees fled to the Thai border. I managed a program for malnourished children, and we saw a lot of very ill babies. Yet, with food and basic medicine, most completely rebounded. Roger and I had always been moved to make a difference, but this experience gave us focus. If you intervene by age five, we realized, you can positively change the whole course of a child's life. Later, after a few years in management consulting, we went to Africa to become co-country directors in Sudan for Save the Children.

Our humanitarian work engaged us 24/7, and our only connection to the outside world was the occasional telex – so we gave absolutely no thought to long-term careers. But when we came back to the United States in 1986, we had to make some tough decisions. By then, Roger and I had met James Rouse, who cofounded the Rouse Company to turn blighted urban areas into vibrant public spaces. Jim became our mentor, and one weekend he invited us to his summer cabin on Chesapeake Bay. During one of our wonderful conversations, he said to me, "Linda, your passions don't have to be extracurricular. They can be central to your life. Unleash them, and you'll help other people unleash theirs."

Like most entrepreneurs, I'm loath to follow anyone's advice, but Jim's words immediately clicked. Millions of parents in the United States wanted and needed to work, but they had little access to affordable, high-quality child care. It was a national tragedy. We decided to put our passion for giving children the best possible start in life at the forefront of our careers – and at the core of a new company. (See Roger's February 2001 HBR article on Bright Horizons, "How We Built a Strong Company in a Weak Industry.")

Don't get me wrong – building this company was one long, hard slog. We faced a lot of skepticism, including from our financial backers, who had never seen a successful husband-and-wife team before. And when we struggled during our start-up years, some of our initial investors couldn't understand why we paid higher-than-average salaries or why we spent precious time founding a sister nonprofit organization to help children of the homeless. But putting our passions first – and backing them up with good financial numbers – gave us a real business advantage. Through this passion we helped create an entirely new sector: high-quality, workplace-based child care as a benefit for employees. During our IPO road show in 1997, we talked about the Bright Horizons mission first, before the financials – and witnessed rooms full of tired-looking asset managers, many of them parents of young children, snap right to attention.

Putting our passions first gave us a real business advantage.

Today Bright Horizons has more than 600 child care and early education centers, and we have transitioned to our second generation of mission-driven senior executives. Our annual leadership conference of over 1,000 managers feels like a cross between a political rally and a tent revival meeting. When you put passion first, you attract the right people, who all naturally head in the same direction.

– Interviewed by Daisy Wademan Dowling

Reprint F0809D

It goes away. The reduction underlying a carbon asset must be verified annually by an accredited auditor. Audits cost roughly $10,000.

If I don't want the financial risk of holding carbon credits, can I sell them and take the cash?
Yes. Credits are fully tradable. In the United States, where regulatory compliance isn't yet an issue, many companies with overseas operations don't need all the credits they generate abroad, so they sell them, usually to banks, brokers, or investment funds, which resell them to companies that need them for compliance.

Once I've figured out how to create and sell carbon credits, am I done?
Definitely not. Carbon reduction will be more than an operational or regulatory problem – it will become a strategic issue, because of the potential for asset creation and the need to examine every investment's long-term carbon ramifications. Emissions reductions will generate new revenue streams; emissions-intensive assets will lose value. The most successful companies will be those that quickly figure out carbon's strategic implications.

Alex Rau (alex.rau@climatewedge.com) is a San Francisco–based principal at Climate Wedge, a carbon-finance advisory firm. **Robert Toker** (rob.toker@fco.gov.uk) is the head of UK Trade and Investment for Texas and Florida; he is based at the office of the British Consulate-General in Houston.

Reprint F0809C

COLLABORATION

Prevent Disasters in Design Outsourcing

by Jason Amaral and Geoffrey Parker

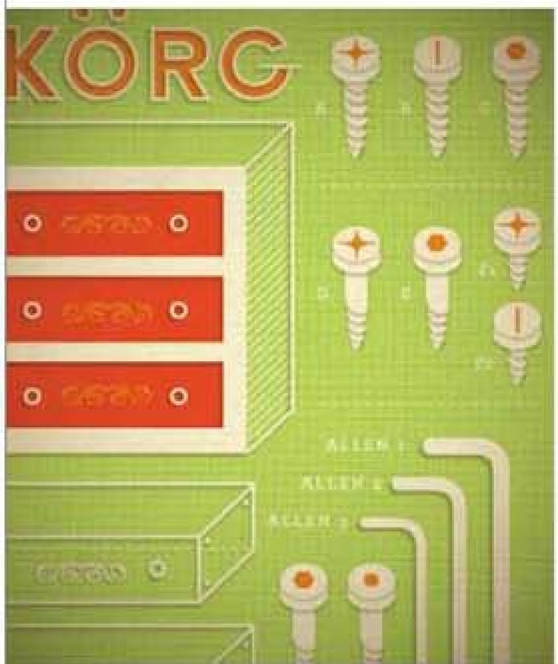
Firms that pursue product platform strategies – by leveraging a common set of development, production, and support resources – have been able to outmaneuver competitors by cost-effectively delivering a greater variety of distinctive products. Having succeeded in outsourcing manufacturing, these firms are now also working to outsource the *design* of new platform-based products.

Unfortunately, design outsourcing often fails to generate desired cost savings and can even tear profitable platforms apart. Of the nearly 100 outsourced design projects we have studied at *Fortune* 1,000 companies, approximately one-third worked seamlessly, owing to modular designs, effective management, or both. The other two-thirds struggled or failed, for three main reasons:

Misaligned objectives. The goals of a company and its design service providers – even the aims of teams within that organization – often don't match. For example, we worked with two teams at a company that was planning a new line of computing hardware products. The "platform team," which was developing a new product platform, focused on delivering advanced functionality and growing long-term revenue. At the same time, a separate "derivative team" planned to reuse part of the new platform to create a derivative product that would generate short-term revenue. The problem was that each team relied on a different external service provider for the detailed design and manufacturing of their respective products, and each provider focused on maximizing its own profitability. Because of inconsistent objectives, the two internal and two external teams had trouble working together, and the design schedule for both products slipped. Ultimately, the plan to achieve efficiency through a shared platform was abandoned.

Before development begins, executives from internal and external teams involved in platform-based design projects must carefully align the teams' incentives. Still, disagreements often arise, so it's wise to use contingent contracts that anticipate uncertainty and provide a framework for renegotiation.

Unanticipated rivalry. Executing platform projects with multiple partners often forces fierce rivals to collaborate. One company we worked with planned to adapt more than 20 subassemblies from an existing platform for the design of a new product. However, the company's design and manufacturing partner pushed to revamp those subassemblies because, it argued, they would not work in the new design. Although the argument had some merit, the provider was motivated primarily by a desire not to collaborate with, or purchase from, the subassemblies' supplier – a major competitor. The



platform owner eventually conceded and never realized its anticipated cost savings.

Firms outsourcing platform-product designs must anticipate that rivals will be reluctant to source from one another. To head off problems, the lead firm must not only create incentives for short-term collaboration, but also award future business based on demonstrated cooperation.

Poor version control. Firms always face the challenge of managing product-specification changes, but those that outsource design confront a particularly difficult problem. Consider the company that had a partner design a casing to use in a family of consumer computing products. The company wanted a consistent look on the retail shelf, plus the ability to rebalance inventory and share tooling

continued on page 34

Conversation

Entrepreneur **Thorkil Sonne** on what you can learn from employees with autism

Four years ago Thorkil Sonne realized that his young autistic son possessed an extraordinary memory and a remarkable eye for detail. Those traits are prevalent among people with autism, and Sonne saw an opportunity to help individuals with the disorder find productive employment. As the technical director of a Danish software venture, he knew those qualities were critical in software testers. So he went out on his own and launched Specialisterne, a Copenhagen-based software-testing firm that now has 51 employees, including 37 with autism, and revenues of $2 million.

You started your company to improve the lives of people with autism. Why not just create a nonprofit focused on research or job training?
I wanted to do more than just provide a sheltered workplace for people with a disability. My goal is to create opportunities for people with autism on an international scale. You might find money to support sheltered working environments in Scandinavia but not in Poland or Spain or Brazil. To extend its reach, our organization needs the kind of funding that only a profit-making venture can generate. It must succeed on market terms.

Is it hard to reconcile two missions – serving customers and aiding people with a disability?
We're constantly asked whether we support customers or a cause. We want to do both, of course, but we're always fighting against the suspicion that we're just a charity. Our corporate social responsibility profile might open doors with CEOs, but executives in charge of software testing aren't evaluated on CSR, only on getting the most for the company's money. To wipe away their suspicions, we must exceed performance expectations every time.

All our business comes from the private sector. Because Denmark has no tradition of social enterprises, the government doesn't earmark contracts for companies like ours or give them tax breaks. We have to compete head on.

How does managing autistic workers differ from managing other people?
Most of our consultants with autism have a mild form called Asperger's and are high functioning. Still, because they're often hypersensitive to noise, they can be uncomfortable in open-concept office spaces without doors or walls. They also have trouble working in teams and understanding social cues, such as gestures, facial expressions, and tone of voice. You have to be precise and direct with them, be very specific about your expectations, and avoid sarcasm and nonverbal communication. Though we expect employees to do their jobs well, we don't ask them to excel socially or to interact all the time with others. We just find them the right role. That takes tremendous stress off them. I think normality is whatever the majority decides it will be, and in our company people with autism are the norm.

What about the relationships between customers and your autistic consultants?
About 70% of our work is done at customer sites. The customer appoints a contact – someone who's good with special people, who will select the right tasks and a comfortable place for them. We also give our clients a short introduction to autism and to our firm's unique culture. After working with our consultants, the customers start being more direct with their own colleagues and stating their expectations more clearly. That's helped them improve in an area that many companies struggle with.

In what other ways might firms benefit by adopting your techniques for managing autistic employees?
Companies sometimes unknowingly employ autistic people because the condition often goes undiagnosed. But people with autism aren't the only employees who don't thrive in open offices or in the traditional management system, with its emphasis on teamwork and unclear instructions like "Figure out on your own how to deal with this."

You have to get the most from employees, especially when labor is scarce. Our sector is crying out for manpower, but Specialisterne has many job seekers knocking on the door. The key is to find situations that fit employees' personalities and ambitions, not force everybody into one mold. That just causes stress, and workplaces already produce too much of that.

– Susan Donovan

Reprint F0809F


It's pondering dinner.
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across products. Although detailed schematics were shared in that way, two different suppliers manufactured the casings. Unfortunately, the designs got out of sync once they left the hands of the original design partner. One manufacturing partner made several, supposedly minor changes to satisfy electromagnetic emissions regulations, and another used an outdated version. The problems did not surface until much time and money had been invested in precision tooling. In addition to the marketing blemish of having mismatched designs, the company lost sales when unexpectedly strong demand for one of the products outstripped the available casing capacity. The two manufacturing partners simply could not share their inventory or their production capabilities.

To outsource design and then just assume that the specifics will take care of themselves is a recipe for disaster. Brand owners must retain enough program management capability to enforce processes, communicate with all parties, and keep track of critical details.

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Reprint F0809E

TOOL

Put Your Data to Work in the Marketplace

by Thomas C. Redman

Almost all companies grossly underutilize their data assets. Even firms that mine their data for strategic insights barely scratch the surface. Yet, the marketplace value of data is huge and growing. Consider the capital-intensive container-shipping industry. By some estimates, half the value of the delivery of a container resides in the associated data. Origin data, for example, help speed containers through customs and security, and timetables for unloading ships facilitate just-in-time truck and rail scheduling.

In my work with and research on hundreds of companies across multiple industries, I've identified nine distinct strategies that organizations can employ to put their data to work in their marketplaces. As you use the table below to identify opportunities for creating new value from your data, ask the following questions:

- What data do we own or have access to that could be better leveraged using each strategy?
- Which of these data are of sufficient quality to withstand market scrutiny?
- Which of these data will others pay for?
- Which of the nine strategies is the best way to bring these data to market?

Using the screening tool in this way helps companies discover quantities of data that are uniquely their own and explore new ways to exploit them.

Thomas C. Redman (tomredman@dataqualitysolutions.com) is the president of Navesink Consulting Group in Little Silver, New Jersey. He is the author of *Data Driven: Profiting from Your Most Important Business Asset* (Harvard Business Press, 2008).

Reprint F0809G

Nine Strategies to Bring Data to Market

Each numbered strategy below is accompanied by an example (in italics) of how it might be – or already is being – executed.

1 Provide new content: Sell or license new, richer, or more-targeted data.
A personalized diet: A meal-by-meal program that would tailor menus to each customer's sex, age, health status, exercise routine, travel schedule, and wellness goals

2 Repackage: Filter, synthesize, and reformat data created by others.
Online custom reports: Customized, just-in-time data distilled from multiple sources and sent directly to a customer's PDA

3 Informationalize: Outfit existing offerings to enable them to create and deliver useful data.
An instrument-equipped hospital gown: Heart-rate and other monitoring devices integrated into a gown that could transmit real-time patient data to hospital staff

4 Unbundle: Extract data from existing products and sell those data separately.
Unbundled equity trading: Separating investment advice from trade execution in order to allow advisers to focus on and charge separately for the advice

5 Exploit asymmetries: Use superior access to or understanding of data to leverage perceived differences in the value of products or services.
Hedge fund management: The use of data-derived insights by hedge fund managers to create opportunities for arbitrage

6 Rectify asymmetries: Provide data to the less-informed party in a transaction in order to level the playing field.
Consumer education: Unbiased product performance, quality, and price comparisons, like those Consumer Reports *offers, to enable consumers to make better-informed buying decisions*

7 Provide identifiers: Create unique labels for households, retail outlets, and products to help businesses find what and whom they are looking for.
An expanded securities-numbering system: An international system, modeled after Standard & Poor's CUSIP system for U.S. securities, to make all securities worldwide easily distinguishable

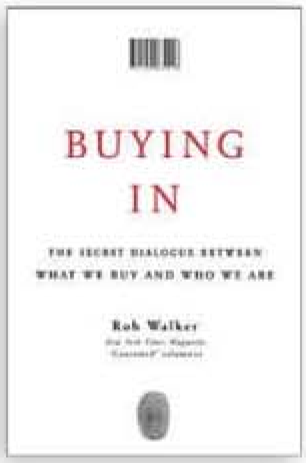
8 Infomediate: Make it easier for consumers to find the data they need.
Webpage ranking: A proprietary ranking method, like that used by Google, that delivers highly relevant search results

9 Mine data and conduct analytics: Sift data to gain an understanding of customer behavior, spot product trends, and more.
Movie rental behavior: Recommending films to customers based on their and others' previous rental choices, as Netflix does

Reviews

Buying In
The Secret Dialogue Between What We Buy and Who We Are
Rob Walker
(Random House, 2008)

Toyota's efforts to market its new Scion brand a few years back seemed to be aimed at keeping the cars out of the public eye. Instead of buying ads on television or in glossy print venues, the company loaned a Scion to an editor of *Art Prostitute*, a tiny-circulation zine based in Dallas, and planted cars at graffiti parties in New York. According to Rob Walker, writer of the *New York Times Magazine's* "Consumed" column, marketers took pains to show off the Scion in cool contexts and to prevent potential buyers from seeing the brand touted in the wrong places – *Time, Vanity Fair*, or even the teen hit TV show *The O.C.* (not cool enough).



Toyota, famous for its production expertise, had learned that when marketing to Generation Y, a brand's "meaning" is even more critical than a product's functionality. But the company had figured something else out, too: Young consumers don't reject this kind of pitch-free guerrilla marketing even as it threatens to saturate their lives. In fact, they seem to welcome it. At a New York event sponsored by Scion, dance-club goers read the latest issue of a Scion magazine and picked up the *Scion CD Sampler* that was offered for free. Contrary to experts' views of Gen Y, these potential buyers showed no signs of being immune to marketing.

The contrast between buyers' evident willingness to respond to new forms of underground branding and the received wisdom about their resistance to marketing was the impetus for Walker's book, which draws on reporting he did for the *New York Times Magazine, Slate*, and other publications. He writes that he has come to see the myth of the ad-impervious "new consumer" as erroneous and as counterproductive for marketers. Brand managers can indeed recruit young consumers as eager participants in marketing strategies, but they have to go about it the right way: Emphasize meaning first, functionality second; remember that people simultaneously want to feel like individuals and be part of something bigger than themselves; and understand that successful brands often build a mass audience by cobbling together smaller ones.

It's enlightening and fun to follow Walker's metamorphosis from punk-influenced Texas teenager to fascinated explorer of U.S. consumer marketing. He has a flair for branding: The book bristles with his own coinages, such as "murketing," his term for the sometimes murky methods of guerrilla marketing. He also has an affinity for people who seek cultural alternatives, such as the tens of thousands of do-it-yourself artisan-entrepreneurs who sell their handmade stuff online and at fairs with names like the Urban Craft Uprising. Walker's concluding examination of these artisans gives the book an unexpectedly flimsy ending, because he doesn't tie their rejection of commercialism to his main point about guerrilla marketing, except to suggest that the movement might somehow prod mainstream consumers to think in new ways about material culture. Nevertheless, there's plenty of substance here, and plenty for marketers to ponder.

– Andrew O'Connell

The Necessary Revolution: How Individuals and Organizations Are Working Together to Create a Sustainable World
Peter Senge et al.
(Doubleday, 2008)

Peter Senge pioneered studies of organizational learning, and now he applies those insights to ecological sustainability. Much of this book offers familiar arguments and examples to show why companies should become greener. The interesting parts take the reader inside organizations where people transcended inertia and brought about change. Coca-Cola's attempts to reduce water use, for example, got stuck in internal politics until the company held workshops where local bottlers learned how their plants interacted with ecosystems. While environmentalists within companies might feel more heroic in the role of aggressive advocacy, Senge and his coauthors argue persuasively that those people will make greater inroads with colleagues by adopting a spirit of inquiry.

Africa Rising: How 900 Million Consumers Offer More Than You Think
Vijay Mahajan
(Wharton School Publishing, 2008)

With the rise of China and India now old news, investors' attention is shifting to southeast Asia and South America. "Why not Africa?" asks Mahajan, a former dean of the Indian School of Business who teaches in the United States. In a fast-paced but comprehensive survey of the continent, he highlights opportunities beyond the bottom of the economic pyramid, especially in the sizable African middle class, which he compares with India's. Mahajan argues that despite poor infrastructure, entrenched corruption, and continental fragmentation, Africa's uniquely high birth rate has tipped the risk/reward balance enough to make it the market of the future. Unlike India and China, he acknowledges, most African countries have made little educational and political progress, but he hopes that greater entrepreneurism will force change.

– John T. Landry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HBR Case Study

BY STEPHEN BROWN

COMMENTARY BY DANIEL H. PINK,
JOHN CHUANG,
RICHARD PHELPS, AND
CHARLIE WRENCH

Don't Try This Offshore

The ultrasophisticated consultants at Serendipity Associates are sure their creative genius is safe from low-cost rivals. But is it?

EEEEEEEEEEEEE. THE BRAKING Boeing had barely ceased its banshee wail before Barton Brady's cell phone piped up. "Viva Las Vegas" – the king of ring tones – belted out of its tiny speaker just as the flight attendant announced their arrival at Las Vegas's McCarran International Airport. Brady glanced around, acknowledging the amused appreciation of his fellow first-class passengers, whose own phones soon joined in to create a cacophonous chorus.

Brady unzipped a rhinestone smile to give his voice its trademark winning tone. "Shoot," he sparkled, working the smirk as if his life depended on it.

"Bang, bang. You're dead." It was his colleague Yasmin Buonarroti, Serendipity Associates' hard-nosed, hardheaded, hard-boiled, hardball pitcher-in-chief. Brady relaxed his jaw. He'd smiled practically nonstop for 72 hours, throughout the star-studded conference in Germany he'd attended. Brady was a salesman to his back teeth and well accustomed to serious incisor action, but even he had his limits.

"Hey," he said. "We just touched down. Good to be home."

"Anything interesting in Nuremberg?" Buonarroti inquired.

"It was completely crazy," Brady laughed, despite his exhaustion. "The conference began with a fistfight, continued with a full-blown riot, and ended up –"

"Cool," Buonarroti cut in.

Brady could detect the tension in his colleague's voice. "What have I missed?" he ventured.

"Pixar said no to Rémy's Ratiocinator," Buonarroti said flatly. "And the Dan Brown assignment is on hold. I'm telling you – there's something going on. Rosenkreutz reckons we're being underbid."

Brady frowned. Pixar and Dan Brown were two of Serendipity's long-standing clients – clients who appreciated the power of language, the worth of words. The price-war theory didn't make sense to Brady. The management-metaphor boutique he headed was the hottest of hot shops, and the rarefied service it dispensed was as far from a commodity as Saks was from Sears. Serendipity Associates had a lot of things to worry about – talent retention, client confidentiality, and rustling up sizzling similes, snappy sound bites, and synapse-seizing slogans – but margin pressure wasn't one of them.

"I'll grab a cab to the office," he said.

"Rosenkreutz is already outside baggage claim, waiting to pick you up."

HBR's cases, which are fictional, present common managerial dilemmas and offer concrete solutions from experts.

Daniel Vasconcellos

As he flicked the phone shut, Brady couldn't help noting, as he always did, its sleek lines and perfect heft. The Vertu Vainglory was the most coveted device on the planet, with good reason. There was no mistaking the Frank Anderson Smith touch. Who knew where the thing was assembled – probably somewhere in Asia. But the design? Definitely Californian.

Badder than Badinage

On any ordinary day, Brady relished striding through the marbled, palm-peppered halls of McCarran International, grabbing glimpses of his reflection in its mirrored surfaces. He reveled in the ringing ranks of slots, the gaudy ads for glitzy attractions, the pheromonic, phantasmagoric atmosphere of winning big. It may have been tacky to the tenth degree, but he loved the smell of gaming in the morning.

Unfortunately, this was not shaping up to be an ordinary day. Ignoring the phantasmarama, he hurried toward the Russell Road entrance. Sure enough, he spotted Rosenkreutz pacing by the curb. An SA mainstay, Chas Rosenkreutz was a Vegas original. He styled himself a bagman, bruiser, and big-time bad guy, a consigliere's consigliere. No surprise: Rosenkreutz specialized in competitive intelligence. As he loved to remind people, he'd been on the front lines of some of the biggest marketing battles in recent memory. If decorations were awarded for such action, he'd have collected the New Coke Cross, the Segway Star, and the Ronald McDonald Medal of Honor. He'd even done a tour of duty in 'Nam. Pan Am, that is.

Rosenkreutz was not a handsome man. He had a face like a Botoxed warthog's. Worse, he was wearing a shiny Valentino suit with lapels the size of stealth fighters. As Brady approached, Rosenkreutz shrugged his shoulders in that bada-boom manner, placed a protective palm across his double-breasted midriff, and nodded curtly to his boss.

"Whadja find out, Chas?" Brady asked apprehensively. "Is the Danster really ditching us?" Rosenkreutz's cocked eyebrow reminded Brady to be extra careful. Espionage was rampant in the management-metaphor business and eavesdropping an everyday occurrence. In a world where words were bearer bonds and coinages were coinage, a good-to-great metaphor was worth its weight in *Fortune* 500 gold, particularly if it was built to last.

Sliding into a saber-toothed SUV, Brady shifted deftly into SA's code-word protocol. The corporate equivalent of Defcon One to Defcon Five, it used the names of local casinos to signal the threat level. "Tropicana" flagged a little local difficulty, "MGM Grand" meant a fairly major problem, "Bellagio" translated into very, very big trouble, and "Caesars" was a raging inferno at SA's Fremont Street HQ. He rephrased his question. "How are things on the Strip?"

"Serious, boss."

"Caesars serious?"

"Worse. We're in a Wynn-Wynn situation."

> SA had always worried about sound bites and slogans – not price wars.

Sentenced to Death

The pitcher-in-chief was waiting in the boardroom when Brady arrived. Surrounded by Styrofoam cups and half-eaten doughnuts, she was hunched over a Sony Vaio laptop, the one with the built-in fire extinguisher. She looked up as Brady strode in.

"Welcome home, handsome."

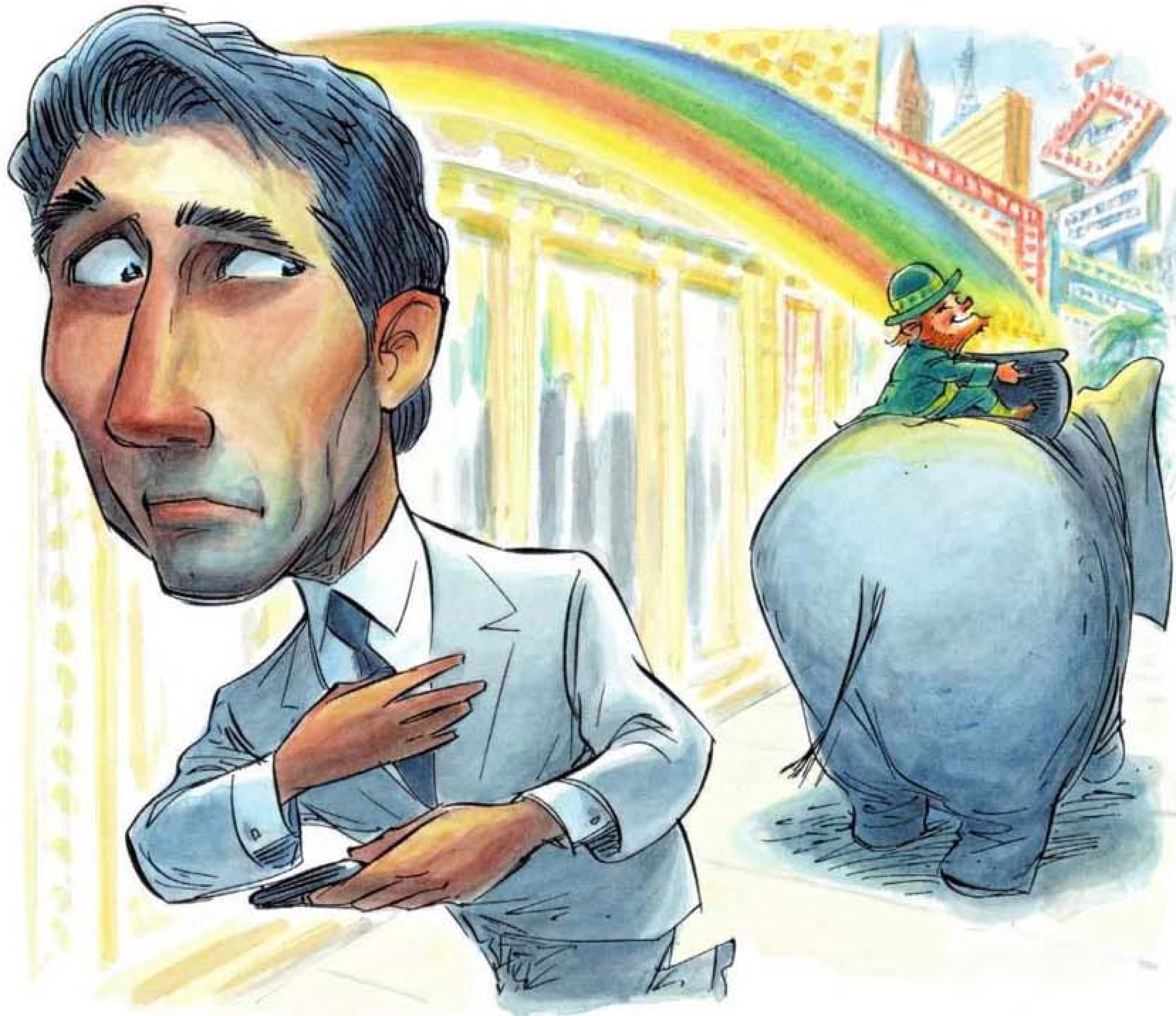
"Good to see you, Babearroti. Something bothering you there?"

Buonarroti spun her Sony around to show him – albeit with difficulty because of its big red canister of USB foam. "At least four people here at SA have already been sent links to this. By their *clients*. Check it out."

The superbright screen was filled with a blog post in a format Brady knew well: It was GoneWithTheWindows.com, a sulfurous site dedicated to exposing corporate shenanigans and mocking the business world in general. Brady spotted a spoof of SA's logo and realized his company was the target du jour. The post was by the site's snarkiest blogger, Rhetorical Butler, and titled "Mixed Metaphormatosis."

Butler started out tamely enough, reminding his audience that the aptly named Serendipity Associates had had the good fortune to be founded in the mid-1990s, just as management teams began relying on consultancies for creative thought leadership. Soon, its offerings had evolved from matrices and frameworks to acronyms and analogies (and even, for a brief time, anagrams – it was SA, for example, that had famously reshuffled "Michael Porter" into "Polite Charmer" and "Rather Polemic," although, sadly, it failed to find a market for the discovery). Since the turn of the millennium, it had moved into management metaphors. According to Butler, SA had become a "postindustrial Ponderosa, breeding ideas, herding narratives, and rounding up rhetorical devices for the management rodeo, where they compete against purple cows, black swans, scampering squirrels, anguished penguins, indignant mice, disembodied long tails, fluffy-bunny customer care programs, the seven secrets of silverback gorilla leadership, and the rest of the benighted executive-education bestiary." Luckily for SA, he added, "anthropomorphic allusions don't live long in corner office captivity; thus, the demand for its free-range figures of speech is incessant."

The malevolent motormouse did pay the firm some grudging respect: "If metaphors are the bits, the bytes, and the binary code of the imagination – if metaphor is the new math – then Brady



and Buonarroti are its Fermat and Fibonacci." But he concluded with a chilling call to action. There was a serious oversupply of management metaphors, and a culling was called for, Butler wrote. "Metaphors look cute, but they are pests, weeds, the kudzu of commerce, the cane toads of thought. It's time to pick up the red phone and declare war – and Serendipity Associates is ground zero."

Brady grimaced. It would have been easy to mock Butler's penchant for the very mixed metaphors he disparaged. But Brady knew that mixing metaphors was a surefire way of attracting attention. Figurative mash-ups might be aesthetically unappealing, but they could have a major-league impact. Judging by the feedback pouring in, Rhetorical Butler's rabble-rousing rant was already triggering Richter-scale ripples throughout the management community. It was beginning to look as though SA's house was sitting on dangerously shifting sands. All its eggs were in one basket, and the basket was holed below the waterline.

Mixing metaphors was contagious, dammit.

"We need to respond, don't we?" Buonarroti asked. "We can't just ignore this, can we?"

Brady had rarely heard his colleague sound so tentative. Buonarroti had the drive of a dump truck, plus the chassis, but even dump trucks have their tipping points. "We'll respond," he assured her. "But let's be careful. This reminds me of the metaphor war of 1999."

"Me, too," she whispered with a shudder. They looked at each other. Both knew only luck had saved them the last time.

The Pluperfect Storm

The great shakeout of 1999 had begun innocently enough, when Peter Tompkins, the evangelical management guru behind the 1980s blockbuster *In Pursuit of Transcendence,* wrote an unusually thoughtful article. In it, the man who'd given the world such timeless slogans as Stick to the Spaghetti, Betty and Close to the Customer's Pocketbook outlined the three stages in the evolution of management phrasemaking: *ornamental,* when buzzwords were considered vulgar add-ons to research-based prose; *elemental,* when the realization dawned that figurative thinking was not only unavoidable but invaluable; and *detrimental,* when every wannabe management swami was selling a verminous collection of moth-eaten, fly-blown, rat-tailed, cheese-please concepts.

Tompkins's critique, unfortunately, coincided with the arrival of a major new competitive threat in SA's business. Fashionably late as usual, accountancy firms, full-service advertising agencies, and the upper crust of the pie-chart contingent had decided it was time to get a slice of the strategic-rhetoric action. Competition turned cutthroat at the very moment when boutiques like Serendipity Associates were on their collective back foot. If it hadn't been for SA's sideline in TLAs (three-letter acronyms), which allowed it to offer a different CVP to MNCs, its AOK organization would have been in VDS.

The day was saved by the arrival of a Hannibal in the shape of Harvard's Bethany Kando, whose troupe of giant dancing elephants cut the threat off at the pass. Elephants are the bulwarks of the strategic-rhetoric industry; they invariably shore up confidence. Just as Wall Street turns to gold in times of crisis, consultants revert to tusker tropes when the metaphor market wobbles. True, these turns invariably lead to the unedifying sight of blind men palpating bemused pachyderms. Brady sometimes wondered what would happen if the sightless seven groped an ornery hippo in error. The carnage would be indescribable. There might be a reality TV show in it, though.

Trope Surge

Brady's musings were interrupted by the rumbling arrival of Rosenkreutz, back from a reconnaissance mission around the neighborhood. Brady looked up hopefully, knowing that Rosenkreutz's ear to the ground, nose for a story, and eye for the main chance were a formidable combination. Elephant Mannish, yes, but formidable all the same.

"What's the word on the street?" Brady asked.

"Fire lane?" Buonarroti suggested anxiously. "Left only? Merge?" When stressed, she was inclined to take every metaphorical expression literally, which was a bit of a bummer in SA's business. Once, when Rosenkreutz yelled at her for not having a Chinese wall between two beverage-industry account teams, she acidly pointed out that the office decor was Scandinavian. Her reaction was even stronger when a strategic partnership was going nowhere and Rosenkreutz suggested some opening of the kimono. It annoyed Brady, frankly. At times like this, he needed lateral, not literal, thinking.

Rosenkreutz ignored her interruption. "It's Hank Wittgenstein," he announced. "That's who's been poaching our clients."

Brady had never heard of him. "Who?"

"Wittgenstein!" Buonarroti spat, determined to show that she, too, was streetwise. "You know him, Barton – he runs that low-rent simile operation outta Reno, Tropes R Us. Calls himself the categorical-imperative killer. Claims he's a rogue philosopher."

"A rogue *philosopher?*" Brady repeated with asperity. "What's with the whole rogue thing these days? There are rogue traders, rogue Realtors, rogue economists, for goodness sakes. What's next – rogue geologists? Rogue librarians? Rogue veterinar – "

Buonarroti cut him off. "He comes at language from a logistician's standpoint. It's all high-volume rhetoric, no slow movers. His turns of phrase are three times the industry average. He's Oxford educated, apparently."

"Ah, that explains his focus on low-rent stuff," Brady the Yalie said with supercilious satisfaction. "He's just a bottom-line bottom feeder, someone whose figures don't add up."

"Whereof one cannot speak," Rosenkreutz added darkly. "Thereof one must be silent." He paused for effect. "The word on the street is that Wittgenstein's moving up the stack...and offshoring his production. He'll soon be flooding the market with high-quality, low-cost metaphors."

"But they're bound to be second-rate conceits," Buonarroti said in a measured tone that betrayed her concern. "Look, every company we know has shifted activity to India, China, Thailand, Vietnam, and so forth. But it's all left-brain work, like manufacturing and information processing. When it comes to right-brain strengths like conceptualization, imagination, and metaphor making, it's a different story. You can't just ship that from some gimcrack factory on the festering outskirts of Sweatshop City."

"Yasmin, you know I agree with you, but let's think about this for a minute," Brady cautioned, as his inner bulldog growled a warning. "All Wittgenstein has to do is destabilize a market that's already twitchy, thanks to Butler's trash-talking. If Tropes R Us scores a few major projects, intellectual offshoring becomes a reality. And if it succeeds, the entire management consultancy industry could be Y-K-W, W-A-P."

Rosenkreutz raised a ragged eyebrow. "Y-K-W?"

"You know where," Brady explained.

"W-A-P?"

"Without a paddle."

As Buonarroti continued to remonstrate, rehearsing the differences between good metaphors and great metaphors, between long tails and tall tales, between tipping points and tripping points, Brady rubbed his rugged chin thoughtfully. At Yale, he'd specialized in postcolonial theory; he knew that the most imaginative writing in the English language came from places that had once suffered under the yoke of empire: India, Canada, Australia, South Africa, and – in the days of Poe, Stowe, Melville, and Emerson – America itself. He also knew that if U.S. cultural hegemony continued to wane, as it had been doing in recent years, the country's creative industries could prove susceptible to outsourcing, downsizing, and undercutting. He was well aware that in the real world IP stood for "impossible to police." What if Wittgenstein's move was a whisper on the wind? He raised his head and looked into Rosenkreutz's porcine eyes. "Where's he moving his operations, anyway? Do you know?"

Rosenkreutz grunted the answer: "Ireland."

The Pluck of the Irish

Clutching his chest, Brady gasped at the heinous implications. The most creative right brains on the planet were about to eat SA's lunch. The country that had constructed America was plotting its deconstruction. Suddenly, Brady had to confront his worst fear, hair loss aside: that the much-vaunted creative economy might not be the salvation of his livelihood, his business, and his country.

Even Buonarroti looked spooked.

With an exaggerated effort, Brady pushed his chair away from the table, stood slowly, and, after checking it carefully for creases, slipped on his immaculate Zegna jacket. "Look, guys – I'm going for a walk. I'll be back…at some point."

Buonarroti rolled her eyes. "We don't have much time, Bart. We should reply to the Butler blog before it builds momentum."

"I need an hour or so. I'm sorry, but I have to think." Brady headed toward the door and out into the heat of the day. As he made his way along the trash-strewn Strip, past topless shows of bottomless depravity, he wondered what on earth was happening to America. Once the world's workshop, it had turned into the world's wordshop. It had become the Willy Loman of the global economy, riding on a simile and a shoeshine. Having just returned from Germany, where manufacturing was still a force to be reckoned with, he feared that America's ever increasing reliance on right-brain-led innovation was a chimera, a national rationalization, a head-in-the-quicksand scenario, a one-way ticket to postindustrial Palukaville. Would it were otherwise, but it would take more than Pixar, Dan Brown, and the delights of Las Vegas Boulevard to turn the country around. The Mirage was aptly named.

Brady glanced up at Caesars's JumboTron: Breaking news…new hotel-casino for Strip…Winthrop Inc. announces Shining City…more later…

Are Brady's worst fears justified? Four commentators offer expert advice.

No relation to Dan, **Stephen Brown** *writes management conspiracy thrillers. This case takes place in the brief interval between his* Agents and Dealers *and* The Marketing Code *(both published by Marshall Cavendish). Further details, and free downloadable chapters, are available on the author's website: www.sfxbrown.com.*

Daniel H. Pink *(dp@danpink.com) is an author and consultant based in Washington, DC. His books include* A Whole New Mind: Why Right-Brainers Will Rule the Future *(Riverhead, 2006),* Free Agent Nation: The Future of Working For Yourself *(Warner Books, 2002), and* The Adventures of Johnny Bunko: The Last Career Guide You'll Ever Need *(Riverhead, 2008), the first American business book in the Japanese comic format known as manga.*

AS ZANY as this story is, it raises all kinds of serious questions: Does the United States (or Ireland, or any country) hold a sustainable advantage in a conceptual economy? Are high-end knowledge workers immune to globalization's wage pressures and job displacements? How can a creativity-based business like Serendipity Associates keep its edge?

Start with the last of those questions. SA must do what it has always done: Move to higher ground. We're told about its evolution so far, from matrices to analogies to metaphors, and we infer that its profit margins have expanded along the way. Barton Brady's new challenge is that the high ground has gotten even higher and the urgency of reaching it even greater. Faced with rising ranks of overseas knowledge workers and powerful advances in software, SA must continue to differentiate itself on the basis of hard-to-offshore and hard-to-automate right-brain abilities: design, narrative, empathy, synthesis, and the iteration of irresistible new offerings for its clients.

This approach requires not simply a sound strategy but also a large leap of faith. Growing up in Ohio in the 1970s, as the Rust Belt was rusting, I remember my own father (a smart guy) dismissing the notion that the United States could or should make the transition to a service economy. "We can't have an economy where everyone is running around giving one another haircuts," he said. "That will never work." Alas, neither he nor anyone envisioned social media consultants or personal trainers or search engine optimizers. Although it's tempting to see what look like natural barriers to progress, the present often blinkers our vision. Does a new higher ground exist for SA and for America? I'd bet my mortgage on it. What precisely does it look like? I don't know. But higher is the direction successful companies and thriving nations have always moved, and nothing indicates that this historical pattern has been interrupted or repealed.

> A country's advantage comes from its choices, not from the DNA of its people.

What might steer Brady in the wrong direction, though, is his belief that certain nations hold deep-seated (call them quasi-genetic) advantages when it comes to conceptual and inventive abilities – and that we ought to fear the Irish, in particular. Sometimes research seems to confirm such beliefs. (For example, a report issued by the Irish Management Institute found that in Myers-Briggs personality testing the Irish score significantly higher than Americans or Brits on intuition.) As much as I admire the Celtic Tiger's economic growth, I don't think it had to do with DNA.

To the extent that any nation has an advantage, it comes from the choices the country makes, not its citizens' inborn traits. The United States' edge comes from laws, institutions, and cultural attitudes that encourage and reward risk taking. Strong property rights protect investments and enable future transactions, and bankruptcy laws are built, at least in part, around the notion of a fresh start, sometimes to the detriment of creditors. Great universities give young innovators a place to learn. Robust capital markets allow them to finance their ideas.

At the same time, the United States puts its advantage at risk through its approach to elementary and secondary education. Think about it: If you were trying to prepare students for an economy that prizes novelty, nuance, and customization, would you have schools stress routines, right answers, and standardization? No. You might opt for a system more like Finland's, in which standardized testing is minimal, students and teachers enjoy huge amounts of autonomy, and the focus is on real-world problem solving, not schoolbook exercises. For Brady, this suggests some perhaps counterintuitive advice: Don't fear the Irish, but keep your eye on those Finns. For the rest of us, the point is broader. If we want our standard of living to continue to rise – at the personal level or the national level – we need to mine the right side of our brains.

Wendy Wray

Creativity hot spots in the United States are threatened by current immigration policy.

John Chuang *(jchuang@aquent.com) is the chief executive officer and cofounder of Aquent, a Boston-based firm that provides marketing and creative talent to companies around the world.*

IT'S INTERESTING: Creative work has a long history of being "outsourced," but we don't usually talk about it that way. It's much more common to speak of "partnering." Whatever it's called, though, it has always made sense, because companies realize that when creative talent is captive to a particular organization, it is hard to keep fresh.

Two key developments in recent years have made partnering even more imperative. First, creative work has become more central to the strategic programs of many companies, in large part because manufacturing and technology are no longer the differentiators they used to be. Virtually all laptop computers, for instance, are produced by the same handful of Taiwanese firms. At the same time, the rise of the service economy has created new challenges, making creative design fundamental to delivering great customer experiences.

The second, surely related, development is the increased specialization of design work. It used to be that an industrial designer working on a product would handle all the design tasks associated with it. Today a product or service might call for contributions from an experience designer, an interface designer, and an information designer. Look at a novel offering like Best Buy's Geek Squad, and you see the handiwork of all kinds of specialists, from the transparent menu of prices to the cars and uniforms of the geeks.

How does all this relate to Brady's concern? It explains why creativity hot spots emerge in certain cities around the globe. Once talent separates into specialized disciplines, it seeks locales where demand for such specialties is concentrated. Just as water seeks the lowest ground, talent gravitates to the richest networks and greatest opportunities, so hubs naturally form. Today the hottest spots in the United States are New York, LA, San Francisco, and Chicago. In Asia, they include Singapore, Shanghai, and Tokyo. Dubai is an emerging focal point in its part of the world, especially for architecture.

There is nothing fixed about these locales, however – and in the United States they could easily lose their "hub" status thanks to current immigration policy, which prevents companies from importing top talent. We've experienced this problem directly at Aquent. Four recent hires, all experts in the field of user-interface creation, were denied the visas that would have brought them to our Boston office. We're housing them in London instead. On a grander scale, Microsoft was compelled to locate a major new research facility outside the United States. The 300 scientists it recruited from around the world now pay Canadian taxes and fuel the brainpower advantage of Vancouver.

Could a Barton Brady, assuming he were real, do anything personally about U.S. immigration policy? Probably not. But he could direct his energy toward rallying (perhaps with a well-crafted metaphor?) a large group of citizens concerned with competitiveness.

As for the future of Serendipity Associates, Brady should start by using his beautiful cell phone to talk directly to his clients, rather than relying on the mysterious methods of his intelligence chief. I suspect he might find that the Irish threat is less a matter of cost than of quality. To get back in the game, he and his partners may need to think more broadly about the business they are in. If they redefine it as being about communicating management ideas, rather than only about making metaphors, they might see opportunities for exciting new offerings that could draw clients back. Who knows – it might even be time for a Straight Talk practice. If so, Yasmin Buonarroti seems like a natural to lead it.

Richard Phelps *is the global lead partner in human resource management at PricewaterhouseCoopers. Based in London, he is a founder of Saratoga, which was acquired by PwC in 2003 and specializes in the measurement and benchmarking of human capital and business functions.*

I HOPE that Brady's walk down the Strip does not yield any provocation other than a determination to take a hard look at the future of his business. In management cliché terms, the crisis it faces is "both threat and opportunity."

The prevailing view among Western executives has been that whereas workers in emerging economies are welcome to take on transactional work through outsourcing and offshoring arrangements, and are even able to perform some low-level knowledge processing, they are simply not equal to the demands of highly creative work. That, it is thought, will continue to be the domain of mature Western economies and indeed will be the salvation of their competitiveness.

The facts suggest otherwise. We already see offshoring by the likes of GE, Apple, and Nokia of relatively sophisticated design and advisory services; by such publishers as Macmillan and Oxford University Press of content development; by Walt Disney of animation. Overall, the offshoring of knowledge work is growing by a startling 39% annually, according to statistics compiled by Evalueserve, and is projected to engage an estimated 390,000 professionals by 2011. By then, the number of Western companies offshoring knowledge work will probably exceed 5,000 – up from about 900 in 2006.

SA's job in the increasingly flat world of creativity is to align itself with the best practitioners.

So far, India is the leading beneficiary of these jobs. It has been carving out huge swaths of knowledge work from Western economies for some years, including legal services, R&D, education and training, software development, market research, data analytics, equity research, finance, and advertising. Given the country's investment in education and the English-language facility of the Indian workforce, India will most likely remain a favored region for some time. But China, Russia, Poland, the Philippines, Hungary, and former Soviet republics also provide increasingly high levels of skill at comparatively low cost. In short, the world of creativity is becoming flat. Innovative talent, like any other resource, will be exploited wherever it exists.

Add to all this the fact that the creative industries have low barriers to entry (and the best clients and the best talent readily move to sources of exciting new ideas), and it's clear that Brady does face a threat. It can be seized as an opportunity, however, if he changes his mind-set. He needs to think of the service he provides in terms of sourcing the talent required to deliver superior solutions to clients. It should be Serendipity Associates' job to discover the best practitioners wherever they exist and then to align itself with them, whether by employing them, using them as consultants or contractors, or getting them to represent its brand in some other way. Rather than fretting about offshoring or outsourcing jobs, Brady should see SA's mission as importing competitiveness.

It probably does not make sense for the firm to rush into an offshoring arrangement. Doing so successfully would require knowledge of the global marketplace – both the availability of relevant talent and the existing global networks that could give SA access to it. SA does not appear to be so well informed. After all, Brady hasn't even heard of Hank Wittgenstein, who has been poaching his clients! Luckily, the threat may not be terribly pressing. Tropes R Us is taking a big risk by moving so fast to offshore work at the most creative end of the knowledge work spectrum. Metaphors are socially sensitive and require not only idiomatic language skills but also a localized appreciation of the moment: the things one can laugh and joke about, the things one currently reveres, and the things one never mentions. If Tropes R Us were to fail by overreaching but still manage to shake Brady out of a too-common complacency, that would truly be serendipity.


You're already a valued member of a winning team when you work with Beijing, challenge Houston, negotiate with London, debate Cupertino, and collaborate with New Delhi.
You engage. You recharge. And then you bring it back to your business.
Spark.
HARVARD

Charlie Wrench *is the chief executive officer of Landor Associates, headquartered in San Francisco, a strategic brand- and design-consulting firm with 24 offices in 18 countries.*

STEPHEN BROWN'S tongue-in-cheek story depicts an extreme form of right-brain work, but it is true that creative companies – like Landor Associates, my own company – must learn to operate in an increasingly flat world. Certainly, some of the work we have traditionally performed for clients is now vulnerable to lower-cost competition. The best example is artwork production. It used to be that if we helped design a new branding opportunity for, say, Frito-Lay, we would create the entire package system, delivering hundreds of permutations to cover all the sizes and flavors retailers would stock. Nowadays, our largest clients tend to have global procurement departments looking for lower-cost solutions, and they often turn to volume producers who specialize in exactly that kind of iterative, logistical work.

Happily, while that trend is affecting one end of our business, the other end is also changing. The world is recognizing that an

> Instead of pondering America's fate, Brady should help clients develop differentiated offerings.

enormous percentage of market capitalization in consumer-facing companies is attributable not to the capacity or inventory value of the products made in the factory but to the goodwill and future leverageability of the brand that exists in the mind. And so, at the high end of our service offering, we see increasing demand for more strategic brand-development services. For instance, a client such as Procter & Gamble might ask us to refresh its oral-care portfolio, finding ways to reposition products and brands in light of changing attitudes and emerging customer segments. The growth in this type of work, as well as in innovation (finding new platforms for clients) and brand engagement (helping clients infuse brand purpose into their employees' actions and attitudes), more than offsets the lower-value-adding activity we have ceded. So far, it's been a fairly healthy equation for us.

Do I think that Landor's ability to stay ahead has been a function of our U.S. origins? Yes – but not because I believe the Western world has some genetic hegemony when it comes to creativity. What we have is 60 years of postwar experience in applying right-brain skills to the challenge of brand building – and the lion's share of the world's biggest brands demanding those skills. As a result, we represent where best practices, best platforms, and best opportunities are found, and we continue to attract a disproportionate share of creative talent from around the world.

Brady clearly worries about whether the United States can sustain its creative leadership, but I doubt that his big global clients do. The corporations on whose behalf these skill sets are exercised are rarely nationally driven. Indeed, most would see more value in distributing creative capabilities across the world so that they could be leveraged in emerging markets. I suspect, however, that the dynamics of supply and demand will come into play before any drastic shift of creative work from the West. That has been Landor's experience. Over the past few years, we've experimented with moving some production to Mumbai, and even in that brief period the cost advantage has narrowed significantly, owing in large part to the cost of supervising an outsourced relationship and rising costs in Mumbai.

Instead of pondering America's fate, Brady should be attending to his clients' real concern in a flatter world: their need to reach customers worldwide with differentiated offerings that feel globally consistent yet relevant to local culture. Multinationals need their creative vendors to manage work efficiently across a hundred markets, orchestrating the skill sets of perhaps 15 offices. That calls for a powerful combination of right- *and* left-brain skills, which Serendipity Associates must start building.

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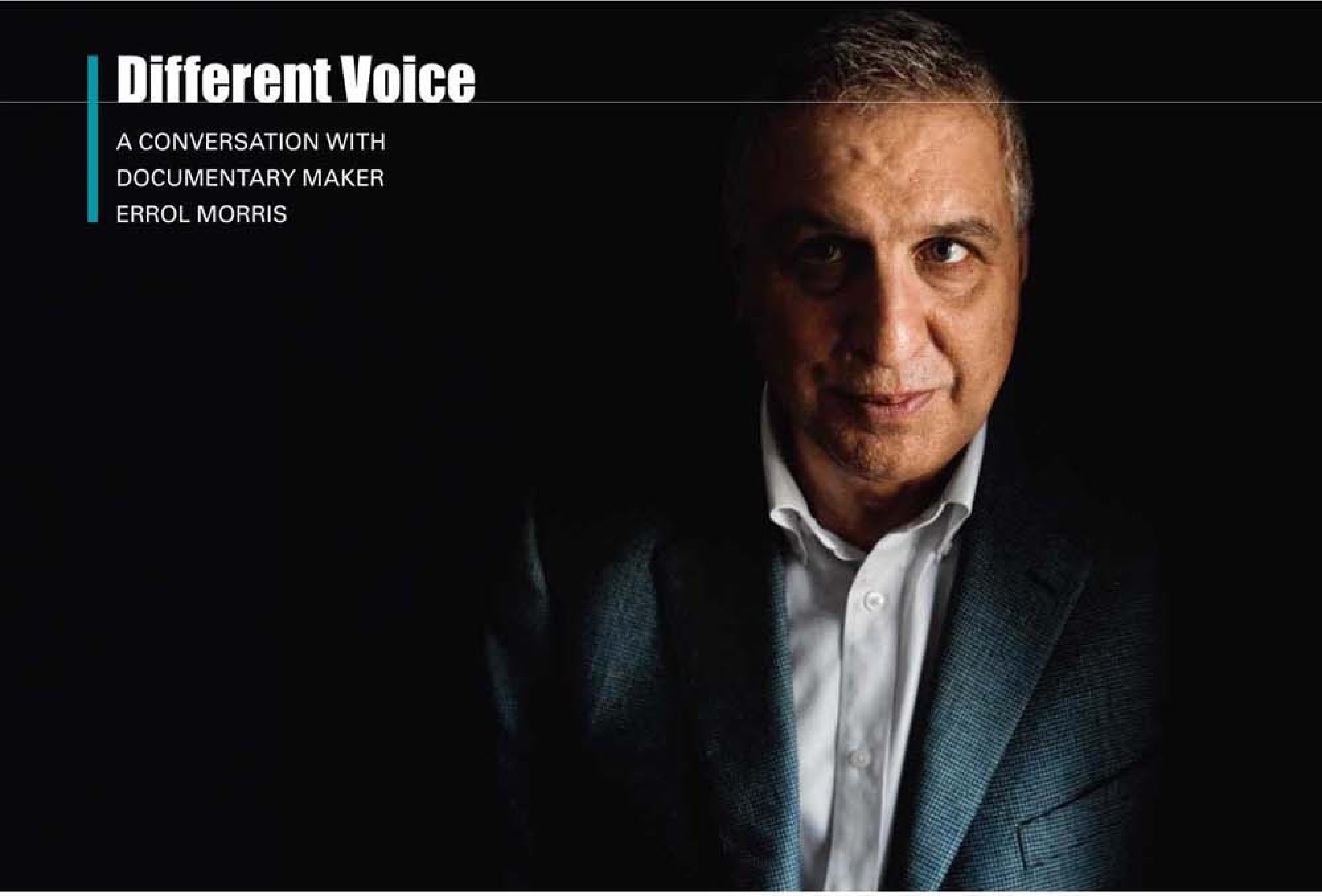
Different Voice

A CONVERSATION WITH DOCUMENTARY MAKER ERROL MORRIS


Ben Fredman

Making Sense of Ambiguous Evidence

THE INFORMATION THAT top managers receive is rarely unfiltered. Unpopular opinions are censored. Partisan views are veiled as objective arguments. Honest mistakes are made.

Few people know how to get an accurate read on a situation like documentarian Errol Morris. He expressed his obsessive gumshoe sensibility in scrupulous, poetic detail in a series of essays on the *New York Times* website about two Crimean War photographs – devoting about 25,000 words to raising and answering the question of which photo was taken first, leading readers through the evidence piece by piece. He had pored over the photographer's letters, interviewed museum curators, studied various maps, traveled to Crimea, snapped his own pictures, consulted with a shadow expert and the cocreator of a forensic photography software program, and then circled back to the images themselves after a friend weighed in with keen observations about the blue sensitivity of nineteenth-century photographic emulsions, the positioning of incidental rocks, and the laws of gravity.

That sort of analytical rigor pervades Morris's films and has brought him much critical praise. (An article in the *Guardian* placed him among the top 10 directors in the world, describing him as "the world's best investigative film-maker," with a "forensic mind" and a "painter's eye.") It's a quality that would serve managers at all levels well, as they sort through appearances to get to the real story. Who better to learn from than Morris, an ardent and acclaimed pursuer of facts?

Morris worked as a private investigator years ago, so it makes sense that as a director he is inclined to scrutinize data and unravel preconceptions. One of his best-known documentaries, *The Thin Blue Line*, uncovered new evidence regarding the 1976 murder of a Dallas police officer, which led to the exoneration of the man originally sentenced to death for the crime. Morris's most recent film, *Standard Operating Procedure,* closely examines many of the photographs taken at Abu Ghraib prison in Iraq, using commentary by the U.S. soldiers who took and posed in the pictures to fill in the gaps of our knowledge and call into question many assumptions the public and the press made about what those images proved.

Given the credibility that his approach engenders, it's not surprising that companies such as Apple, Citigroup, Adidas, and Toyota have hired Morris to direct TV ads. He brings more than a flair for advertising and marketing to the business table: In this edited interview with HBR's Lisa Burrell, he shares insights about how to get to the bottom of things when you're faced with incomplete information or conflicting accounts and how to present yourself as an authentic leader that others will want to follow.

ARTICLE AT A GLANCE

- **Documentary maker Errol Morris talks about the importance of letting evidence be your guide when making judgment calls or interpreting events.**
- **He holds up the photographs of Abu Ghraib as a cautionary tale.**
- **Morris also discusses credibility as a crucial quality of leadership – explaining why, for example, John Kerry struggled to earn the public's trust in his 2004 bid for the U.S. presidency.**

What prompted you to start the investigation that led to your documentary *Standard Operating Procedure?*

It was motivated by my interest in the Abu Ghraib photographs and the realization that no one had bothered to contextualize them. People look at a photograph and think, "Well, it's obvious what it means. It's obvious what it displays or depicts or portrays." And it's not at all obvious. The goal was to take these photographs, which in many instances are known by literally hundreds of millions of people, and examine them. Let's talk to the soldiers who took them. Let's try to figure out who was there, what they thought they were doing, why the photographs were taken, and so on.

Why didn't you interview military leaders as well, to get their perspective?

If Donald Rumsfeld and Dick Cheney had taken a whole series of snapshots, perhaps I could have made a movie about that. But this was about *these* snapshots, and as such it was about soldiers way, way, way down in the chain of command: privates, specialists, corporals, sergeants. The one exception is Janis Karpinski, the former brigadier general who was in charge of the prison. I included her because in some sense, even though she was never court-martialed or imprisoned, she did in part take the fall for Abu Ghraib.

Can you elaborate on specialist Megan Ambuhl's comment that photos don't allow people to see "outside the frame"?

On some very literal level, when we look at a photograph, we think we see everything. It's the proof Othello demands when he hears that his wife has been unfaithful. Othello says to Iago, "Give me the ocular proof." Of course, he gets it, and it turns out to be no proof at all. It's the engine of tragedy. We take what we see as being veridical. Somehow, if we see it, it must be the case.

When we get a photograph or a group of photographs – 270 of them were turned over to the criminal investigation division of the army – we look at them and say, "Well, this is all I need to see. This shows me the world of Abu Ghraib." Brent Pack, who examined the photos for the prosecution, created a time line based on the metadata from the digital cameras. It's really interesting to me that he did this, that there was this investigation. But all of this empirical information still doesn't tell you *what* you're looking at. You may think you know a lot about the photographs, but they don't record what's in people's heads. They don't record context. They don't record why the photograph was taken or what is depicted. They provide evidence, but many, many additional steps have to be taken before you can say evidence of *what.*

There is this idea about the cast of characters of Abu Ghraib: Ivan Frederick, Chuck Graner, Megan Ambuhl, Lynndie England, Sabrina Harman, and so on. You see these people, and you think that the whole story is about them. This affected journalists as well, I might add. No one looked behind the photographic screen to see what else was there. The minute you go beyond this glimpse of reality, you see that Abu Ghraib did not just concern these MPs; it involved thousands upon thousands of people. There were close to 8,000 prisoners at Abu Ghraib by the end of 2003. You're looking at a small city. And you're looking at policy. You're looking at the face of America in Iraq. The line I think most accurately describes all this comes from Philip Gourevitch, who collaborated with me on a book about Abu Ghraib: The photographs served as both an exposé and a cover-up. They showed us something, but they also encouraged us not to look further. We thought we had the ocular proof.

Business leaders often have to dig to get to the truth. When you

investigate, at what point does your opinion come into play?

Well, it always comes into play. I think there's always a tug-of-war. Crime, of course, is a really great illustration of this sort of thing because the stakes are high. Did X commit this crime, or is he innocent? We want to know the answer. In my film *The Thin Blue Line,* the police were convinced they knew who the killer was. They had a narrative about what had happened, and they had a deeply vested interest in believing that narrative.

People fall into patterns of belief. It's not that they consciously choose to believe one thing or another. I don't think the police, in the example of *The Thin Blue Line,* chose to frame an innocent man. I would say that their thinking was incredibly sloppy and influenced by an unconscious desire to believe in one thing. Often people do this because it's simpler or it answers to some social need. It doesn't have to be true. And once you choose to believe something or end up believing it, you surrender that belief reluctantly – if at all.

Why did you suspect the police were wrong?

Because the evidence was overwhelming: A lot of it had remained unseen or ignored. But then came the need to justify my suspicion, to convince myself that it had some basis in reality. I could see that Randall Adams had been wittingly or unwittingly framed for a crime that he didn't commit. I couldn't see all the details. I couldn't prove it to somebody. But I *felt* there was something wrong with this. The story didn't fit together properly. That was the beginning of two years of investigating to justify the belief. And then the whole thing became surreal because new information appeared as I was investigating. It confirmed the doubts I'd had earlier on.

How do you know when you've looked far enough?

I was a private investigator for many years. I worked on a lot of Wall Street cases. Back then, there was always someone telling me when to stop. Every project had a clear end. When you're investigating on your own, it's hard to decide when you're finished. Getting Randall Adams out of jail was my stopping point for *The Thin Blue Line.*

After you collect information, you need to present it in a way that's engaging yet believable. Your reenactments are pretty stylized – do you worry that they pull people's strings?

The Interrotron creates a sense of intimacy by allowing Morris's interview subjects to make eye contact with the audience.

Nubar Alexanian

The reenactments are not meant to be manipulative. Quite the opposite: The stylization openly signals that these aren't recordings of events – that I didn't happen to be hanging out on Hampton Road with a camera the night the Dallas police officer was shot. It invites people to step back, away from their preconceptions, and think about the events in a new way.

In your interviews, your presence is understated. How does your Interrotron help you step out of the way?

The Interrotron uses two cameras and two teleprompters. It's a contraption I devised to allow the interviewer and the subject to look directly at each other – or at least at their live video images – and directly into the camera at the same time. The people I interview are looking at my video image, but they also make eye contact with the audience.

If you want to preserve the role of an on-screen interviewer, where you are actually part of the drama and it's the give-and-take you care about, then by all means include that relationship. What I try to do, though, is create a relationship between the person being interviewed and the audience. You're aware that I'm there in the film, but at times there's almost a stream of consciousness narration – a direct link between subject and viewer – and that's by choice.

I've found that filming interviews with the Interrotron helps me achieve greater intimacy. Of course, I've done a lot of interviews, and I've learned how to draw people out on my own – it's not just the device, but it does help.

I've read that you prefer the term "nonfiction film" to "documentary." Does that have to do with how you define "truth"?

No, not at all. I don't believe in the postmodern notion that there are different kinds of truth. There is one objective reality, period. Either someone was shot or he wasn't. Someone pulled the trigger or he didn't. Countries are at war or they aren't. The *perception* of reality may differ from person to person, but that doesn't mean there are different kinds of truth or that truth is subjective.

When people think "documentary," they often assume "fly on the wall," no intervention from a director. Then there's the idea of the auteur – the director who is all-present and shapes everything. Different films call for different treatments, no matter what the genre. But just because a director's in control doesn't mean that the director is not concerned with *truth* – with truth-telling or with seeking the truth. I've seen fiction films with moments of truth in them and nonfiction films with moments of egregious inaccuracy.

I'm not sure I'd describe what I do as seeking "truth." What I do is investigate. When I'm looking at the evidence for a crime, for instance, I like to break it up into two categories: exculpating and inculpating. It's a way of looking at things from both sides.

> I don't believe that there are different kinds of truth. There is one objective reality, period.

Let's talk about inspiring trust. You've said that John Kerry struggled with credibility in his 2004 U.S. presidential campaign. How so?

You need to present voters with a consistent story if you're going to get elected. It's marketing. It's brand management. George W. Bush didn't hide his past, and that served him well. Whether you liked it or you didn't, Bush created a consistent narrative. He gave you reasons why you weren't supposed to be concerned with his National Guard service. He told you, "I was a bad boy. I found Christ. I stopped drinking. I'm a new man." Once he'd said that, you couldn't attack him for being a bad guy. It's a kind of redemptive story.

Kerry, on the other hand, provided a completely confused narrative that elided certain major aspects of his biography. It was inherently disingenuous. He tried to do the band-of-brothers thing and sweep his war protesting under the rug. He would have done much better to hold up both elements of his biography and say, "Two rights don't make a wrong." It was right to be brave and courageous in war, but it was also right to speak out when he realized how wrong things were. I thought it'd be a good idea to get him on the Interrotron, looking like a real person rather than a cardboard cutout, being honest about both parts of his past. I thought his campaign might let me do it, too, but then it became clear that wasn't going to happen.

Why did you decide to start working on TV commercials for companies?

I had to make a living, and I like doing them. They're little 30-second movies about the world. For the first few years I did them, I didn't even use interviews. It felt good to try something new.

Why do companies want to hire you? What do they say they're looking for that they can't get from someone else?

Well, by now I've established a track record in advertising. I'm not answering the question directly about what they're looking for, but I can tell you what I think I can offer. I wanted to put Kerry on the Interrotron so he would speak using his own words – natural, unscripted material – and somehow Kerry's humanity, which seemed to get lost in the campaign, could reemerge. I thought that was important and I'm pretty good at that kind of thing.

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To order, see page 139.

HBR green

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Andrew J. Hoffman*, Holcim (U.S.) Professor of Sustainable Enterprise, University of Michigan, and* ***John Woody****, deal associate, MMA Renewable Ventures*

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You Are Only as Green as Your Supply Chain

Brian Walker*, CEO, Herman Miller*

Go to GreenConversation.hbr.org for the complete discussion.

The Green Conversation

Takeaways from HBR's online discussion about leadership and the environment

FOR THREE MONTHS THIS SPRING, HBR Green hosted a six-part series of online discussion exploring best practices and new thinking in green business strategy. Leaders of the business world asked provocative questions about how environmental issues are affecting key corporate disciplines. Featured contributors and readers from around the globe – executives of companies large and small, consultants, heads of utilities, academics – answered with robust and lively commentaries.

We learned that, not so different from the epiphany that drove Total Quality Management, the counterintuitive realization that green initiatives can save rather than cost money is transforming the way companies think about sustainability. Early movers may be able to stake out competitive advantage, but for most organizations, sustainability will be a requisite for operation. The discussion yielded a green version of W. Edwards Deming's 14 points – focusing on consistency of purpose from the boardroom to the shop floor; transformation of design, development, and production to lower costs of production and ownership; the role of standards in pushing imperatives through the supply chain; and the importance of cross-functional collaboration in attacking the multiheaded beast of sustainability. As the conversation highlights collected in the following pages reveal, no facet of doing business will remain untouched.

>> harvardbusiness.org

For more on this topic, go to **blogs.harvardbusiness.org/leadinggreen.**

1

OPERATIONS

Winners and Losers in a Carbon-Constrained World

There's an old saying in poker: "If you don't know who the sucker is in a game, it's you." Well, business can be a lot like that, say professor **Andrew J. Hoffman** and deal associate **John Woody**. Concerns about global warming will spur massive market changes, whether they come from changes in regulations, capital markets, consumer demand, or something else. Companies that are indifferent to these shifts may be blindsided. Here's one take on how.

GET THE RIGHT TALENT

The sucker-in-the-game saying is more than apt in assessing winners and losers in a carbon-constrained future. Hoffman and Woody's three-step strategy [know your carbon exposure; take action; influence policy] is appropriate, but its analytical precision does not convey how brutally this game will be played. The major stakes on the table will bring out the best (innovation) and worst (political treachery) in mankind. Indeed, worst-case scenarios include global famine and warfare.

In my travels throughout the corporate world, I have witnessed the excitement generated by marketing programs such as GE's Ecomagination. Judging from the mounting media coverage, the green buzz is approaching a roar. But the strategic attention of executives appears to be focused on grabbing the green-marketing winnings and not on strategic positioning to hedge one's bets for the long-term game. The best marketing minds may currently be at the table, but what about the rest of the team? Corporate environmental managers continue to be consumed by day-to-day regulatory-required tasks. In other words, they are still playing yesterday's game. I'd add a fourth step to Hoffman and Woody's list: Check to see if you have the right players with the required skills.

– Posted by **Richard MacLean**, executive director, Center for Environmental Innovation

2

CORPORATE GOVERNANCE

"It doesn't matter whether you're playing environmental offense or defense.

Ignoring outside groups can mean trouble for the top line and the bottom line."

– **Judith Samuelson** of the Aspen Institute on the need for companies and stakeholders to work together

3

MARKETING

Don't Bother with the "Green" Consumer

Some companies tout the ecofriendly virtues of an existing product, only to hear claims of greenwashing. Others create offerings targeted to the environmentalist consumer and get stuck in a green ghetto. **Steve Bishop** of IDEO says don't bother with the green consumer. HBR Green's community responded:

Agree

- It's a waste of time to market to green consumers, because they are suspicious of the motives.
- **"Greenness" is far down the list of qualities people seek in the products they buy.**
- **Green is context. Disregard it at your peril, as U.S. carmakers did in the pre-$3-per-gallon gasoline era, but don't expect to gain competitive advantage from green either.**
- The core issue is identifying how "green" is relevant to creating value for customers.
- Companies that authentically market green products attract customers who are more loyal, less price sensitive, and more likely to recommend their products to friends and family.
- **Companies need to focus on embedding efficiency, environmental performance, and other green values into core business goals.**

Disagree

IF YOU HAVE BIG IDEAS DON'T MISS THIS BIG OPPORTUNITY

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4

ETHICS

Should Managers Have a Green Hippocratic Oath?

The once unassailable notion that companies exist solely to maximize shareholders' returns is crumbling. Harvard Business School professors **Rakesh Khurana** and **Nitin Nohria** propose that organizations require new managers to pledge to first do no harm, including harm to the environment.

Would such an oath work in the real world of business? Visitors to HBR Green weighed in:

No An oath runs counter to entrepreneurial spirit. **Business practitioners are taught the virtue of disruptive innovation, and companies that change the way the game is played become legends. Fighting the competitive and innovative nature of business with an oath is futile. Instead, corporate systems should incorporate environmental and social risk factors into everyday quantitative analysis.**

No It will never be as effective as market mechanisms. **If a company engages in activities that threaten its future competitiveness and the environment, then the discount rate investors apply to its future earnings will be higher, thus making its present value lower. Punishing managers with a lower stock price is surely more effective than having them sign an unenforceable oath.**

Yes And it should not be reserved just for managers; all employees should take it. **Deviations from a code of conduct at the management level can cause the immediate death of the organization (for example, Enron), but deviations at the operating level lead to its slow death or deterioration.**

Yes It signals an organizational commitment. **Commitment to a sustainability oath would have the same effect as commitment to other corporate philosophies such as "hiring the best talent." It can lead to higher shareholder return and better value for stakeholders.**

5

LEADERSHIP

"Responsible business is good business, provided we don't get too far ahead of our customers. I think half a step is about right: Any more and you can't sell to them; any less and you lose the lead."

– **Sir Stuart Rose,** chief executive of Marks & Spencer, on taking the long view with Plan A, the British retailer's ambitious five-year ecoplan

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SUPPLY CHAIN

You Are Only as Green as Your Supply Chain

Herman Miller CEO **Brian Walker** knows it takes a village to build a green product. As this conversation heated up, we saw just how big the village needs to be. Below is a look at the supply chain challenges that generated the most discussion.

Note: Percentages represent the number of comments on a topic out of the total responses.

Behind Pixar's string of hit movies, says the studio's president, is a peer-driven process for solving problems.

by Ed Catmull

How Pixar Fosters

Collective Creativity

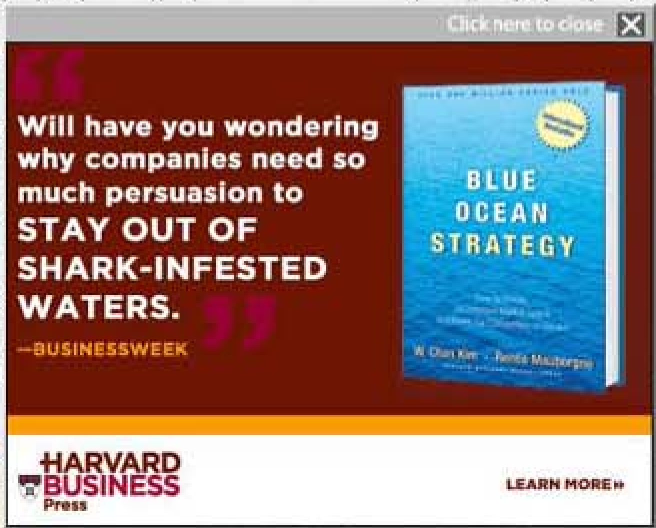
photos: Deborah Coleman; characters courtesy of Pixar

A few years ago, I had lunch with the head of a major motion picture studio, who declared that his central problem was not finding good people – it was finding good ideas. Since then, when giving talks, I've asked audiences whether they agree with him. Almost always there's a 50/50 split, which has astounded me because I couldn't disagree more with the studio executive. His belief is rooted in a misguided view of creativity that exaggerates the importance of the initial idea in creating an original product. And it reflects a profound misunderstanding of how to manage the large risks inherent in producing breakthroughs.

When it comes to producing breakthroughs, both technological and artistic, Pixar's track record is unique. In the early 1990s, we were known as the leading technological pioneer in the field of computer animation. Our years of R&D culminated in the release of *Toy Story* in 1995, the world's first computer-animated feature film. In the following 13 years, we have released eight other films (*A Bug's Life; Toy Story 2; Monsters, Inc.; Finding Nemo; The Incredibles; Cars; Ratatouille;*

and *WALL·E*), which also have been blockbusters. Unlike most other studios, we have never bought scripts or movie ideas from the outside. All of our stories, worlds, and characters were crea[...] making t[...] logical bo[...] patents in[...]

While I [...] have a flc[...] I believe [...] for mana[...] a commu[...] lasting rel[...]



>> hbr.or[...]
Listen to Ed[...] discuss the[...] ment of creativity at pixar.hbr.org.

[...] must be safe to tell the truth. We must constantly challenge all of our assumptions and search for the flaws that could destroy our culture. In the last two years, we've had a chance to test whether our principles and practices are transferable. After Pixar's 2006 merger with the Walt Disney Company, its CEO, Bob Iger, asked me, chief creative officer John Lasseter, and other Pixar senior managers to help him revive Disney Animation Studios. The success of our efforts prompted me to share my thinking on how to build a sustainable creative organization.

What Is Creativity?

People tend to think of creativity as a mysterious solo act, and they typically reduce products to a single idea: This is a movie about toys, or dinosaurs, or love, they'll say. However, in filmmaking and many other kinds of complex product development, creativity involves a large number of people from different disciplines working effectively together to solve a great many problems. The initial idea for the movie – what people in the movie business call "the high concept" – is merely one step in a long, arduous process that takes four to five years.

A movie contains literally tens of thousands of ideas. They're in the form of every sentence; in the performance of each line; in the design of characters, sets, and backgrounds; in the locations of the camera; in the colors, the lighting, the pacing. The director and the other creative leaders of a production do not come up with all the ideas on their own; rather, every single member of the 200- to 250-person production group makes suggestions. Creativity must be present at every level of every artistic and technical part of the organization. The leaders sort through a mass of ideas to find the ones that fit into a coherent whole – that support the story – which is a very difficult task. It's like an archaeological dig where you don't know what you're looking for or whether you will even find anything. The process is downright scary.

Then again, if we aren't always at least a little scared, we're not doing our job. We're in a business whose customers want to see something new every time they go to the theater. This means we have to put ourselves at great risk. Our most recent film, *WALL·E*, is a robot love story set in a post-apocalyptic world full of trash. And our previous movie, *Ratatouille*, is about a French rat who aspires to be a chef. Talk about unexpected ideas! At the outset of making these movies, we simply didn't know if they would work. However, since we're supposed to offer something that isn't obvious, we bought into somebody's initial vision and took a chance.

To act in this fashion, we as executives have to resist our natural tendency to avoid or minimize risks, which, of course, is much easier said than done. In the movie business and plenty of others, this instinct leads executives to choose to copy successes rather than try to create something brand-new. That's why you see so many movies that are so much alike. It also explains why a lot of films aren't very good. If you want to be original, you have to accept the uncertainty, even when it's uncomfortable, and have the capability to recover when your organization takes a big risk and fails. What's the key to being able to recover? Talented people! Contrary to what the studio head asserted at lunch that day, such people are not so easy to find.

What's equally tough, of course, is getting talented people to work effectively with one another. That takes trust and respect, which we as managers can't mandate; they must be earned over time. What we can do is construct an environment that nurtures trusting and respectful relationships and unleashes everyone's creativity. If we get that right, the result is a vibrant community where talented people are loyal to one another and their collective work, everyone feels that they are

TAKING RISKS
Pixar's customers expect to see something new every time. That's downright scary. But if Pixar's executives aren't always a little scared, they're not doing their jobs.

The view that good ideas are rarer and more valuable than good people is rooted in a misconception of creativity.

part of something extraordinary, and their passion and accomplishments make the community a magnet for talented people coming out of schools or working at other places. I know what I'm describing is the antithesis of the free-agency practices that prevail in the movie industry, but that's the point: I believe that community matters.

The Roots of Our Culture

My conviction that smart people are more important than good ideas probably isn't surprising. I've had the good fortune to work alongside amazing people in places that pioneered computer graphics.

At the University of Utah, my fellow graduate students included Jim Clark, who cofounded Silicon Graphics and Netscape; John Warnock, who cofounded Adobe; and Alan Kay, who developed object-oriented programming. We had ample funding (thanks to the U.S. Defense Department's Advanced Research Projects Agency), the professors gave us free rein, and there was an exhilarating and creative exchange of ideas.

At the New York Institute of Technology, where I headed a new computer-animation laboratory, one of my first hires was Alvy Ray Smith, who made breakthroughs in computer painting. That made me realize that it's OK to hire people who are smarter than you are.

Then George Lucas, of *Star Wars* fame, hired me to head a major initiative at Lucasfilm to bring computer graphics and other digital technology into films and, later, games. It was thrilling to do research within a film company that was pushing the boundaries. George didn't try to lock up the technology for himself and allowed us to continue to publish and maintain strong academic contacts. This made it possible to attract some of the best people in the industry, including John Lasseter, then an animator from Disney, who was excited by the new possibilities of computer animation.

Last but not least, there's Pixar, which began its life as an independent company in 1986, when Steve Jobs bought the computer division from Lucasfilm, allowing us to pursue our dream of producing computer-animated movies. Steve gave backbone to our desire for excellence and helped us form a remarkable management team. I'd like to think that Pixar captures what's best about all the places I've worked. A number of us have stuck together for decades, pursuing the dream of making computer-animated films, and we still have the pleasure of working together today.

It was only when Pixar experienced a crisis during the production of *Toy Story 2* that my views on how to structure and operate a creative organization began to crystallize. In 1996, while we were working on *A Bug's Life,* our second movie, we started to make a sequel to *Toy Story.* We had enough technical leaders to start a second production, but all of our proven creative leaders – the people who had made *Toy Story,* including John, who was its director; writer Andrew Stanton; editor Lee Unkrich; and the late Joe Ranft, the movie's head of story – were working on *A Bug's Life.* So we had to form a new creative team of people who had never headed a movie production. We felt this was OK. After all, John, Andrew, Lee, and Joe had never led a full-length animated film production before *Toy Story.*

Disney, which at that time was distributing and cofinancing our films, initially encouraged us to make *Toy Story 2* as a "direct to video" – a movie that would be sold only as home videos and not shown first in theaters. This was Disney's model for keeping alive the characters of successful films, and the expectation was that both the cost and quality would be lower. We realized early on, however, that having two different standards of quality in the same studio was bad for our souls, and Disney readily agreed that the sequel should be a theatrical release. The creative leadership, though, remained the same, which turned out to be a problem.

In the early stage of making a movie, we draw storyboards (a comic-book version of the story) and then edit them together with dialogue and temporary music. These are called story reels. The first versions are very rough, but they give a sense of what the problems are, which in the beginning of all productions are many. We then iterate, and each version typically gets better and better. In the case of *Toy Story 2,* we had a good initial idea for a story, but the reels were not where they ought to have been by the time we started animation, and they were not improving. Making matters worse, the directors and producers were not pulling together to rise to the challenge.

Finally *A Bug's Life* was finished, freeing up John, Andrew, Lee, and Joe to take over the creative leadership of *Toy Story 2.* Given where the production was at that point, 18 months would have been an aggressive schedule, but by then we had only eight left to deliver the film. Knowing that the company's future depended on them, crew members worked at an incredible rate. In the end, with the new leadership, they pulled it off.

How did John and his team save the movie? The problem was not the original core concept, which they retained. The main character, a cowboy doll named Woody, is kidnapped by a toy collector who intends to ship him to a toy museum in Japan. At a critical point in the story, Woody has to decide whether to go to Japan or try to escape and go back to Andy, the boy who owned him. Well, since the movie is coming from Pixar and Disney, you know he's going to end up back with Andy. And if you can easily predict what's going to happen, you don't have any drama. So the challenge was to get the audience to believe that Woody might make a different choice. The first team couldn't figure out how to do it.

John, Andrew, Lee, and Joe solved that problem by adding several elements to show the fears toys might have that people could relate to. One is a scene they created called "Jessie's story." Jessie is a cowgirl doll who is going to be shipped to Japan with Woody. She wants to go, and she explains why to Woody. The audience hears her story in the emotional song "When She Loved Me": She had been the darling of a little girl, but the girl grew up and discarded her. The reality is kids do grow up, life does change, and sometimes you have to move on. Since the audience members know the truth of this, they can see that Woody has a real choice, and this is what grabs them. It took our "A" team to add the elements that made the story work.

Toy Story 2 was great and became a critical and commercial success – and it was the defining moment for Pixar. It taught us an important lesson about the primacy of people over ideas: If you give a good idea to a mediocre team, they will screw it up; if you give a mediocre idea to a great team, they will either fix it or throw it away and come up with something that works.

Toy Story 2 also taught us another important lesson: There has to be one quality bar for every film we produce. Everyone working at the studio at the time made tremendous personal sacrifices to fix *Toy Story 2*. We shut down all the other productions. We asked our crew to work inhumane hours, and lots of people suffered repetitive stress injuries. But by rejecting mediocrity at great pain and personal sacrifice, we made a loud statement as a community that it was unacceptable to produce some good films and some mediocre films. As a result of *Toy Story 2*, it became deeply ingrained in our culture that everything we touch needs to be excellent. This goes beyond movies to the DVD production and extras, and to the toys and other consumer products associated with our characters.

Of course, most executives would at least pay lip service to the notion that they need to get good people and should set their standards high. But how many understand the importance of creating an environment that supports great people and encourages them to support one another so the whole is far greater than the sum of the parts? That's what we are striving to do. Let me share what we've learned so far about what works.

If you give a good idea to a mediocre team, they'll screw it up. But if you give a mediocre idea to a great team, they'll make it work.

Power to the Creatives

Creative power in a film has to reside with the film's creative leadership. As obvious as this might seem, it's not true of many companies in the movie industry and, I suspect, a lot of others. We believe the creative vision propelling each movie comes from one or two people and not from either corporate executives or a development department. Our philosophy is: You get great creative people, you bet big on them, you give them enormous leeway and support, and you provide them with an environment in which they can get honest feedback from everyone.

After *Toy Story 2* we changed the mission of our development department. Instead of coming up with new ideas for movies (its role at most studios), the department's job is to assemble small incubation teams to help directors refine their own ideas to a point where they can convince John and our other senior filmmakers that those ideas have the potential to be great films. Each team typically consists of a director, a writer, some artists, and some storyboard people. The development department's goal is to find individuals who will work effectively together. During this incubation stage, you can't judge teams by the material they're producing because it's so rough – there are many problems and open questions. But you can assess whether the teams' social dynamics are healthy and whether the teams are solving problems and making progress. Both the senior management and the development department are responsible for seeing to it that the teams function well.

To emphasize that the creative vision is what matters most, we say we are "filmmaker led." There are really two leaders: the director and the producer. They form a strong partnership. They not only strive to make a great movie but also operate within time, budget, and people constraints. (Good artists understand the value of limits.) During production, we leave the operating decisions to the film's leaders, and we don't second-guess or micromanage them.

Indeed, even when a production runs into a problem, we do everything possible to provide support without undermining their authority. One way we do this is by making it possible for a director to solicit help from our "creative brain trust" of filmmakers. (This group is a pillar of our distinctive peer-based process for making movies – an important topic I'll return to in a moment.) If this advice doesn't suffice, we'll sometimes add reinforcements to the production – such as a writer or codirector – to provide specific skills or improve the creative dynamics of the film's creative leadership.

What does it take for a director to be a successful leader in this environment? Of course, our directors have to be masters at knowing how to tell a story that will translate into the medium of film. This means that they must have a unifying vision – one that will give coherence to the thousands of ideas that go into a movie – and they must be able to turn that vision into clear directives that the staff can implement. They must set people up for success by giving them all the information they need to do the job right without telling them how to do it. Each person on a film should be given creative ownership of even the smallest task.

Good directors not only possess strong analytical skills themselves but also can harness the analytical power and life experiences of their staff members. They are superb listeners and strive to understand the thinking behind every suggestion. They appreciate all contributions, regardless of where or from whom they originate, and use the best ones.

A Peer Culture

Of great importance – and something that sets us apart from other studios – is the way people at all levels support one another. Everyone is fully invested in helping everyone else turn out the best work. They really do feel that it's all for one and one for all. Nothing exemplifies this more than our creative brain trust and our daily review process.

The brain trust. This group consists of John and our eight directors (Andrew Stanton, Brad Bird, Pete Docter, Bob Peterson, Brenda Chapman, Lee Unkrich, Gary Rydstrom, and Brad Lewis). When a director and producer feel in need of assistance, they convene the group (and anyone else they think would be valuable) and show the current version of the work in progress. This is followed by a lively two-hour give-and-take discussion, which is all about making the movie better. There's no ego. Nobody pulls any punches to be polite. This works because all the participants have come to trust and respect one another. They know it's far better

GETTING REAL HELP Pixar's brain trust of directors offers advice on works in progress. But the production's leaders decide what to use and what to ignore.

to learn about problems from colleagues when there's still time to fix them than from the audience after it's too late. The problem-solving powers of this group are immense and inspirational to watch.

After a session, it's up to the director of the movie and his or her team to decide what to do with the advice; there are no mandatory notes, and the brain trust has no authority. This dynamic is crucial. It liberates the trust members, so they can give their unvarnished expert opinions, and it liberates the director to seek help and fully consider the advice. It took us a while to learn this. When we tried to export the brain trust model to our technical area, we found at first that it didn't work. Eventually, I realized why: We had given these other review groups some authority. As soon as we said, "This is purely peers giving feedback to each other," the dynamic changed, and the effectiveness of the review sessions dramatically improved.

The origin of the creative brain trust was *Toy Story*. During a crisis that occurred while making that film, a special relationship developed among John, Andrew, Lee, and Joe, who had remarkable and complementary skills. Since they trusted one another, they could have very intense and heated discussions; they always knew that the passion was about the story and wasn't personal. Over time, as other people from inside and outside joined our directors' ranks, the brain trust expanded to what it is today: a community of master filmmakers who come together when needed to help each other.

The dailies. This practice of working together as peers is core to our culture, and it's not limited to our directors and producers. One example is our daily reviews, or "dailies," a process for giving and getting constant feedback in a positive way that's based on practices John observed at Disney and Industrial Light & Magic (ILM), Lucasfilm's special-effects company.

At Disney, only a small senior group would look at daily animation work. Dennis Muren, ILM's legendary visual-effects supervisor, broadened the participation to include his whole special-effects crew. (John, who joined my computer group at Lucasfilm after leaving Disney, participated in these sessions while we were creating computer-animated effects for *Young Sherlock Holmes*.)

As we built up an animation crew for *Toy Story* in the early 1990s, John used what he had learned from Disney and ILM to develop our daily review process. People show work in an incomplete state to the whole animation crew, and although the director makes decisions, everyone is encouraged to comment.

OVERCOMING INHIBITIONS
Showing unfinished work each day liberates people to take risks and try new things because it doesn't have to be perfect the first time.

There are several benefits. First, once people get over the embarrassment of showing work still in progress, they become more creative. Second, the director or creative leads guiding the review process can communicate important points to the entire crew at the same time. Third, people learn from and inspire each other; a highly creative piece of animation will spark others to raise their game. Finally, there are no surprises at the end: When you're done, you're done. People's overwhelming desire to make sure their work is "good" before they show it to others increases the possibility that their finished version won't be what the director wants. The dailies process avoids such wasted efforts.

Technology + Art = Magic

Getting people in different disciplines to treat one another as peers is just as important as getting people within disciplines to do so. But it's much harder. Barriers include the natural class structures that arise in organizations: There always seems to be one function that considers itself and is perceived by others to be the one the organization values the most. Then there's the different languages spoken by different disciplines and even the physical distance between offices. In a creative business like ours, these barriers are impediments to producing great work, and therefore we must do everything we can to tear them down.

Walt Disney understood this. He believed that when continual change, or reinvention, is the norm in an organization and technology and art are together, magical things happen. A lot of people look back at Disney's early days and say, "Look at the artists!" They don't pay attention to his technological innovations. But he did the first sound in animation, the first color, the first compositing of animation with live action, and the first applications of xerography in animation production. He was always excited by science and technology.

At Pixar, we believe in this swirling interplay between art and technology and constantly try to use better technology at

Pixar's Operating Principles

1 Everyone must have the freedom to communicate with anyone.

2 It must be safe for everyone to offer ideas.

3 We must stay close to innovations happening in the academic community.

every stage of production. John coined a saying that captures this dynamic: "Technology inspires art, and art challenges the technology." To us, those aren't just words; they are a way of life that had to be established and still has to be constantly reinforced. Although we are a director- and producer-led meritocracy, which recognizes that talent is not spread equally among all people, we adhere to the following principles:

Everyone must have the freedom to communicate with anyone. This means recognizing that the decision-making hierarchy and communication structure in organizations are two different things. Members of any department should be able to approach anyone in another department to solve problems without having to go through "proper" channels. It also means that managers need to learn that they don't always have to be the first to know about something going on in their realm, and it's OK to walk into a meeting and be surprised. The impulse to tightly control the process is understandable given the complex nature of moviemaking, but problems are almost by definition unforeseen. The most efficient way to deal with numerous problems is to trust people to work out the difficulties directly with each other without having to check for permission.

It must be safe for everyone to offer ideas. We're constantly showing works in progress internally. We try to stagger who goes to which viewing to ensure that there are always fresh eyes, and everyone in the company, regardless of discipline or position, gets to go at some point. We make a concerted effort to make it safe to criticize by inviting everyone attending these showings to e-mail notes to the creative leaders that detail what they liked and didn't like and explain why.

We must stay close to innovations happening in the academic community. We strongly encourage our technical artists to publish their research and participate in industry conferences. Publishing may give away ideas, but it keeps us connected with the academic community. This connection is worth far more than any ideas we may have revealed: It helps us attract exceptional talent and reinforces the belief throughout the company that people are more important than ideas.

We try to break down the walls between disciplines in other ways, as well. One is a collection of in-house courses we offer, which we call Pixar University. It is responsible for training and cross-training people as they develop in their careers. But it also offers an array of optional classes – many of which I've taken – that give people from different disciplines the opportunity to mix and appreciate what everyone does. Some (screenplay writing, drawing, and sculpting) are directly related to our business; some (Pilates and yoga) are not. In a sculpting class will be rank novices as well as world-class sculptors who want to refine their skills. Pixar University helps reinforce the mind-set that we're all learning and it's fun to learn together.

Our building, which is Steve Jobs's brainchild, is another way we try to get people from different departments to interact. Most buildings are designed for some functional purpose, but ours is structured to maximize inadvertent encounters. At its center is a large atrium, which contains the cafeteria, meeting rooms, bathrooms, and mailboxes. As a result, everyone has strong reasons to go there repeatedly during the course of the workday. It's hard to describe just how valuable the resulting chance encounters are.

Staying on the Rails

Observing the rise and fall of computer companies during my career has affected me deeply. Many companies put together a phenomenal group of people who produced great products. They had the best engineers, exposure to the needs of customers, access to changing technology, and experienced management. Yet many made decisions at the height of their powers that were stunningly wrongheaded, and they faded into irrelevance. How could really smart people completely miss something so crucial to their survival? I remember asking myself more than once: "If we are ever successful, will we be equally blind?"

Many of the people I knew in those companies that failed were not very introspective. When Pixar became an independent company, I vowed we would be different. I realized that it's extremely difficult for an organization to analyze itself. It is uncomfortable and hard to be objective. Systematically fighting complacency and uncovering problems when your company is successful have got to be two of the toughest management challenges there are. Clear values, constant communication, routine postmortems, and the regular injection of outsiders who will challenge the status quo aren't enough. Strong leadership is also essential – to make sure people don't pay lip service to the values, tune out the communications, game the processes, and automatically discount newcomers' observations and suggestions. Here's a sampling of what we do:

Postmortems. The first we performed – at the end of *A Bug's Life* – was successful. But the success of those that followed varied enormously. This caused me to reflect on how to get more out of them. One thing I observed was that although people learn from the postmortems, they don't like to do them. Leaders naturally want to use the occasion to give kudos to their team members. People in general would rather talk about what went right than what went wrong. And after spending years on a film, everybody just wants to move on. Left to their own devices, people will game the system to avoid confronting the unpleasant.

There are some simple techniques for overcoming these problems. One is to try to vary the way you do the postmortems. By definition, they're supposed to be about lessons learned, so if you repeat the same format, you tend to find the same lessons, which isn't productive. Another is to ask each group to list the top five things they would do again and the top five things they wouldn't do. The balance between the positive and the negative helps make it a safer environment. In any event, employ lots of data in the review. Because we're a creative organization, people tend to assume that much of what we do can't be measured or analyzed. That's wrong. Most of our processes involve activities and deliverables that can be quantified. We keep track of the rates at which things happen, how often something has to be reworked, whether a piece of work was completely finished or not when it was sent to another department, and so on. Data can show things in a neutral way, which can stimulate discussion and challenge assumptions arising from personal impressions.

Fresh blood. Successful organizations face two challenges when bringing in new people with fresh perspectives. One is well-known – the not-invented-here syndrome. The other – the awe-of-the-institution syndrome (an issue with young new hires) – is often overlooked.

The former has not been a problem for us, thank goodness, because we have an open culture: Continually embracing change the way we do makes newcomers less threatening. Several prominent outsiders who have had a big impact on us (in terms of the exciting ideas they introduced and the strong people they attracted) were readily accepted. They include Brad Bird, who directed *The Incredibles* and *Ratatouille;* Jim Morris, who headed Industrial Light & Magic for years before joining Pixar as the producer of *WALL·E* and executive vice president of production; and Richard Hollander, a former executive of the special-effects studio Rhythm & Hues, who is leading an effort to improve our production processes.

The bigger issue for us has been getting young new hires to have the confidence to speak up. To try to remedy this, I make it a practice to speak at the orientation sessions for new hires, where I talk about the mistakes we've made and the lessons we've learned. My intent is to persuade them that we haven't gotten it all figured out and that we want everyone to question why we're doing something that doesn't seem to make sense to them. We do not want people to assume that because we are successful, everything we do is right.

Managers need to learn that it's OK to walk into a meeting and be surprised.

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For 20 years, I pursued a dream of making the first computer-animated film. To be honest, after that goal was realized – when we finished *Toy Story* – I was a bit lost. But then I realized the most exciting thing I had ever done was to help create the unique environment that allowed that film to be made. My new goal became, with John, to build a studio that had the depth, robustness, and will to keep searching for the hard truths that preserve the confluence of forces necessary to create magic. In the two years since Pixar's merger with Disney, we've had the good fortune to expand that goal to include the revival of Disney Animation Studios. It has been extremely gratifying to see the principles and approaches we developed at Pixar transform this studio. But the ultimate test of whether John and I have achieved our goals is if Pixar and Disney are still producing animated films that touch world culture in a positive way long after we two, and our friends who founded and built Pixar with us, are gone.

Ed Catmull *is a cofounder of Pixar and the president of Pixar and Disney Animation Studios.*

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New studies of the brain show that leaders can improve group performance by understanding the biology of empathy. **by Daniel Goleman and Richard Boyatzis**

Social Intelligence *and the Biology of* Leadership

IN 1998, ONE OF US, DANIEL GOLEMAN, published in these pages his first article on emotional intelligence and leadership. The response to "What Makes a Leader?" was enthusiastic. People throughout and beyond the business community started talking about the vital role that empathy and self-knowledge play in effective leadership. The concept of emotional intelligence continues to occupy a prominent space in the leadership literature and in everyday coaching practices. But in the past five years, research in the emerging field of social neuroscience – the study of what happens in the brain while people interact – is beginning to reveal subtle new truths about what makes a good leader.

Jean-François Podevin

The salient discovery is that certain things leaders do – specifically, exhibit empathy and become attuned to others' moods – literally affect both their own brain chemistry and that of their followers. Indeed, researchers have found that the leader-follower dynamic is not a case of two (or more) independent brains reacting consciously or unconsciously to each other. Rather, the individual minds become, in a sense, fused into a single system. We believe that great leaders are those whose behavior powerfully leverages the system of brain interconnectedness. We place them on the opposite end of the neural continuum from people with serious social disorders, such as autism or Asperger's syndrome, that are characterized by underdevelopment in the areas of the brain associated with social interactions. If we are correct, it follows that a potent way of becoming a better leader is to find authentic contexts in which to learn the kinds of social behavior that reinforce the brain's social circuitry. Leading effectively is, in other words, less about mastering situations – or even mastering social skill sets – than about developing a genuine interest in and talent for fostering positive feelings in the people whose cooperation and support you need.

The notion that effective leadership is about having powerful social circuits in the brain has prompted us to extend our concept of emotional intelligence, which we had grounded in theories of individual psychology. A more relationship-based construct for assessing leadership is *social intelligence*, which we define as a set of interpersonal competencies built on specific neural circuits (and related endocrine systems) that inspire others to be effective.

The idea that leaders need social skills is not new, of course. In 1920, Columbia University psychologist Edward Thorndike pointed out that "the best mechanic in a factory may fail as a foreman for lack of social intelligence." More recently, our colleague Claudio Fernández-Aráoz found in an analysis of new C-level executives that those who had been hired for their self-discipline, drive, and intellect were sometimes later fired for lacking basic social skills. In other words, the people Fernández-Aráoz studied had smarts in spades, but their inability to get along socially on the job was professionally self-defeating.

What's new about our definition of social intelligence is its biological underpinning, which we will explore in the following pages. Drawing on the work of neuroscientists, our own research and consulting endeavors, and the findings of researchers affiliated with the Consortium for Research on Emotional Intelligence in Organizations, we will show you how to translate newly acquired knowledge about mirror neurons, spindle cells, and oscillators into practical, socially intelligent behaviors that can reinforce the neural links between you and your followers.

Do Women Have Stronger Social Circuits?

People often ask whether gender differences factor into the social intelligence skills needed for outstanding leadership. The answer is yes and no. It's true that women tend, on average, to be better than men at immediately sensing other people's emotions, whereas men tend to have more social confidence, at least in work settings. However, gender differences in social intelligence that are dramatic in the general population are all but absent among the most successful leaders.

When the University of Toledo's Margaret Hopkins studied several hundred executives from a major bank, she found gender differences in social intelligence in the overall group but not between the most effective men and the most effective women. Ruth Malloy of the Hay Group uncovered a similar pattern in her study of CEOs of international companies. Gender, clearly, is not neural destiny.

Followers Mirror Their Leaders – Literally

Perhaps the most stunning recent discovery in behavioral neuroscience is the identification of *mirror neurons* in widely dispersed areas of the brain. Italian neuroscientists found them by accident while monitoring a particular cell in a monkey's brain that fired only when the monkey raised its arm. One day a lab assistant lifted an ice cream cone to his own mouth and triggered a reaction in the monkey's cell. It was the first evidence that the brain is peppered with neurons that mimic, or mirror, what another being does. This previously unknown class of brain cells operates as neural Wi-Fi, allowing us to navigate our social world. When we consciously or unconsciously detect someone else's emotions through their actions, our mirror neurons reproduce those emotions. Collectively, these neurons create an instant sense of shared experience.

Mirror neurons have particular importance in organizations, because leaders' emotions and actions prompt followers to mirror those feelings and deeds. The effects of activating neural circuitry in followers' brains can be very powerful. In a recent study, our colleague Marie Dasborough observed two groups: One received negative performance feedback accompanied by positive emotional signals – namely, nods and smiles; the other was given positive feedback that was delivered critically, with frowns and narrowed eyes. In subsequent interviews conducted to compare the emotional states of the two groups, the people who had received positive feedback accompanied by negative emotional signals reported feeling worse about their performance than did the participants who had received good-natured negative feedback. In effect, the delivery was more important than the message itself. And everybody knows that when people feel better, they perform better. So, if leaders hope to get the best out of their people, they should continue to be demanding but in ways that foster a positive mood in their teams. The old carrot-and-stick approach alone doesn't make neural sense; traditional incentive systems are simply not enough to get the best performance from followers.

Here's an example of what does work. It turns out that there's a subset of mirror neurons whose only job is to detect other people's smiles and laughter, prompting smiles and laughter in return. A boss who is self-controlled and humorless will rarely engage those neurons in his team members, but a boss who laughs and sets an easygoing tone puts those neurons to work, triggering spontaneous laughter and knitting his team together in the process. A bonded group is one that performs well, as our colleague Fabio Sala has shown in his research. He found that top-performing leaders elicited laughter from their subordinates three times as often, on average, as did midperforming leaders. Being in a good mood, other research finds, helps people take in information effectively and respond nimbly and creatively. In other words, laughter is serious business.

It certainly made a difference at one university-based hospital in Boston. Two doctors we'll call Dr. Burke and Dr. Humboldt were in contention for the post of CEO of the corporation that ran this hospital and others. Both of them headed up departments, were superb physicians, and had published many widely cited research articles in prestigious medical journals. But the two had very different personalities. Burke was intense, task focused, and impersonal. He was a relentless perfectionist with a combative tone that kept his staff continually on edge. Humboldt was no less demanding, but he was very approachable, even playful, in relating to staff, colleagues, and patients. Observers noted that people smiled and teased one another – and even spoke their minds – more in Humboldt's department than in Burke's. Prized talent often ended up leaving Burke's department; in contrast, outstanding folks gravitated to Humboldt's warmer working climate. Recognizing Humboldt's socially intelligent leadership style, the hospital corporation's board picked him as the new CEO.

The "Finely Attuned" Leader

Great executives often talk about leading from the gut. Indeed, having good instincts is widely recognized as an advantage for a leader in any context, whether in reading the mood of one's organization or in conducting a delicate negotiation with the competition. Leadership scholars characterize this talent as an ability to recognize patterns, usually born of extensive experience. Their advice: Trust your gut, but get lots of input as you make decisions. That's sound practice, of course, but managers don't always have the time to consult dozens of people.

Findings in neuroscience suggest that this approach is probably too cautious. Intuition, too, is in the brain, produced in part by a class of neurons called *spindle cells* because of their shape. They have a body size about four times that of other brain cells, with an extra-long branch to make attaching to other cells easier and transmitting thoughts and feelings to them quicker. This ultrarapid connection of emotions, beliefs, and judgments creates what behavioral scientists call our social guidance system. Spindle cells trigger neural networks that come into play whenever we have to choose the best response among many – even for a task as routine as prioritizing a to-do list. These cells also help us gauge whether someone is trustworthy and right (or wrong) for a job. Within one-twentieth of a second, our spindle cells fire with information about how we feel about that person; such "thin-slice" judgments can be very accurate, as follow-up metrics reveal. Therefore, leaders should not fear to act on those judgments, provided that they are also attuned to others' moods.

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Watch an interview with Daniel Goleman at **goleman.hbr.org**.

Such attunement is literally physical. Followers of an effective leader experience rapport with her – or what we and our colleague Annie McKee call "resonance." Much of this feeling arises unconsciously, thanks to mirror neurons and spindle-cell circuitry. But another class of neurons is also involved: *Oscillators* coordinate people physically by regulating how and when their bodies move together. You can see oscillators in action when you watch people about to kiss; their movements look like a dance, one body responding to the other seamlessly. The same dynamic occurs when two cellists play together. Not only do they hit their notes in unison, but thanks to oscillators, the two musicians' right brain hemispheres are more closely coordinated than are the left and right sides of their individual brains.

Firing Up Your Social Neurons

The firing of social neurons is evident all around us. We once analyzed a video of Herb Kelleher, a cofounder and former CEO of Southwest Airlines, strolling down the corridors of Love Field in Dallas, the airline's hub. We could practically see him activate the mirror neurons, oscillators, and other social circuitry in each person he encountered. He offered beaming smiles, shook hands with customers as he told them how much he appreciated their business, hugged employees as he thanked them for their good work. And he got back exactly what he gave. Typical was the flight attendant whose face lit up when she unexpectedly encountered her boss. "Oh, my honey!" she blurted, brimming with warmth, and gave him a big hug. She later explained, "Everyone just feels like family with him."

Unfortunately, it's not easy to turn yourself into a Herb Kelleher or a Dr. Humboldt if you're not one already. We know of no clear-cut methods to strengthen mirror neurons, spindle cells, and oscillators; they activate by the thousands per second during any encounter, and their precise firing patterns remain elusive. What's more, self-conscious attempts to display social intelligence can often backfire. When you make an intentional effort to coordinate movements with another person, it is not only oscillators that fire. In such situations the brain uses other, less adept circuitry to initiate and guide movements; as a result, the interaction feels forced.

The only way to develop your social circuitry effectively is to undertake the hard work of changing your behavior (see "Primal Leadership: The Hidden Driver of Great Performance," our December 2001 HBR article with Annie McKee). Companies interested in leadership development need to begin by assessing the willingness of individuals to enter a change program. Eager candidates should first develop a personal vision for change and then undergo a thorough diagnostic assessment, akin to a medical workup, to identify areas of social weakness and strength. Armed with the feedback, the aspiring leader can be trained in specific areas where developing better social skills will have the greatest payoff. The training can range from rehearsing better ways of interacting and trying them out at every opportunity, to being shadowed by a coach

Are You a Socially Intelligent Leader?

To measure an executive's social intelligence and help him or her develop a plan for improving it, we have a specialist administer our behavioral assessment tool, the Emotional and Social Competency Inventory. It is a 360-degree evaluation instrument by which bosses, peers, direct reports, clients, and sometimes even family members assess a leader according to seven social intelligence qualities.

We came up with these seven by integrating our existing emotional intelligence framework with data assembled by our colleagues at the Hay Group, who used hard metrics to capture the behavior of top-performing leaders at hundreds of corporations over two decades. Listed here are each of the qualities, followed by some of the questions we use to assess them.

EMPATHY

- ☐ **Do you understand** what motivates other people, even those from different backgrounds?
- ☐ **Are you sensitive** to others' needs?

ATTUNEMENT

- ☐ **Do you listen attentively** and think about how others feel?
- ☐ **Are you attuned** to others' moods?

and then debriefed about what he observes, to learning directly from a role model. The options are many, but the road to success is always tough.

How to Become Socially Smarter

To see what social intelligence training involves, consider the case of a top executive we'll call Janice. She had been hired as a marketing manager by a *Fortune* 500 company because of her business expertise, outstanding track record as a strategic thinker and planner, reputation as a straight talker, and ability to anticipate business issues that were crucial for meeting goals. Within her first six months on the job, however, Janice was floundering; other executives saw her as aggressive and opinionated, lacking in political astuteness, and careless about what she said and to whom, especially higher-ups.

To save this promising leader, Janice's boss called in Kathleen Cavallo, an organizational psychologist and senior consultant with the Hay Group, who immediately put Janice through a 360-degree evaluation. Her direct reports, peers, and managers gave Janice low ratings on empathy, service orientation, adaptability, and managing conflicts. Cavallo learned more by having confidential conversations with the people who worked most closely with Janice. Their complaints focused on her failure to establish rapport with people or even notice their reactions. The bottom line: Janice was adept neither at reading the social norms of a group nor at recognizing people's emotional cues when she violated those norms. Even more dangerous, Janice did not realize she was being too blunt in managing upward. When she had a strong difference of opinion with a manager, she did not sense when to back off. Her "let's get it all on the table and mix it up" approach was threatening her job; top management was getting fed up.

When Cavallo presented this performance feedback as a wake-up call to Janice, she was of course shaken to discover that her job might be in danger. What upset her more, though, was the realization that she was not having her desired impact on other people. Cavallo initiated coaching sessions in which Janice would describe notable successes and failures from her day. The more time Janice spent reviewing these incidents, the better she became at recognizing the difference between expressing an idea with conviction and acting like a pit bull. She began to anticipate how people might react to her in a meeting or during a negative performance review; she rehearsed more-astute ways to present her opinions; and she developed a personal vision for change. Such mental preparation activates the social circuitry of the brain, strengthening the neural connections you need to act effectively; that's why Olympic athletes put hundreds of hours into mental review of their moves.

At one point, Cavallo asked Janice to name a leader in her organization who had excellent social intelligence skills. Janice identified a veteran senior manager who was masterly both in the art of the critique and at expressing disagreement in meetings without damaging relationships. She asked him to

ORGANIZATIONAL AWARENESS

- ☐ **Do you appreciate** the culture and values of the group or organization?
- ☐ **Do you understand social networks** and know their unspoken norms?

INFLUENCE

- ☐ **Do you persuade others** by engaging them in discussion and appealing to their self-interests?
- ☐ **Do you get support** from key people?

DEVELOPING OTHERS

- ☐ **Do you coach** and mentor others with compassion and personally invest time and energy in mentoring?
- ☐ **Do you provide feedback** that people find helpful for their professional development?

INSPIRATION

- ☐ **Do you articulate a compelling vision,** build group pride, and foster a positive emotional tone?
- ☐ **Do you lead** by bringing out the best in people?

TEAMWORK

- ☐ **Do you solicit input** from everyone on the team?
- ☐ **Do you support** all team members and encourage cooperation?

help coach her, and she switched to a job where she could work with him – a post she held for two years. Janice was lucky to find a mentor who believed that part of a leader's job is to develop human capital. Many bosses would rather manage around a problem employee than help her get better. Janice's new boss took her on because he recognized her other strengths as invaluable, and his gut told him that Janice could improve with guidance.

Before meetings, Janice's mentor coached her on how to express her viewpoint about contentious issues and how to talk to higher-ups, and he modeled for her the art of performance feedback. By observing him day in and day out, Janice learned to affirm people even as she challenged their positions or critiqued their performance. Spending time with a living, breathing model of effective behavior provides the perfect stimulation for our mirror neurons, which allow us to directly experience, internalize, and ultimately emulate what we observe.

Janice's transformation was genuine and comprehensive. In a sense, she went in one person and came out another. If you think about it, that's an important lesson from neuroscience: Because our behavior creates and develops neural networks, we are not necessarily prisoners of our genes and our early childhood experiences. Leaders can change if, like Janice, they are ready to put in the effort. As she progressed in her training, the social behaviors she was learning became more like second nature to her. In scientific terms, Janice was strengthening her social circuits through practice. And as others responded to her, their brains connected with hers more profoundly and effectively, thereby reinforcing Janice's circuits in a virtuous circle. The upshot: Janice went from being on the verge of dismissal to getting promoted to a position two levels up.

A few years later, some members of Janice's staff left the company because they were not happy – so she asked Cavallo to come back. Cavallo discovered that although Janice had mastered the ability to communicate and connect with management and peers, she still sometimes missed cues from her direct reports when they tried to signal their frustration. With more help from Cavallo, Janice was able to turn the situation around by refocusing her attention on her staff's emotional needs and fine-tuning her communication style. Opinion surveys conducted with Janice's staff before and after Cavallo's second round of coaching documented dramatic increases in their emotional commitment and intention to stay in the organization. Janice and the staff also delivered a 6% increase in annual sales, and after another successful year she was made president of a multibillion-dollar unit. Companies can clearly benefit a lot from putting people through the kind of program Janice completed.

Hard Metrics of Social Intelligence

Our research over the past decade has confirmed that there is a large performance gap between socially intelligent and socially unintelligent leaders. At a major national bank, for example, we found that levels of an executive's social intelligence competencies predicted yearly performance appraisals more powerfully than did the emotional intelligence competencies of self-awareness and self-management. (For a brief explanation of our assessment tool, which focuses on seven dimensions, see the exhibit "Are You a Socially Intelligent Leader?")

The Chemistry of Stress

When people are under stress, surges in the stress hormones adrenaline and cortisol strongly affect their reasoning and cognition. At low levels, cortisol facilitates thinking and other mental functions, so well-timed pressure to perform and targeted critiques of subordinates certainly have their place. When a leader's demands become too great for a subordinate to handle, however, soaring cortisol levels and an added hard kick of adrenaline can paralyze the mind's critical abilities. Attention fixates on the threat from the boss rather than the work at hand; memory, planning, and creativity go out the window. People fall back on old habits, no matter how unsuitable those are for addressing new challenges.

Poorly delivered criticism and displays of anger by leaders are common triggers of hormonal surges. In fact, when laboratory scientists want to study the highest levels of stress hormones, they simulate a job interview in which an applicant receives intense face-to-face criticism – an analogue of a boss's tearing apart a subordinate's performance. Researchers likewise find that when someone who is very important to a person expresses contempt or disgust toward him, his stress circuitry triggers an explosion of stress hormones and a spike in heart rate by 30 to 40 beats per minute. Then, because of the interpersonal dynamic of mirror neurons and oscillators, the tension spreads to other people. Before you know it, the destructive emotions have infected an entire group and inhibited its performance.

Leaders are themselves not immune to the contagion of stress. All the more reason they should take the time to understand the biology of their emotions.

The way to develop your social circuitry is to **undertake the hard work of changing your behavior.**

Social intelligence turns out to be especially important in crisis situations. Consider the experience of workers at a large Canadian provincial health care system that had gone through drastic cutbacks and a reorganization. Internal surveys revealed that the frontline workers had become frustrated that they were no longer able to give their patients a high level of care. Notably, workers whose leaders scored low in social intelligence reported unmet patient-care needs at three times the rate – and emotional exhaustion at four times the rate – of their colleagues who had supportive leaders. At the same time, nurses with socially intelligent bosses reported good emotional health and an enhanced ability to care for their patients, even during the stress of layoffs (see the sidebar "The Chemistry of Stress"). These results should be compulsory reading for the boards of companies in crisis. Such boards typically favor expertise over social intelligence when selecting someone to guide the institution through tough times. A crisis manager needs both.

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As we explore the discoveries of neuroscience, we are struck by how closely the best psychological theories of development map to the newly charted hardwiring of the brain. Back in the 1950s, for example, British pediatrician and psychoanalyst D.W. Winnicott was advocating for play as a way to accelerate children's learning. Similarly, British physician and psychoanalyst John Bowlby emphasized the importance of providing a secure base from which people can strive toward goals, take risks without unwarranted fear, and freely explore new possibilities. Hard-bitten executives may consider it absurdly indulgent and financially untenable to concern themselves with such theories in a world where bottom-line performance is the yardstick of success. But as new ways of scientifically measuring human development start to bear out these theories and link them directly with performance, the so-called soft side of business begins to look not so soft after all.

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"So, what makes you think you'd fit in?"

Thomas Cheney

7 Ways to Fail Big

by Paul B. Carroll and Chunka Mui

Lessons from the most inexcusable business failures of the past 25 years

BUSINESSES RACK UP LOSSES for lots of reasons – reasons not always under their control. The U.S. airlines can't be faulted for their grounding following the 9/11 attacks, to be sure. But in our recent study of 750 of the most significant U.S. business failures of the past quarter century, we found that nearly half could have been avoided. In most instances, the avoidable fiascoes resulted from flawed

Asaf Hanuka

strategies – not inept execution, which is where most business literature plants the blame. These flameouts – involving significant investment write-offs, the shuttering of unprofitable lines of business, or bankruptcies – accounted for many hundreds of billions of dollars in losses. Moreover, had the executives in charge taken a look at history, they could have saved themselves and their investors a great deal of trouble. Again and again in our study, seven strategies accounted for failure, and evidence of their inadvisability was there for the asking.

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Download an audio slideshow about how to avoid failure at fail.hbr.org.

Take adjacency moves. Frequently what appears to be an adjacent market turns out to be a different business altogether. Laidlaw, the largest school-bus operator in North America, bought heavily into the ambulance business in the 1990s, figuring its logistics expertise would carry over to that kind of enterprise. It turned out that operating ambulances isn't really a transportation business – it's part of the intricate and highly regulated medical business. Laidlaw struggled with negotiating contracts and collecting payments for its services, before selling off its ambulance units at a considerable loss.

The underlying business moves we discuss here aren't always bad ideas; they've generated a tremendous amount of wealth for some companies. But they are alluring in ways that can tempt executives to disregard danger signals. In this article we'll describe the seven risky strategies and offer advice on how to resist their charms.

The Synergy Mirage

Often a company seeks growth by joining forces with another firm that has complementary strengths. The whole isn't always greater than the sum of its parts, however. Look at the 1999 merger of disability insurers Unum and Provident, which operated in the group and individual markets, respectively. Executives thought that each company's salespeople would be able to sell the other's products, but the two businesses served entirely different customers through different models. Unum's sales reps called on corporations to sell group policies; Provident's crafted sales pitches for individuals. They had different skills and no particular desire to collaborate on cross-selling. Joining the two companies proved costly and complicated. The merger just ended up producing higher prices for everyone and an aggressive posture toward denying claims, which provoked a series of lawsuits that imperiled UnumProvident's reputation and finances. Unum eventually undid the merger, dropping the Provident name and exiting the individual market in 2007. Its stock price plummeted and is still less than half what it was in 1999, and the company continues to cope with class action suits from claimants.

Even when synergies do exist, excitement over them can lead a company astray. Quaker Oats overpaid horribly for Snapple, which it acquired to freshen up a dowdy brand and gain access to Snapple's direct-store-delivery system and network of independent distributors. At the time, analysts warned that the $1.7 billion price might be as much as $1 billion too high. Quaker never dug deep enough to understand Snapple's distributors, who fought efforts to push Gatorade and other Quaker products. Just three years after the acquisition, Quaker sold Snapple for $300 million. Synergies can prove problematic in more subtle ways, too, as when executives focus so much management time and energy on capturing them that they lose out on other, more fruitful opportunities. And clashes of culture, skills, or systems can make it impossible to achieve even synergies that seem easy and obvious.

Faulty Financial Engineering

Aggressive financial practices don't necessarily lead to fraud, but they can be dicey. The stakes are high – brands and reputations and even entire businesses can crumble as a consequence, and corporate officers may be exposed to massive fines and even prison.

If subprime mortgage lenders and the banks that supported them had paid attention to the story of Green Tree Financial, they might have realized how dangerous lending to unqualified buyers was. A darling of both Main Street and Wall Street in the 1990s, Green Tree made its fortunes by offering 30-year mortgages on trailer homes – which depreciate rapidly and can have a life span as short as 10 years. Three years after a $50,000 purchase, a home owner might be stuck with an asset worth $25,000 while owing more than $49,000 in principal. At that point, defaulting starts to look pretty attractive. All the while, Green Tree followed aggressive "gain on sale" accounting methods to record profits, basing its calculations on unrealistic assumptions about defaults and prepayments. With profits based on loan origination, there was also little incentive to qualify buyers.

Attracted by Green Tree's rapid growth, Conseco, an Indiana-based life and health insurer, bought the firm for $6.5 billion in 1998 in the hope of creating a broader financial services company, only to find itself stuck with a house of cards. Conseco ultimately took almost $3 billion in write-offs and special charges related to Green Tree, essentially erasing all profits earned by the unit between 1994 and 2001. CEO Steve Hilbert resigned in April 2000, and Conseco filed for Chapter 11 bankruptcy protection in 2002 – reportedly the third-largest bankruptcy in U.S. history at the time.

The rise and fall of Green Tree and its ensnarling of Conseco illuminate two problems with financial engineering strategies: First, they can produce flawed products, such as easy-credit mortgages, that attract customers in the short term but expose both buyer and seller to excessive risk over time. Second, they encourage further hopelessly optimistic borrowing to finance more investment. Green Tree's model was elegant in that the firm could borrow short-term funds at low rates and lend at much higher rates – but at the same time preposterous, because the machine seized up as soon as the flaws in the underlying mortgage product became apparent.

Overly clever financial reporting is also risky, especially when it involves cutting corners to increase profits and deliver better bonuses. Such techniques tend to veer toward fraud, even when outside auditors have blessed them. Like other aggressive practices, they're powerfully addictive: Investors reward increased profits, which leads the company to scramble for even greater creativity.

Stubbornly Staying the Course

Redoubling your investment in your current strategy in response to market signals is a strategy in itself, and it can lead to disaster. Executives too often kid themselves into thinking that a problem isn't so severe or delay any reaction until it is too late. Eastman Kodak stuck to its core in the face of a blatant danger: digital photography. Company executives had made a detailed analysis of the threats posed by digital technology as far back as 1981 (when Sony introduced the first commercial electronic camera, the Mavica) but couldn't shake their attachment to prints and traditional processing. The margins were hard to pass up as well – 60% on film, chemicals, and processing, versus 15% on digital products. Digital technology also eliminated the huge recurring revenue stream that came from film and reprints (though some companies – HP and Epson – now profit from recurring revenues from ink cartridges for printers).

This is a common reason companies don't change course: The economics of the new model don't measure up to the economics of the old. Companies also falter because they don't consider all the options. Kodak's executives couldn't fathom a world in which images were evanescent and never printed. The company fought only a rear-guard action against digital cameras and didn't make a big move into the space until the early 2000s. It now has a share of the online photo-posting market, but its hesitation was costly: Over the past decade, Kodak has lost 75% of its stock market value. As of 2007, the company had fewer than a third of the number of employees it had 10 years earlier.

Pager company Mobile Media had even less of an excuse to stand by its strategy, because pagers were essentially a fad that lasted only several years. They were a status symbol in the mid-1990s, when cell phones were still bulky and calls expensive. But even as cellular technology followed Moore's law, Mobile Media acquired other pager companies and focused on designing new-generation technologies that nobody wanted. Following a purge of senior executives, Mobile Media filed for bankruptcy in January 1997. But the brunt of the decline in paging was borne by Arch Communications, which bought Mobile Media in 1999.

It isn't just fast-moving technology companies that fatally ignore new threats. Pillowtex was an old-line company that manufactured pillows, comforters, and towels. It grew steadily for decades – largely through acquisition – and by 1995 reached annual sales of almost half a billion dollars. In 1994, however, the United States began to phase out quotas on imports. Other companies immediately began outsourcing production to developing countries so they could compete with low-price imports, but Pillowtex redoubled its acquisition efforts, hoping that efficiencies from scale would give it an edge. The company's SEC filings from the late 1990s barely mention outsourcing as an option, instead highlighting the $240 million that Pillowtex spent on new, efficient machinery for its U.S. plants in 1998 alone. Two bankruptcies later, the company shut down in 2003 and was liquidated. Although part of the company's rationale for keeping manufacturing in the United States was to protect American workers, 6,450 lost their jobs. The layoff was the largest in the history of the U.S. textile industry.

Pseudo-Adjacencies

Adjacent-market strategies attempt to build on core organizational strengths to expand into a related business – by, say, selling new products to existing customers, or existing products to new customers or through new channels. Such strategies are often sensible; they fueled much of General Electric's growth under Jack Welch. But in our research we found many cases where ill-conceived adjacencies brought down even storied firms. Oglebay Norton, a regional steel provider, is just one example. After 143 years the Cleveland-based company was looking to diversify because steel was in decline. Limestone seemed like a logical choice because Oglebay's shipping business was already hauling it for its steel mills. Limestone is used in steel production to separate impurities, which are removed before molten iron is turned into steel. It has many other industrial uses, especially in production.

Oglebay began buying up limestone quarries, but it lacked a fundamental understanding of the limestone business. For one thing, iron ore was shipped on the Great Lakes, mostly on 1,000-footers, but limestone often needed to be transported on rivers to get closer to customers. That required much smaller vessels, which Oglebay didn't have in its fleet. The company filed for bankruptcy on February 23, 2004, with $440 million of debt, most of which was incurred as part of the push into limestone. It would emerge from bankruptcy

Avoiding Disasters: The Devil's Advocate

Devising a new strategy is heady stuff, and decision makers can quickly lose their objectivity. Even companies that have strong internal safeguards against failure can overlook the questions that might uncover unfounded assumptions, unattainable forecasts, untreated deal fever, or otherwise flawed thinking. Steve Hilbert, the Conseco CEO who acquired Green Tree Financial, had a rigorous acquisition process and a crack team, both honed by dozens of deals over almost two decades. Yet he paid an exorbitant premium for a company that was clearly imperiled, in spite of outright skepticism from investors and analysts. Any internal doubts were either muffled or unheeded, which just underscores how hard it is to tell a CEO that his rousing vision (in Hilbert's case, creating a financial services Wal-Mart) is flawed.

That's why we recommend that companies institute a formal review by a devil's advocate who is truly separate from the strategy-development process and has explicit license to ask tough questions. The deal process of Pitney Bowes, the mail management company that has acquired more than 80 companies since 2000, includes two reviews by people who were not personally involved in the early planning. (See the sidebar, "Questions Every Company Should Ask," for the type of queries that can produce useful insights.) Of course, CEOs often encourage questions merely for the sake of appearances and may strike back at naysayers, so the internal devil's advocate model has its limits.

Setting up a final line of defense – a rigorous "last chance" hearing by an objective, independent panel – will counter that problem. It's best to convene the panel toward the end of the strategy-formulation process, to keep it separate from that process, but before it's too late to turn back. Some companies successfully use a devil's advocate review earlier to build consensus or even use it after an acquisition to identify potential problems. Our research uncovered some guiding principles that ensure constructive discourse, no matter when the review takes place.

Make the process transparent to the board – with limits. CEOs may resist this approach on the grounds that it invites directors to meddle with their authority. Transparency is usually more palatable to CEOs, however, if everyone involved understands the distinction between governance and management. As long as boards don't attempt to take over the management of the business, they have every right to understand and react to CEOs' decisions. Some CEOs have even used the independent review as a tool for getting the board's buy-in to an otherwise controversial strategy.

Establish a limited charter and clear ground rules. The company should define explicit parameters for the scope and conduct of the panel and the ultimate use of its findings, to keep the discussion from ranging too far and uncomfortable findings from being buried. Ground rules will also discourage panel members from coming in with their own agendas.

Panelists should set aside their own preconceptions of the "right" answer and should stay in the real world, rather than compare strategies with some model of perfection, because almost no strategy could bear up to such scrutiny. The goal is to figure out whether the strategy is the best alternative, warts and all.

but never recover its footing. After selling off its fleet piecemeal to retire its debt, it was acquired by Carmeuse North America.

Four patterns emerged among the failed adjacency moves in our research. The first was that a change in the company's core business, rather than some great opportunity in the adjacent market, drove the move – witness Oglebay Norton's desperation to reduce its reliance on steel. A second was that the company lacked expertise in the adjacent markets, leading it to misjudge acquisitions and mismanage competitive challenges. Avon made this mistake with a move into health care in the early 1980s, including the acquisition of medical-equipment-rental businesses and substance-abuse centers – a strategy justified by its "culture of caring." But these acquisitions did nothing to build on Avon's core asset, its door-to-door sales force, and overlooked the regulatory realities, in which it had no expertise. Avon took a bath. After significant losses, it took a total charge of $545 million for dismantling its health care business in 1988.

The third recipe for disaster was overestimating the strength or importance of the capabilities in a core business. Successful companies are particularly prone to this; their ability to achieve in their own market makes them overly optimistic about their prospects in others. Laidlaw, the school-bus operator, fell victim to this type of thinking when it figured it could leverage its considerable expertise in logistics in the ambulance services business and went on a buying spree. The company suffered big losses in the ambulance business, taking a $1.8 billion write-down on it in 2000.

Finally, adjacency strategies tended to flop when a company overestimated its hold on customers. Just because people buy one service from you doesn't mean they'll buy others. Several utilities seeking to expand in the mid-1980s fell prey to this kind of thinking. When regulators began threatening to cut rates, utilities looked for opportunities in other industries. Some made a classic mistake: They jumped into high-growth markets without having any idea about whether they

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The conduct of the review itself should be restrained. The devil's advocate is not an inquisition, and the managers who designed the strategy will feel defensive as it is. The review should explore facts, not feelings, intuition, or emotion, and should focus on aspects of the strategy that are pivotal to its success, not on minor defects.

Organize for success. The credibility and effectiveness of the review hinge on the credibility and position of the review's leader, who should be outside the management hierarchy directly associated with the proposed strategy and have no stake in the outcome of the review. A corporate executive or manager from a different unit might lead a business-unit-level devil's advocate review. An independent board member or some other seasoned outsider familiar with the organization, such as a retired executive with no ax to grind, might lead a corporate-level review.

Panel members should provide a fresh point of view, not replicate existing expertise – the panel is not a smarter set of experts. Good panelists must be able to ask broad and open questions that tease out the systems-level assumptions, issues, and consequences of any strategy. Two personality types often make poor panelists: people who come to quick conclusions and then advocate their own position (the greater the expertise, the greater tendency to fit this profile); and overly empathetic people, who may identify quickly with the managers responsible for the plan and readily accept their assumptions.

Focus on the strategy, not the process. The goal isn't to check that all the right steps were taken. At the end of the day, the strategy will stand on its own, or not.

Reviewers should ask for a detailed written description of the strategy – not spreadsheets and slides. The latter make it easy to gloss over the details and leave much to reader interpretation. Bruce Nolop, Pitney Bowes's former CFO, observed in this magazine, "I've been amazed at how many elements of a deal that seemed clear in PowerPoint can fall apart when they're subjected to prose. In bullet-point format, the rationale for a deal might be summed up in a phrase, such as 'cross-selling.' But a memorandum demands clarity about exactly who is cross-selling to whom – and how and why." (See "Rules to Acquire By," September 2007.)

Next examine and test the strategy's underlying assumptions. One such technique is the Strategic Assumptions Surfacing and Testing process, designed by Ian Mitroff, Richard Mason, and Jim Emshoff (and taught to us by Vince Barabba). In it participants organize into groups with divergent experiences and perspectives and go through a process of debate and role-playing that identifies areas where the strategy may be vulnerable.

Deliver questions, not answers. The purpose of the review is not to suggest alternative approaches. The review team might well leave the patient chopped up on the table, if that is warranted. While this might sound harsh, it's important to head off any attempt to replicate the strategy process to provide "better" answers. That's just not possible in the short window of the review. The product of the review should be a report that summarizes and synthesizes the team's discussions and findings.

Come to closure. More than once we've seen leaders exercise the equivalent of a "pocket veto" of a review team's findings. The final call belongs to management, but at the very least, some type of formal response to the work of the team should be built into the process.

were qualified to operate in them. They thought they could simply leverage their customer bases and sell them products like life insurance, but they found few buyers.

Bets on the Wrong Technology

The huge rewards for breakthrough products and services understandably inspire many companies to search relentlessly for the next Google or eBay or iPod. Still, in our research we discovered that many technology-dependent strategies were ill-conceived from the get-go. No amount of luck or sophisticated execution could have saved them. To keep pursuing the strategies that produced these failures – some quite spectacular – companies had to go to great lengths to deceive themselves.

Motorola's Iridium satellite-telephone unit – a $5 billion venture that filed for Chapter 11 less than a year after the phone system went live – is widely cited as a failure of execution or marketing. In fact, the failure stemmed from a misguided captivation with technology. The project began in the 1980s to solve a legitimate problem: Cell phones were expensive and lacked global connectivity, and existing satellite alternatives were cumbersome and unreliable. But as Motorola pursued its development plans, it ignored its own engineers' warnings that the ultimate product would share the limitations of early 1980s cellular technology even as cell phones got better and cheaper with every passing year. Motorola was so enamored with its technology that its market research amounted to little more than marketing. For instance, when it asked if customers would like a global portable phone for a "reasonable price," it didn't define "reasonable" as an initial outlay of about $3,000, plus monthly charges and pricey minutes; and its description of a phone that would "fit in your pocket" assumed that your pocket would hold a brick.

Federal Express made a similar mistake in the mid-1980s with Zapmail, a service whereby couriers would pick up paper documents and deliver them to a nearby processing center, where they would be faxed to another processing center, close to the destination, and delivered by courier to the recipient, all within two hours. The price was $35 for up to five pages, with a discount and faster delivery if the customer brought the documents into a FedEx office. At the time, few companies owned fax machines, because they were expensive and transmission quality was often poor. As prices fell and the technology improved rapidly, fax machines proliferated; soon it seemed silly to use FedEx as an intermediary. In 1986, FedEx shut Zapmail down, taking a $340 million pretax write-off after losing $317 million during its two years of service.

Rushing to Consolidate

As industries mature, the number of companies in them diminishes. Holdouts have an incentive to combine and reduce capacity and overhead and gain purchasing and pricing power. Our research shows that it is sometimes better to sit back and let others fumble through consolidation. Though there's more glory in being the buyer, it may be wiser to sell and pocket the cash before industry conditions deteriorate.

Take the demise of Ames Department Stores. The company pioneered the concept of discount retailing in rural areas four years before Sam Walton got into the game. But it got reckless in its attempts to build a national presence. In its zeal to compete with Wal-Mart, Ames made a series of acquisitions, without adequately considering what it would take to win that battle. The moves didn't build on its core strength – merchandising – and exacerbated its greatest weaknesses: back-office systems like accounting. For instance, after Ames acquired discount chain G.C. Murphy in 1985, it suffered an enormous amount of shrinkage (industry speak for theft) because it had no system for checking inventory. Disgruntled Murphy's employees were reportedly stealing goods off delivery trucks and then logging complete shipments into stores. In 1987, Ames lost $20 million worth of merchandise and couldn't tell why. Even as the company struggled to integrate G.C. Murphy, Ames's managers went for another, bigger, takeover – Zayre, for which it paid $800 million, a glaring overpayment. The company filed for bankruptcy in 1990 but recovered, only to make the same mistake again. After struggling with the disastrous acquisition of Hills Department Stores, Ames again filed for bankruptcy in 2000 and was liquidated in 2002.

Consolidation plays are subject to several kinds of errors. For one thing, you may be buying problems along with assets. Ames repeatedly overlooked the fact that many of the stores it bought were damaged goods. For another, increased complexity may lead to diseconomies of scale. Systems that work well for a business of a certain size may break as a company grows. USAir bought Pacific Southwest Air for $385 million

Questions Every Company Should Ask

Had they tested their strategies by asking a few tough questions, most of the companies in our study could have stopped themselves from making ill-fated moves. These are the issues that devil's advocates, internal and external, should explore.

Is this a realistic strategy for long-term success? One of the companies we studied, Green Tree Financial, prospered in the 1990s by selling 30-year mortgages to unqualified buyers on trailer homes, which depreciate rapidly and may have a life span as short as 10 years. Did anyone ask, Is that a sustainable model? Green Tree sold itself at a bloated price to Conseco, which later filed for Chapter 11.

A strategy must be able to stand up to the sunshine: How would it look on the front page of the *Wall Street Journal?* Such a question might have prevented some cases of fraud or even close calls. Tyco, for instance, probably wouldn't have used such aggressive accounting methods for acquisitions if it had realized they'd be scrutinized by the media. The strategy must also be able to weather storms. Loewen Group attracted numerous investors during its funeral-home acquisition spree but crashed when the death rate tapered off a bit.

What can we learn from history? A thoughtful review of the past might have prevented a number of the failures we explored. When insurer Unum merged with Provident in 1999 in an attempt at synergy – the companies were in the group and individual disability markets, respectively – the move flopped. In their fervor to complete the deal, Unum's executives overlooked the fact that, not long before the merger, Unum had exited the very line of business that Provident was bringing to the table. A devil's advocate might have asked, Why did we get out of the business? Might we draw some lessons about the ability to cross-sell between individual and group disability customers?

A superficial look back can be counterproductive, however. One client we worked with suffered a high-profile failure thanks to an ill-conceived joint venture. For almost a decade afterward, most of its managers immediately rejected any potential partnership. They were looking at history but without nuance and context.

Do vital information and dissenting views about strategies reach decision makers? Our research showed that usually someone in the organization recognized that a strategy was doomed; the information just didn't reach the right person. Plenty of people at Unum had firsthand knowledge of how tough it would be to make a go of it in the personal disability market, yet their concerns either didn't reach or didn't influence strategy makers. And in the late 1980s and early 1990s, many IBM employees knew that OS/2 didn't stand a chance against Windows, yet their convictions didn't get to the top brass. In the end, IBM lost some $2 billion on its OS/2 effort.

Regular communication channels may quash any message challenging the strategy, so companies need to create a system that gets unfiltered opinions straight to the top. Microsoft routinely conducts surveys asking team members for their anonymous predictions about when a product will be delivered. Group leaders know that such surveys can happen at any time, which tends to keep them honest. The surveys don't help Microsoft avoid product delays, but they do give management an accurate picture.

Have we assessed the true advantages – and liabilities – that come with scale? Companies often overestimate the power of scale – it doesn't necessarily deliver presumed advantages, like greater purchasing power – and routinely underestimate the complexities. When they double in size, companies aren't just doing the same thing, twice as often. USAir's acquisitions tripled the company's size in just one year – 1987 – and completely brought down its information systems.

Have we considered all our options? This question is especially important for companies that stay the course. Kodak, for instance, could have sold itself in the 1980s or 1990s at a far higher valuation than it now has, or it could have moved faster into the digital world, capturing a greater share of sales of cameras and printers and, perhaps, the revenue from picture websites and cell phone cameras. Its principal competitors in film and paper, Agfa and Fuji, made such moves.

Would we bet on it? Gordon Bell, a prominent investor who funds start-ups, is very blunt with executives of firms in his portfolio. For instance, when someone makes predictions for company performance, Bell will zero in on one number and ask the CEO, "Wanna bet? A side bet, you and me, for $1,000." If the CEO gulps, Bell knows he or she has doubts. At least once, when an underperforming CEO didn't take the bet, Bell had him fired. You can take this notion up a notch to engage in prediction markets, set up like a stock market, where people can buy and sell shares reflecting their honest assessment of how a particular plan will play out.

in 1987 to expand into the West and then bought archrival Piedmont for $1.6 billion. The company almost tripled in size in a bit more than a year, and its information systems couldn't handle the load. Service suffered, computers repeatedly broke down on payday, and crews were taxed to the limit by their new schedules. Before the merger, USAir and Piedmont had operating profits six to seven percentage points higher than the industry average; after the merger operating profits were 2.6 points below the industry average.

Furthermore, companies may not be able to hold on to customers of a company they buy, especially if they change the value proposition. And last, other options may be preferable to being the industry's consolidator. Ames didn't have to go toe-to-toe with Wal-Mart. It was doing nicely as a regional retailer with a far more limited product line. As far as we can tell, Ames never considered holding on to its position and potentially selling out to Wal-Mart down the line.

About the Research

Our research focused on the most significant business failures among U.S. public companies from 1981 through 2005, because reporting requirements ensured uniformity and access to data, while the universe of companies was large enough for us to generalize results. We defined "failure" as a significant investment write-off, a shutdown of an unprofitable line of business, or a bankruptcy.

Working with leading information vendors, including Reuters, Thomson Financial, and Bankruptcy.com, we built a database of more than 2,500 failures. We also did a literature search to find failures that didn't show up in databases – for instance, companies that sold themselves before having to account for a major problem. Aided by researchers from Diamond Management & Technology Consultants, we narrowed the field to the 750 most meaningful cases: bankruptcies of companies with at least $500 million in assets in the last quarter before bankruptcy and write-offs and discontinued operations greater than $100 million (excluding write-offs for in-process research and development). Our analysis revealed that strategy had been the key factor behind failure in 355. To identify the red flags that might have alerted management to impending failure, we also turned to personal interviews, court documents, local newspaper coverage, and business-school cases.

Roll-Ups of Almost Any Kind

The notion behind roll-ups is to take dozens, hundreds, or even thousands of small businesses and combine them into a large one with increased purchasing power, greater brand recognition, lower capital costs, and more effective advertising. But research shows that more than two-thirds of roll-ups have failed to create any value for investors.

We were interested to find that many roll-ups were afflicted by fraud – among them, MCI WorldCom, Philip Services, Westar Energy, and Tyco – but we won't focus on those in this article because for the most part the lesson is simply, "Don't do it." Instead, let's look at the fortunes of Loewen Group. Based in Canada, it grew quickly by buying up funeral homes in the U.S. and Canada in the 1970s and 1980s. By 1989, Loewen owned 131 funeral homes; it acquired 135 more the next year. Earnings mounted, and analysts were enthusiastic about the company's prospects given the coming "golden era of death" – the demise of baby boomers.

Yet there wasn't much to be gained from achieving scale. Loewen could realize some efficiencies in areas like embalming, hearses, and receptionists, but only within fairly small geographic proximities. The heavy regulation of the funeral industry also limited economies of scale: Knowing how to comply with the rules in Biloxi doesn't help much in Butte. A national brand has little value, because bereaved customers make choices based on referrals or previous experience, and being perceived as a local neighborhood business is actually an advantage. In fact, Loewen often hid its ownership. And it damaged whatever reputation it did have with its methods of shaming the bereaved into buying more expensive products and services (such as naming its low-end casket the "Welfare Casket").

Nor did increased size improve the company's cost of capital. Funeral homes are steady, low-risk businesses, so they already borrow at low rates. The cost of acquiring and integrating the homes far outweighed the slight scale gains. What's more, the increase in the death rate that Loewen had banked on when buying up companies never happened. Fast-forward several years and the company filed for bankruptcy, after rejecting an attractive bid. (Relaunched under the name Alderwoods, Loewen was sold to the same suitor for about a quarter of the previous offer.)

Often roll-ups cannot sustain their fast rate of acquisition. In the beginning, all that matters is growth – buying a company or two or four a month, with all the cultural and operational issues that accompany a takeover. Investors know that profitability is hard to decipher at this point, so they focus on revenue, and executives know that they don't have to worry about consistent profitability until the roll-up reaches a relatively steady state. Operating costs frequently balloon as a result. Worse, knowing that the company is in buying mode, sellers demand steeper prices. Loewen overpaid for many of its properties. In another case, as Gillett Holdings and others tried to roll up the market for local television stations in the 1980s, the stations began demanding prices equal to 15 times their cash flow. Gillett, which bought 12 stations in 12 months and then acquired a company that owned six more, filed for bankruptcy protection in 1991.

Finally, roll-up strategies often fail to account for tough times, which are inevitable. A roll-up is a financial high-wire act. If companies are purchased with stock, the share price must stay up to keep the acquisitions going. If they're purchased with cash, debt piles up. All it took to finish off Loewen was a small decline in the death rate. For Gillett, it was an unexpected TV ad slump. When you go into a roll-up, you need to know exactly how big a hit you can withstand. If you're financing with debt, what will happen if you have a 10% – or 20% or 50% – decline in cash flow for two years? If you're buying with stock, what if the stock price drops by 50%?

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The vast majority of business research focuses on successful companies, in an effort to generalize from their traits, tactics, or strategies. Executives scrutinize healthy businesses for best practices they might be able to imitate. Our research looks at the data that others tend to ignore: companies that tried to do the same thing as the winners and failed. We know that companies are capable of learning from failure, given the right incentives. Airlines have a better-than-average record on preventing disaster because their own personnel go down with customers. Perhaps that's an overly dramatic example, but we do believe that enormous value lies in learning from companies that have lost millions, if not billions, in pursuit of fundamentally flawed strategies.

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"We're sending Harkins on the Management Wilderness Retreat, hoping he'll get lost."

Roy Delgado

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The Risk Revolution
THE TOOLS

The New Arsenal of Risk Management

by Kevin Buehler, Andrew Freeman, and Ron Hulme

DISCUSSIONS OF RISK usually come to the forefront in times of crisis but then recede as normalcy returns. As we write, the global banking system is facing a major credit and liquidity crisis. Losses from subprime mortgages, structured investment vehicles, and "covenant lite" loans are creating a credit crunch that may in turn trigger a global slowdown. In the past year major financial institutions have written off nearly $400 billion, and central banks around the world have initiated emergency measures to restore liquidity. Several other crises have occurred within memory: the U.S. savings-and-loan collapse in the 1980s and 1990s, Black Monday in 1987, the Russian debt default and the related dive of Long-Term Capital

John Weber

Management in 1998, the dot-com bust of 2000, and the Enron-led merchant-power collapse of 2001.

The resounding message is that risk is always with us. Executives need to wake up to that fact. Unfortunately, a growing emphasis on mathematical modeling has rendered much of the risk-management debate and research incomprehensible to those outside the finance function and the financial services industry. As a result, many corporate managers have shied away from the powerful risk-management tools and markets created over the past three decades – and thus have forgone considerable opportunities to create value.

Our aim here is to help managers understand both the advantages and the limitations of the markets and tools that are implicated in the credit and liquidity crisis. We will describe the evolution of risk management in recent decades, show how new markets have changed the landscape in both financial services and the energy sector, and explain what it takes to compete in the current environment. These analyses will help readers make sense of the crisis and will illustrate just how powerful a lens risk can be when applied to corporate strategy and organization. In the companion article published in this issue, we describe a process whereby executives in all companies can incorporate risk into their strategic decision making.

The Idea That Changed the World

For the first 70 years of the twentieth century, corporate risk management was largely about buying insurance. Risk management in the financial sector was also rudimentary: Bank regulators lacked tools for measuring risk in the system, so constructive intervention was difficult. Banks themselves had no way to control the interest-rate risk in their loan portfolios or to quantify and manage credit risk – in part because few alternatives to insurance existed. To be sure, some futures and options contracts were written and sold, but reliable tools for pricing them were rare, and the markets for these securities were thin and characterized by wide bid-ask spreads.

The low level of interest in risk management was also to some extent a product of prevailing thought in finance, originating with Franco Modigliani and Merton Miller's "indifference theory," which argued that a company's value was not (in most cases) affected by capital structure or hedging, and the capital asset pricing model (CAPM), developed by William Sharpe and others, which argued that risk should be managed primarily through portfolio diversification by investors. (For a summary of the main theories relating to the field, see the exhibit "The Evolution of Risk Management.")

All this began to change in 1973, with the publication of the options-pricing model developed by Fischer Black and Myron Scholes and expanded on by Robert C. Merton. The new model enabled more-effective pricing and mitigation of risk. It could calculate the value of an option to buy a security as long as the user could supply five pieces of data: the risk-free rate of return (usually defined as the return on a three-month U.S. Treasury bill), the price at which the security would be purchased (usually given), the current price at which the security was traded (to be observed in the market), the remaining time during which the option could be exercised (given), and the security's price volatility (which could be estimated from historical data and is now more commonly inferred from the prices of options themselves if they are traded). The equations in the model assume that the underlying security's price mimics the random way in which air molecules move in space, familiar to engineers as Brownian motion.

The core idea addressed by Black-Scholes was optionality: Embedded in all instruments, capital structures, and business portfolios are options that can expire, be exercised, or be sold.

The Evolution of Risk Management

This timeline describes milestones in the development of risk management and their relevance today.

1950 — 1960

1952
Mean variance
(aka modern portfolio theory)
Harry Markowitz

ESSENCE Investors can analyze risk as well as their expected return

RELEVANCE Provides the basis for portfolio choices to achieve the optimal level of risk for a given return

1958
"Indifference theory"
Franco Modigliani, Merton Miller

ESSENCE In a perfect market (no taxes, bankruptcy costs, or asymmetric information), the value of a company is independent of its capital structure

RELEVANCE Doesn't hold true in the real world, suggesting the need for efficient capital structure and risk mitigation through hedging

Late 1950s, early 1960s
State preference theory
Kenneth Arrow, Gérard Debreu

ESSENCE An efficient allocation of resources and risks requires a "complete" set of securities that permits agents to hedge all risks

RELEVANCE Underpins derivatives and shows that the ultimate role of securities markets is to efficiently allocate risk across society

1960s
Capital asset pricing model (CAPM)
William Sharpe et al.

ESSENCE Markets compensate investors for accepting *systematic* – or market – risk, but do not discount for *idiosyncratic* risk, which is specific to an individual asset and can be eliminated through diversification

RELEVANCE Affects decisions about hedging – which should be left to investors – and about whether or not to mitigate specific risks

1970

1973
Options-pricing model
Fischer Black, Myron Scholes, Robert C. Merton

ESSENCE The volatility of a security is a key factor in options prices

RELEVANCE Allows major new risk transfer, while the related field of real options means companies can put a value on waiting

1976
Arbitrage pricing theory
Stephen Ross

ESSENCE The price of a security is driven by a number of factors, which are either macroeconomic or market indices

RELEVANCE Permits segmentation of CAPM systematic risk into factors or components. If prices diverge from expected returns, investors can use arbitrage to bring them back into line

1977
Underinvestment problem
Stewart Myers, Clifford Smith, René M. Stulz

ESSENCE Stockholders refuse to invest in low-risk/low-return assets to avoid shifting wealth from themselves to debt holders (mirror image of the asset substitution problem)

RELEVANCE Suggests there is potential shareholder value in better risk management through better investment decisions

1979
Binomial option pricing model
John Cox, Stephen Ross, Mark Rubinstein

ESSENCE Taking into account variations over time in the price of the underlying financial instrument leads to more-accurate pricing of some options

RELEVANCE Allows much deeper markets for long-dated options and options on securities paying dividends

1980

1990

1993
A framework for risk management including hedging
Kenneth Froot, David Scharfstein, Jeremy Stein

ESSENCE The goal of risk management is to ensure that a company has cash available for value-enhancing investments

RELEVANCE Theoretically supports managers trying to manage risk as a strategic set of choices

In many cases an option is both obvious and bounded – as is, for example, an option to buy General Electric stock at a given price for a given period. Other options are subtler. In their 1973 paper Black and Scholes pointed out that the holders of equity in a company with debt in its capital structure have an option to buy back the firm from the debt holders at a strike price equal to the company's debt. Similarly, the emerging field of real options identified those implicit in a company's operations – for example, the option to cancel or defer a project based on information from a pilot. The theory of real options put a value on managerial flexibility – something overlooked in straightforward NPV calculations, which assume an all-or-nothing attitude toward projects.

The new model could hardly have come at a more propitious time, coinciding as it did with the spread of the handheld electronic calculator. Texas Instruments marketed an early version to financial professionals with the tagline "Now you can find the Black-Scholes value using our calculator." The calculator's rapid acceptance by options traders fueled the growth in derivatives markets and the broad development of standard pricing models. Other technological advances quickly followed: In 1975 the first personal computers were launched. In 1979 Dan Bricklin and Bob Frankston released VisiCalc, the first spreadsheet designed to work on a personal computer, giving managers a simple tool with which to run what-if scenarios. The financial sector rapidly developed new instruments for managing different types of risk and began trading them on exchanges – notably the Chicago Board Options Exchange – and in over-the-counter derivatives markets.

By the 1980s, with calculating muscle inexorably increasing on the trading desk, it had become far easier to identify, price, and trade different kinds of options. Among the most influential machines were workstations developed by Sun Microsystems and Digital Equipment and the Bloomberg Terminal, which revolutionized price calculation in derivatives and fixed-income markets respectively. Crystal Ball and other firms developed software that allowed traders to run Monte Carlo simulations in a matter of minutes on laptops, rather than overnight on mainframe computers. By the beginning of the 1990s it was possible to buy contracts that covered a wide variety of risks using derivatives of various kinds – options, futures, and swaps, often in combination. Derivatives markets began with currencies, equities, and interest rates and quickly expanded to include energy, metals, and other commodities. In a second wave of innovation, instruments emerged that allowed the hedging or transfer of credit risk, at that time the major remaining category of financial risk and a subject of concern among bank regulators. By the end of the decade derivatives markets were exploding; the notional value of the securities involved rose from $72 trillion in 1998 to $370 trillion in 2006. By the end of 2007 the total had reached almost $600 trillion. The market was so sophisticated that "synthetic CDOs" – derivatives of derivatives of derivatives – soon appeared and in fact were the fastest-growing sector of the multitrillion-dollar market for collateralized debt obligations until the credit crunch began in late 2007.

But optionality goes well beyond financial services. It implies that a company's equity is a basket option in which its various risks are pooled: Each shareholder is exposed to a tiny fraction of the risk to which the company is subject. A simple but useful way to think about a company's balance sheet, therefore, is to see its equity as a cushion against the risk of performing badly. The risk that its market value will go down is borne by the shareholders. No such cushion is provided by debt, on which the interest must be paid no matter how the company performs.

Two conclusions follow: First, any company has an appropriate debt-to-equity ratio, geared to the probability that it will suffer losses. Too large a cushion – more equity capital than is required – means that the company is using capital inefficiently. (If it has issued shares to raise "excess" equity capital, profits will have to increase if it is to maintain the previous rate of return.) Too small a cushion means the company is not just courting default or financial distress but also may be ignoring or deferring growth opportunities in response to smaller-than-expected operating cash flows.

Second, because the optimal debt level is determined by a company's key market, financial, and operating risks, it is directly affected by actions that mitigate those risks. Managers can therefore add value by separately and more cheaply hedging some of the risks ordinarily managed by the equity cushion. As Robert Merton pointed out in "You Have More Capital than You Think" (HBR November 2005), some companies are better than others at managing particular risks. If risks can be priced and traded, it makes sense for companies to try to lay off the categories of risk in which they have no comparative advantage. This approach allows them to reserve their (expensive) equity capital for risks that would cost more to transfer than to manage directly.

The work of Merton and other leading academics validated the growing field of risk management and counterbalanced indifference theory. Let's now look at how risk management has developed in the financial sector.

Article at a Glance

- The world of risk management changed with the publication of the **Black-Scholes options-pricing model** and the introduction of the handheld electronic calculator.
- Starting in the mid-1980s, the financial sector became a gigantic **risk clearinghouse** as highly liquid markets for the transfer of all sorts of risk evolved.
- Success is closely linked to the culture that companies develop around risk. The financial sector has no better **role model** for what it takes to succeed than Goldman Sachs.

The Revolution in Financial Services

Many important innovations in risk management originated in the banking and securities industries. The reasons are obvious but worth stating. First, financial institutions are in effect risk-intermediation businesses; as the most sophisticated of them came to realize, the ability to describe, price, and manage risk should be among their core competencies. Second, these industries are rich in data, and thus a natural locus for efforts to quantify risk using new technologies. Third, and perhaps most important, they are typically highly leveraged and are monitored by regulators who, concerned about the potential impact of failures, pushed for improved risk management. That concern went back at least to 1974, when Herstatt, a German bank, failed and a lot of international banks were badly hurt because of the time lag involved in cross-border settlements. Foreign-exchange transactions executed in Germany had not yet cleared in New York when the bank was declared insolvent, creating enormous exposures.

In the following decades banks faced several comparable crises involving interest-rate and credit risk, among them the infamous S&L collapse. In the early 1990s an economic slowdown and listless real estate markets caused an unexpected surge in defaults among commercial banks' borrowers. A number of leading financial institutions were in grave danger of going bust; one survived in significant part owing to an enormous investment by a private individual. Bank of New England, among others, did actually go under.

At bottom, poor risk management was to blame. Banks had only a limited understanding of the credit risks in their loan portfolios; their assets and liabilities were typically mismatched; and they retained loss-making exposures on their balance sheets. Even in the early 1990s most commercial banks lacked now commonplace tools such as VaR (value at risk), credit risk portfolio models, and RAROC (risk-adjusted return on capital).

In contrast, securities firms and investment banks had become quite sophisticated in their use of risk-management tools. They recognized that much of traditional commercial banking could emulate the trading of shares and bonds. Bank loans could be marked to market (that is, priced as if they must be sold immediately, even though they might not mature for years to come), turned into securities, and traded. Loan portfolios could be packaged in tranches. Interest-rate risk could be separated from credit risk. And so on. Because securities firms and investment banks were skilled at packaging and trading risks, and commercial banks were skilled at originating credit, a wave of mergers began; eventually distinctions between the two kinds of organizations blurred and regulatory barriers diminished.

Beginning in the mid-1980s the financial sector became a gigantic risk clearinghouse, as highly liquid markets for the transfer of all sorts of risk evolved. Because companies could transfer risk that had previously been cushioned by equity, more equity was available to generate new business where they had a natural competitive advantage. Commercial banks, for example, could lay off interest-rate risk and seek out additional depositors and creditors. More recently they have laid off credit risk as well, further increasing their ability to grow. As of this writing, of course, liquidity in the securitization and credit-transfer markets has dried up, dramatically diminishing the origination of credit. It remains to be seen how events will unfold; but even if a backlash occurs against some complex structured instruments, financial innovators are extremely unlikely to stop repackaging and trading risks.

Let's look now at the markets and institutions most deeply involved in both the growth of risk transfer and the current risk-management crisis.

Mortgages. The mortgage market perhaps best illustrates how risk instruments can transform the scope and nature of a business and also what the limitations are of relying too heavily on markets for risk management. Traditionally, banks held their mortgages in a single portfolio. In the early 1980s, especially in the United States, they started to securitize these portfolios: They pooled their mortgages, divided the pools into tranches, and sold them to third-party investors – other banks, pension funds, or insurance companies. In this way the risks of mortgage default were taken off the books of the original banks, which went on to make further mortgage loans (and to collect the associated fees), which were also pooled. This growth in business led to unprecedented profitability in the banking sector. But by early 2007 it was clear that both the underwriting and the rating of mortgages had become far too lax, so when subprime default rates rose, a major financial crisis ensued. Its ramifications are still spreading. The higher default rates rapidly depressed the prices of mortgage securitizations, first of the lower-rated tranches and then of the higher-rated ones. Some global banks, though they were not direct U.S. mortgage lenders, held portfolios of highly rated mortgage-backed securities or CDOs of mortgage-backed securities. As the ratings of those securities dropped, the banks' equity cushions thinned; they had to write off billions of dollars in asset values, seek out huge infusions of capital, and sharply reduce lending. The resulting credit crunch has changed the policy landscape, creating pressure for interest-rate cuts and giving rise to special lending facilities for liquidity-starved financial institutions. But risk can still be sliced and diced into discrete elements. The lesson here is not that the banks were wrong to take advantage of the markets but that even the largest and most liquid derivatives markets

> Despite the recent subprime crisis, financial innovators are extremely unlikely to stop repackaging and trading risks.

depend on the quality of the underlying assets. Transferring risk does not mean eliminating risk.

Wholesale credit. Financial innovation has influenced corporate credit as well, triggering a boom in commercial lending. Commercial banks can now refine their portfolios to retain only those risk categories in which they have a comparative advantage – perhaps an information advantage in the middle market, where customers are more idiosyncratic. They can modify exposure with credit-default swaps – derivative instruments that protect against a given company's financial distress. They can also use index derivative products to raise or lower their overall exposure to credit as an asset class if they believe that credit is too cheap or too expensive. Thus they can lend more to a particular customer without increasing their overall exposure to that customer's sector or increase their exposure to a sector without necessarily having to make fresh loans. Once again, transferring risk in these ways can free up capital for growth, enabling banks to offer more and more credit.

The main buyers of transferred risk have been pension and hedge funds, insurers, and others seeking the diversification provided by assets whose returns aren't directly correlated to stock and bond markets. But the liquidity of wholesale credit markets, like that of mortgages, cannot be taken for granted. The mortgage crisis has made investors less willing to participate in the securitization and credit-transfer markets. What's more, the ability to estimate credit-risk exposure has not kept pace with the growth in credit-risk instruments; during 2007 it became evident that banks were struggling to cope with the complexity of their portfolios. Although companies can separate out and trade individual risks, counterparty credit risk is often created as a result, and this needs to be monitored and managed. If a company has a credit exposure to an institution with which it has laid off some other risk, it still may be indirectly exposed to that underlying risk.

Hedge funds and private equity. The creation and growth of risk-transfer markets enabled fundamental changes in the investment management industry. Professional investors took advantage of their newfound ability to transfer different kinds of risk by creating investment vehicles not subject to some of the regulations on traditional funds (typically, those open to the public). Hedge funds are one such vehicle; they have rapidly evolved to allow investors to be extremely precise about their exposure across different asset classes, time horizons, and so on. In addition, as investors in CDOs and other asset-backed securities, they can help absorb credit risk from the banking system. Hedge funds are controversial: Do they introduce new risks into financial markets by using leverage to boost their returns? Do they really control the risks they run, or are they vulnerable to liquidity shocks and gaming by their competitors? These questions arose after Long-Term Capital Management's failure and again in 2006, when in a single week Amaranth Advisors, a commodity hedge fund, lost $6 billion of its $9 billion of assets under management by betting on natural-gas futures. More-recent hedge-fund failures have occurred, most publicly at Bear Stearns. Nevertheless, the sector has continued its strong growth, even during the market ructions of 2007–2008.

Private equity has been equally dynamic: Aggressive, capital-rich firms now stalk the world's markets looking to profit from taking listed companies into private ownership. Although private equity is not often described in terms of risk management (most PE firms stress their financial and governance skills), it can be regarded as applying cutting-edge risk-management techniques. PE deals have often relied on complex structured finance tools to lower capital costs through debt and hedging. It remains unclear how much private equity will suffer from the reduced liquidity of late 2007, but strong growth continues in this sector as well.

Transferring risk does not mean eliminating risk.

Risk as Culture: The Case of Goldman Sachs

As the markets for risk have evolved, it has become clear that a company's success is closely linked to the role risk plays in its culture. In the financial sector there is no better model than Goldman Sachs, arguably the world's leading investment banking, securities, and investment management firm. Today Goldman is essentially in the business of managing risk: Trading and principal investments account for 68% of its net revenues, whereas only 17% come from the traditional investment-banking and advisory business for which it was once best known.

Yet despite its reliance on highly volatile trading revenues (and the company's trading revenues are more volatile than any of its peers'), Goldman has so far avoided the large losses that have afflicted its leading competitors. In our view, this is because the firm's culture embraces rather than avoids risk – the antithesis of the typical corporate approach. Goldman makes money by being willing to risk losing it. When securities markets become more volatile, options rise in value; naturally, the value of experienced risk management rises also. Goldman ensures that its managers are familiar and comfortable with risk, can debate it freely without fear of sanctions, and are willing to make decisions quickly when necessary. The company's aggressive hedging in 2007 in markets related to subprime mortgages was a striking example of this. Goldman was both skillful and lucky. It was skillful in sensing that trouble was brewing and deciding to move quickly to reposition itself. It was lucky in getting both the decision and the timing correct.

Creating a culture so contrary to people's instincts and fears isn't easy. In our view, Goldman's success stems from four factors. None is unique to the company, but Goldman very effectively employs all four.

Quantitative professionals. Beginning in the early 1980s, Goldman recruited experts in mathematical modeling, who came to be called quants. Perhaps the most notable hire was Fischer Black, brought over from MIT in 1984 by Robert Rubin, who was then a general partner. Black led the firm's Quantitative Strategies group, working on, among other things, modern portfolio management and modeling interest-rate movements in order to value fixed-income options. Goldman also hired Emanuel Derman, a PhD in theoretical physics and one of Black's successors as head of Quantitative Strategies; and Bob Litterman, a PhD in economics and a codeveloper of the Black-Litterman global asset allocation model. People like these provided the quantitative and intellectual rigor needed to support Goldman's complex trading and derivatives businesses.

Strong oversight. In 1994, when an unexpected rise in global interest rates caused severe losses on many bond-trading desks, Goldman's large proprietary positions led to a substantial decline in profitability and a crisis in morale. In response, Jon Corzine, who had just assumed leadership of the company, restructured Goldman's risk-control systems, establishing the Firmwide Risk Committee to oversee market and credit risk worldwide. The committee, which meets weekly, aims to ensure that certain risk-return standards are applied consistently across the firm. Daily risk reports detail the firm's exposure with, for example, summary sheets showing the potential impact of changes in various macro risk factors and stress tests showing potential losses under a variety of scenarios, such as a widening of credit spreads, as happened in the autumn of 1998. Some Goldman executives claim they can fairly accurately estimate the firm's daily P&L just by looking at the risk reports and knowing the market's movements that day. Other forms of risk are taken equally seriously: Operational and reputational risks are addressed by the Business Practices Committee, loan and underwriting risks are addressed by the Capital and Commitments committees, and liquidity risk is managed by the Finance Committee.

Partnership heritage. From its earliest days in 1869 to its IPO in 1999, Goldman was funded largely by its own partners. But while Lazard Frères and other private firms distributed more than 80% of their earnings each year, Goldman's partners usually left as much as 80% of their after-tax earnings in the firm, withdrawing substantial amounts of capital only at retirement. The partners were careful stewards of the firm's capital because it was their own. Goldman's most senior executives continue this heritage, and the fact that employees still own a significant portion of equity helps reinforce the partnership culture.

Business principles. Finally, Goldman's values reinforce many of these risk-management lessons. The company's reputation is prized most of all. New hires are taught that although no single individual can make the firm successful, anyone can harm its reputation. They are encouraged to solicit independent views from risk, compliance, legal, and other powerful control functions when potentially controversial choices arise. The fastest way to get fired at Goldman is not to lose money but to make a unilateral decision that endangers the reputation of the firm.

The Revolution in Energy

As the success of markets for transferring financial risk became evident, companies in other sectors began to consider creating similar mechanisms. Commodity businesses that already had highly liquid spot markets were obvious candidates. The energy sector clearly had an enormous latent demand for risk transfer: Oil and gas producers would benefit hugely if they could lay off price risk in order to facilitate debt financing and concentrate on exploration and extraction. Oil refineries and other energy processors face even greater margin volatility from both crude oil and refined products. Deregulated power generators, which produce electricity – a commodity that must be sold as it is made, forcing prices up or down whenever it is under- or overproduced – face the greatest volatility of all. Moreover, all these companies must commit very large investments (several billion dollars for a single refinery, oil platform, or power plant) over 30 to 50 years, with all the industry ups and downs and technological advances that period may encompass.

Thus the rapid growth of energy futures markets like the NYMEX and ICE, along with over-the-counter derivatives markets, is unsurprising. In the 1990s major oil companies such as BP; electric utilities such as Duke Energy, Sempra, and RWE; and natural-gas companies such as Dynegy, El Paso, and Williams invested heavily to build large commodity-trading and risk-intermediation businesses. The most notable player, of course, was Enron, which had more than 1,000 energy traders and – even after post-scandal income restatements – more than $2 billion in annual trading profits. Enron also provided risk-management services and structured finance to oil and gas producers and service companies. Immediately prior to the company's collapse, Enron Online was regularly settling transactions in excess of $4 billion a day.

Following Enron's bankruptcy, energy commodity markets briefly dried up. Several other trading-oriented companies, including Dynegy, El Paso, Reliant, and Mirant, suffered big losses; some narrowly avoided their own bankruptcies. Credit concerns and the loss of liquidity formerly provided by Enron greatly reduced potential trading profits. Wanting to distance themselves from trading and derivatives, many industrial participants shut down their trading floors.

But retrenchment was short-lived, because the fundamental need for financing and volatility reduction persisted. Investment banks (and, later, hedge funds) quickly stepped in, hiring the talent formerly employed by Enron and other industrial players. Over the past two years two leading investment banks alone have reported more than $3 billion in profits from energy and commodity trading and risk management. Merrill Lynch, UBS, Royal Bank of Scotland, and Lehman each acquired trading operations from industry players. By the end of 2007 liquidity was approaching the levels of 2001.

Despite the availability of these liquid risk-transfer markets, however, only a few energy companies – those with an insatiable need for risk capital – have fully embraced strategic risk management. The scandals and stigma associated with complex derivatives are no doubt partly to blame, but the unprecedented surge in earnings in virtually all segments of the industry is probably more so. From 1999 to 2005 the 64 companies in Standard & Poor's energy and utilities sectors saw annual operating cash flows increase from $95 billion to $245 billion.

The companies that *have* embraced strategic risk management are among the most successful. The start-up Flores & Rucks (later Ocean Energy and now merged into Devon Energy) grew into a leading independent producer using volumetric production payments – loans secured by underlying oil and gas assets – and other structured finance vehicles. Chesapeake Energy has become an industry leader in U.S. exploration and production with a business model based on fully hedging its natural-gas price exposure. Refiners such as Valero, Tosco, and Premcor have used hedging strategies to support dramatic acquisition-based growth. Suncor, a pioneer in Canadian oil sands, used hedging to sustain its capital-intensive program through industry down cycles. Anadarko used bridge financing and hedging to enable two largely debt-funded acquisitions whose total cost exceeded its own market capitalization.

As these companies demonstrate, transferring risk can confer enormous strategic benefits. Because they are focusing their human and financial capital where they enjoy a comparative advantage, they can create more value than competitors that waste equity capital on risks that others will quite willingly assume.

...

Over the past three decades all kinds of tools and techniques for risk management have emerged. They have revolutionized financial services and energy, creating gigantic markets for the transfer of specific kinds of risk and generating billions of dollars in profit. They have freed up huge amounts of equity capital, enabling those industries to grow much faster than other sectors; by some estimates, the contribution of the finance sector alone to U.S. GDP has doubled in the past 30 years, from around 4% to 8% – at a time when the economy overall grew from roughly $1.6 trillion to more than $14 trillion.

Of course, risk-management tools carry dangers, as the crises in both finance and energy demonstrate. But it would be a big mistake for mainstream corporate executives to conclude that trying to manage risk is too dangerous. Staying on the sidelines may have shielded some companies from crisis, but it has also prevented them from growing as quickly as they might have. And continuing to avoid the game, now that we're coming to understand the limitations of risk-management markets and instruments, will only compound the mistake. The time has come to take stock of what we know and to learn how and when these incredibly powerful instruments should be used in "ordinary" corporations. That is what we address in "Owning the Right Risks" (see page 102).

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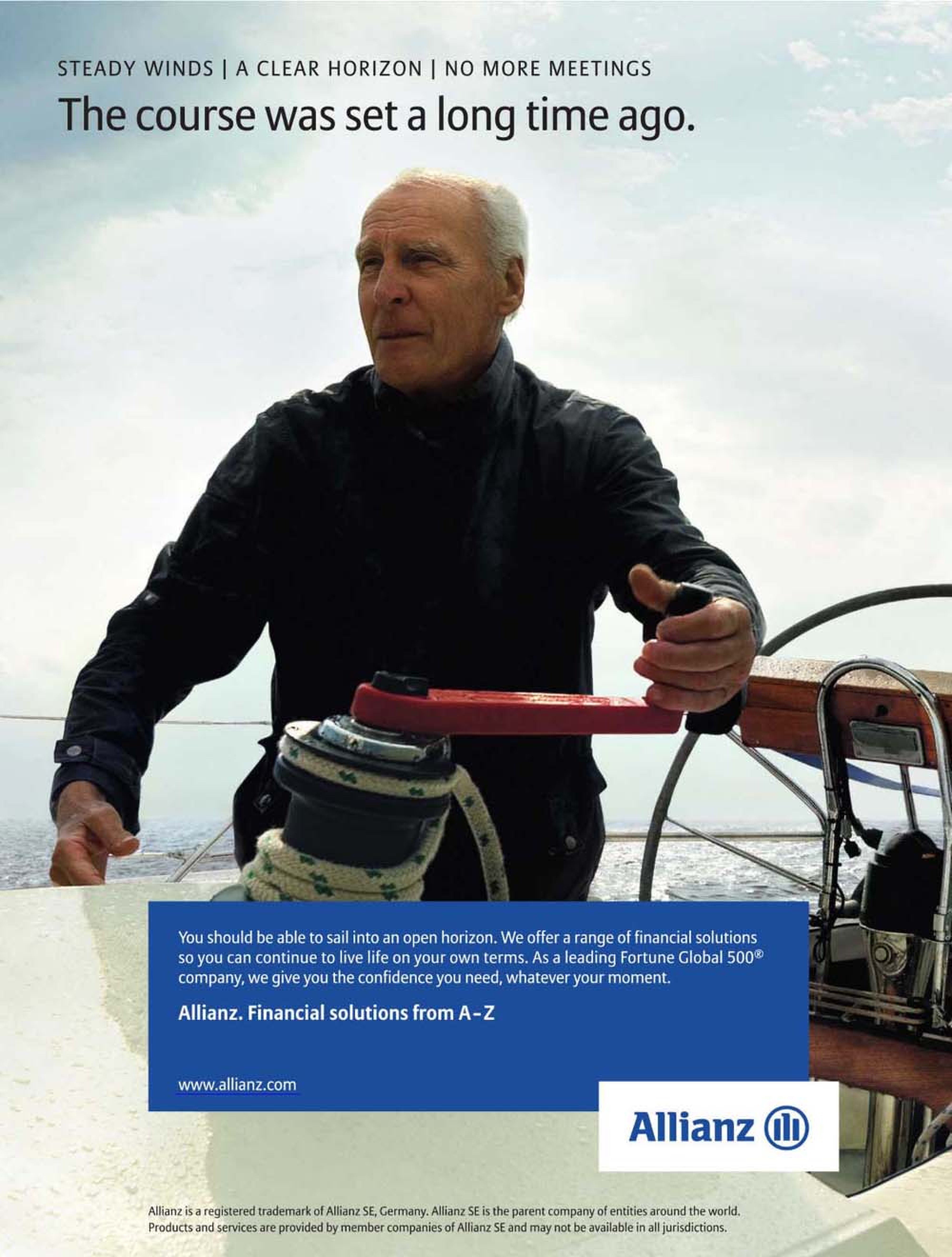
Reprint R0809G To order, see page 139.

"And it was about here when we let Ted's childhood imaginary friend take the reins..."

Dave Carpenter



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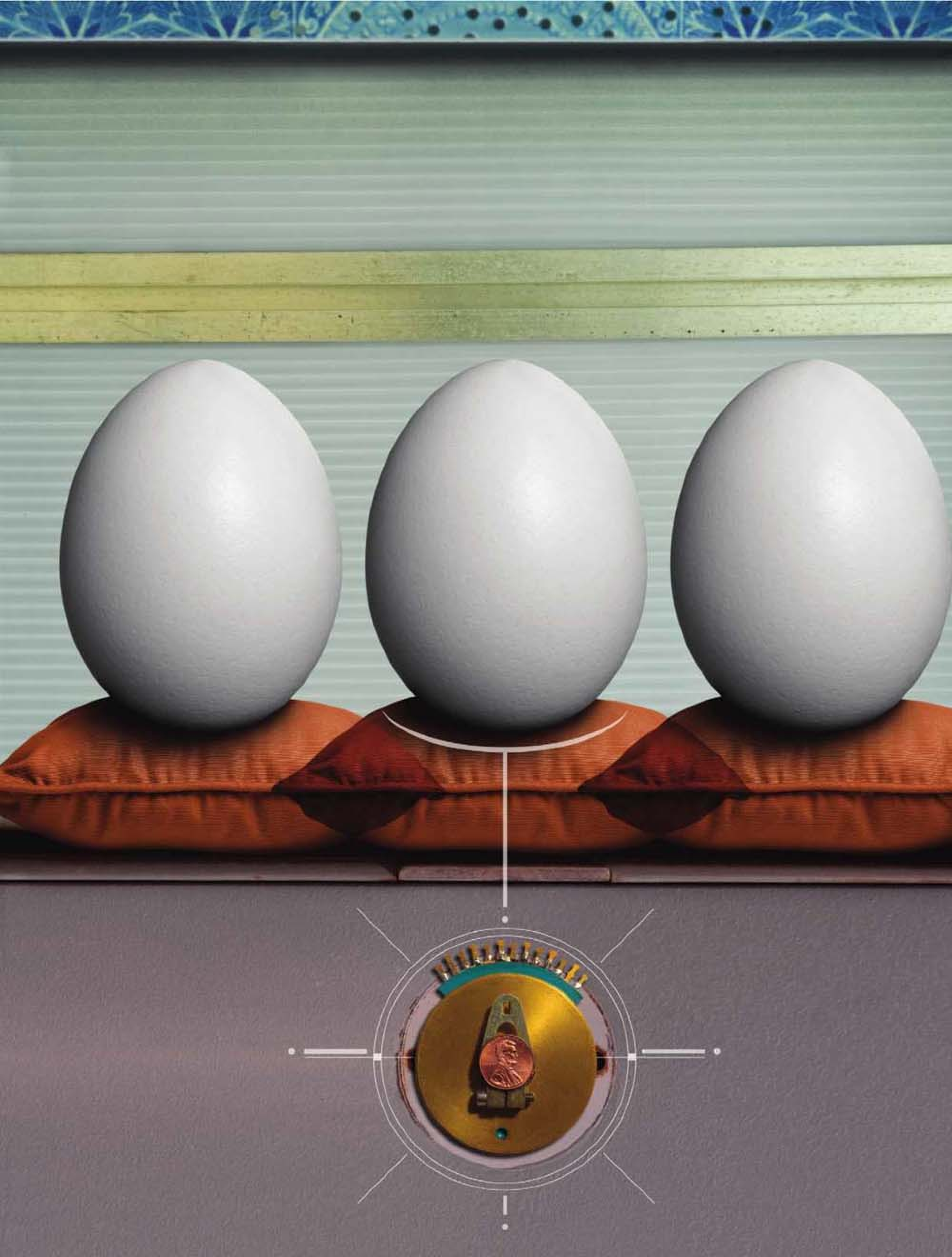
Owning the Right Risks

by Kevin Buehler, Andrew Freeman, and Ron Hulme

IN THE 1970S a revolution occurred in the field of corporate strategy. A boom in mergers and acquisitions launched new professions in M&A banking, M&A law, and strategy consulting. Given an active and efficient market for corporate control, companies shifted their focus from owning the most attractive businesses to owning the businesses in which they had a competitive advantage. If an owner was not advantaged, even its fastest-growing or most profitable businesses could be sold at a premium. Conversely, when the company was competitively advantaged, keeping even its least exciting businesses made sense.

At the same time, as we describe in "The New Arsenal of Risk Management" (see page 92), a revolution occurred in how financial services companies understood, bought, and

John Weber



sold risk. In 1973 Fischer Black and Myron Scholes published their famous model for valuing options, which made it possible to put a value on risk transfer. With computing power multiplying, huge new markets arose for optionlike contracts that transferred all kinds of financial risk, including interest-rate and credit risk. Similar markets for various commodities emerged shortly afterward.

Now these two revolutions are coming together to trigger a third in the corporate approach to risk management. Many fundamental operational, financial, marketing, and strategic choices involve the kind of rigorous quantification of risk that has taken hold in the financial markets. Should we pursue this M&A deal? How advantageous would it be if we became less vertically integrated? Should we manufacture or outsource? How might demand for a product change according to a competitor's behavior – or slow if China's economy deteriorates?

The answers to these and similar questions will increasingly depend on whether or not a company is the natural owner of the risks involved. Tools and markets for risk transfer and insurance now allow companies to identify, value, and trade many of the risks they previously shouldered themselves. Those risks that can't be traded can often be contracted out to third parties or consolidated in business units and sold off. Meanwhile, the companies can focus on managing or even acquiring risks for which they are competitively advantaged.

Engineering and managing a company's evolving risk portfolio has become an organizing principle for strategic choice, and companies that succeed in doing this generate far higher returns on their equity than those that stick with their traditional portfolios. That's partly because when they focus on their natural risks, they can typically support higher debt levels: Interest payments – unlike dividends – can offset taxes. Companies can also save on operating costs; those that outsource IT, for example, typically pay less in fees than those that own and manage the infrastructure and service themselves. Indeed, third-party providers can often draw on scale and knowledge economies to lower their cost base, giving them a natural advantage with respect to the risks involved.

In the following pages we outline a five-step program to help corporate managers adjust to the revolution in corporate risk management. It makes sense to begin the program at the enterprise level, although the steps can also be applied within business units. Each step gives a useful perspective on the evolution of thinking about corporate risk. (See the exhibit "Five Steps to Better Risk Management.") Before describing the program, however, we'll look at one company that has already successfully made the adjustment.

Article at a Glance

- If firms can **value and transfer risks**, they can focus on managing and acquiring risks for which they have a competitive advantage.
- Risk management is not just a question of top-level analysis. **Risk is inherent in every decision**, and the risk-aware company requires some assessment of it in every decision that managers make.
- TXU Corporation illustrates the benefits of using risk as an **organizing principle for strategy.** Its approach can be replicated in your company through a five-step process.

The Case of TXU

TXU Corporation (formerly Texas Utilities, now Energy Future Holdings) was the incumbent electric utility in northern Texas when the state deregulated wholesale and retail electricity markets in 2002. The company was fully integrated – it operated power-generation plants and managed a retail electricity-distribution network. Deregulation triggered market competition, capacity overinvestment, and commodity price exposures, putting TXU under severe financial pressure; by late 2003 its market value had dropped by more than half and its debt load had risen above 70% of its market capitalization.

When John Wilder joined TXU as CEO, in February 2004, he determined that even a small decline in wholesale power prices would put the company at risk of bankruptcy. He responded by initiating a restructuring program around two core principles: TXU would embrace risks for which it was competitively advantaged while actively mitigating all others; and it would dynamically manage risk capacity to ensure continued solvency and liquidity.

TXU's primary competitor, Reliant Energy, exited the Texas power-generation business in a multistep process culminating in the sale of Texas Genco to a group of private equity buyers. Other generators moved to hedge their risks with highly discounted, fixed-price power-purchase agreements. But Wilder, against example and advice, determined that TXU was the natural owner of generation and needed to remain in the business, despite the large exposure to wholesale energy prices – especially gas prices – involved. He believed that any other party would charge more to take over the risk than TXU stood to lose by holding on to it.

Wilder recognized that TXU's vertically integrated retail business provided a natural hedge: Should the wholesale market turn down, the company could keep residential retail prices high to compensate as long as it preserved market share through strong marketing and customer service. More than half of TXU's power sales were residential, and the company determined that retail pricing could mitigate perhaps one quarter of its exposure to wholesale energy prices. Wilder also understood that wholesale prices were heavily influenced by TXU's own investment and pricing

Five Steps to Better Risk Management

The five steps outlined in this article form a dynamic cycle. Companies that understand their risks can more easily identify those for which they have a natural advantage. With that clarity, a company's capacity and appetite for risk are easier to assess. Those assessments inform decision making at all levels. Companies with a strong culture of risk-adjusted decision making are better positioned to identify and understand changes in their risk profiles, triggering the cycle again.

decisions, which provided further cover. His first move, therefore, was to reject the complex hedging and structured finance programs that several leading investment banks were eagerly proposing.

However, cash flow in the generation business was still too susceptible to fluctuations in energy prices for TXU to maintain an adequate cushion against financial distress. Wilder undertook a program of divestitures, capital structure changes, outsourcing, and operational improvements. In his first 60 days he divested four noncore businesses, including the company's Australian utility, a telecom start-up, and a natural-gas distribution company that had never been integrated with TXU's power operations because of regulatory constraints. He used the $7 billion in proceeds to repurchase debt and convertible securities, creating crucial risk capacity by reducing the company's fixed obligations. Next he outsourced TXU's call centers and billing operations at guaranteed savings (proving that TXU was not the natural owner of those risks). And he launched a major initiative to make operations leaner in the company's plants. Utilizing sophisticated risk-management tools such as enterprise Monte Carlo simulations and detailed credit risk models, TXU could quantify the risk capacity created by these actions and balance it against exposure.

Wilder used some of the new capacity to restore TXU's exposure to wholesale prices, unwinding expensive financial hedges employed by the company's prior management team. His market foresight paid off: Wholesale power prices had more than doubled by the end of 2005 and continued to rise in 2006 and 2007, yielding profits not curtailed by unnecessary hedging. Had prices fallen, the retail business would have protected TXU against distress.

As power prices rose and performance improvements kicked in, TXU's cash flow increased dramatically; soon the company had more equity capital than it needed to support the risks it bore. In order to reduce its equity base, TXU repurchased almost 40% of its shares at an average price of $25. (By early 2007 the price had risen to $65.) When financial models in late 2004 indicated that the company still had excess risk capacity, TXU borrowed $4 billion to buy back even more shares.

Over the next two years TXU actively managed commodity hedging, corporate debt, project finance, outsourcing, and share buybacks to further optimize its risk capacity. In 2006 it generated EBITDA of $5.34 billion (up by more than $2.5 billion from 2003, despite a 40% reduction in the company's asset base) and EPS of $5.55 (up more than fourfold from 2003). Its share price increases created more than $32 billion in value and placed it fourth among S&P 500 companies in terms of stock performance. TXU estimated that its risk-return restructuring program contributed some 75% of that value.

In 2007 TXU was taken private by a consortium of private equity players in the largest-ever leveraged buyout – $45 billion. The economics of the LBO depended in large part on the buyers' ability to continue to manage TXU's exposure to commodity price risk. The private equity owners hedged a substantial portion of the company's commodity exposure over the next few years, using financial leverage to create an elegant structure that could be expected to ensure the necessary debt coverage through largely annuitized operating cash flows (achieved by hedging the commodity risk). In effect, the owners have created a low-cost call option on wholesale power prices. The owners took advantage of the extremely LBO-friendly market in which the transaction was signed – one in which the combination of hedging and debt was thought to create a lower cost of capital than that created by public equity. Time will tell how TXU's owners and creditors adapt to the new risk environment.

By following the same process and making risk a strategic organizing principle, other companies may be able to turn in the kind of performance that TXU achieved. First the company identified the key risks it faced and determined which ones it owned naturally. Then it worked out how much capital it needed to bear its natural risks. This led to strategic, operational, and financial decisions that gave the company only as much risk capacity as it needed. Finally, risk management was institutionalized throughout the organization.

We'll look now in more detail at the five steps in such a process.

1. Identify and Understand Your Major Risks

Risk management begins with taking stock: You must be able to specify the risks you run and have some sense of how they might play out, whether for or against you. Identifying risks sounds easy, but in fact getting agreement around the ones you face can be quite difficult. Functional and business unit heads may understate or dismiss some of their risks in order to hang on to their share of the budget. The legal and financial functions may have different views of risk and no easily shared language or tools for discussing them. The legal department may not want to disclose an uncertain liability in the company's annual report, whereas the chief risk officer may want to address it through contingency planning to ensure that the company's overall risk capacity is adequate.

The focus must be on the few risks that really matter. People's tendency to compromise can lead to an excessively long list of risks: One diversified metals company we advised identified some 60 across its various business units. In our experience, four to six key risks typically account for most of a company's cash-flow volatility, with the most common being demand risk, commodity risk, country risk, operational risk, and foreign-exchange risk. Of course, the precise list will vary by company, industry, and geography. We found that the top six risks for the diversified metals company contributed 92% of the overall cash-flow volatility.

In theory, we all know, risks can play out in many ways and each outcome has a probability. But even when people recognize multiple potential outcomes, they tend to focus on – and then manage to – the likeliest one or the one they fear most. In many cases failure to consider the full range of likely outcomes creates a dangerously skewed sense of the company's vulnerability to a particular risk. When deciding whether to invest in big projects, companies often fail to make the connection between cost overruns and arbitrary return hurdles – a good example of single-point forecasting that ignores or misprices risks.

In some cases probability distributions can be ascertained from traded markets – for instance, implied volatilities can be derived from the price fluctuations of options traded on commodity futures markets. In other cases they must be extrapolated from a statistical trend analysis of historical data. But risk probabilities often require more-subjective assessments. Fortunately, an array of decision tools can help, including scenario planning, agent-based modeling, and Delphi method surveys. And although extreme outcomes are rare, events at the least likely points of your probability distribution may have a major impact, as Nassim Taleb writes in *The Black Swan: The Impact of the Highly Improbable*. Thoroughly analyzing your risk exposure means discussing such possibilities.

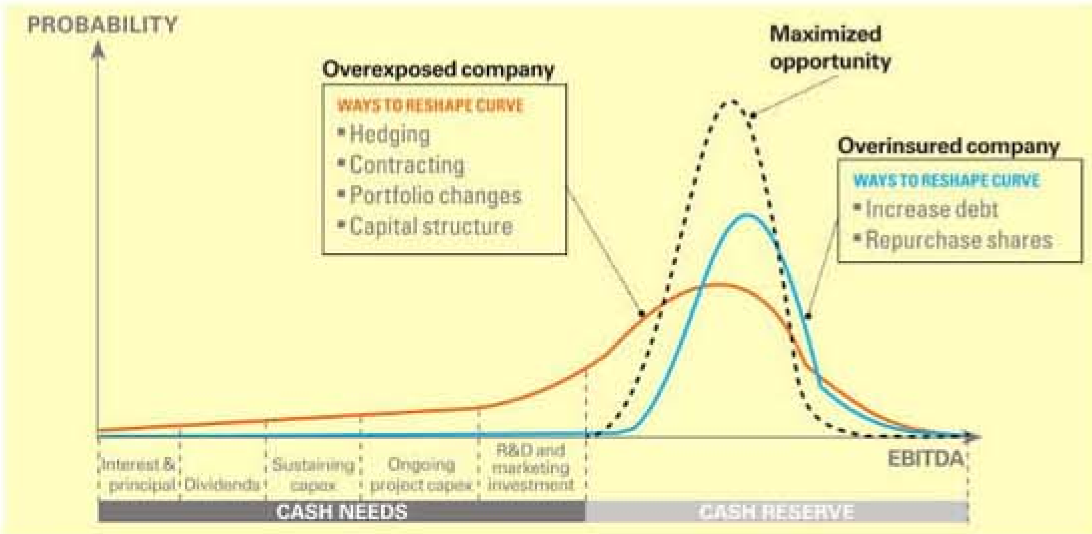
It's a good idea to identify risks that can be reassigned within the company rather than transferred to external markets. One obvious example is foreign-exchange netting across a multinational. You should also consider how risk exposure may change as the company's industry evolves. The arrival of Chinese producers in the aluminum industry, for example, meant that rising labor costs in developed economies could no longer be passed on to customers.

2. Decide Which Risks Are Natural

In assessing natural ownership, we have found it helpful to address three questions: 1) Does the company's business portfolio contain natural offsets, such as commodity offsets for a vertically integrated oil producer and refiner? 2) Does the company have superior capabilities for managing the

Profiling Cash Flow at Risk

The graph at right shows the probability distributions of future operating cash flows for two hypothetical companies – one that is overexposed to risk and one that is overinsured against it – and how those distributions map against each company's cash needs (arranged from left to right according to their necessity to a company's survival).



The most likely cash-flow scenario for either company – the highest point of its solid line – is well to the right of its cash needs. But the overexposed company's range of scenarios shows some probability that it will be unable to fund planned capital investments and may even fail to meet interest and dividend obligations. In contrast, the overinsured company has almost no chance of such shortfalls, but it is failing to use capital efficiently to maximize returns.

Either company can come closer to the optimal probability curve with the help of risk-management tools and techniques.

risk – such as information advantages in traded commodities or project management skills for large investments – or is it in fact disadvantaged, as an airline would be compared with a petroleum refiner regarding jet fuel prices? 3) Are the accessible risk-transfer markets reasonably efficient? Some markets, like that for interest-rate derivatives, are so efficient that they offset the benefits of natural ownership for even sophisticated commercial banks.

Natural-ownership assessment yields a clear risk strategy for the company. Risks for which the company has a natural advantage create superior returns and (subject to the constraints of overall risk capacity addressed below) should not be hedged or transferred to others. In fact, the company should seek to load up on these risks whenever possible, because other entities are likely to heavily discount them. In contrast, risks for which it has no advantage should be mitigated whenever risk-transfer markets are reasonably efficient. When such markets are unavailable, the company may be able to develop risk-transfer opportunities, such as long-term contracts and joint ventures with partners that have offsetting risk positions.

In a well-known case illustrating how natural ownership can help to determine strategy, Southwest Airlines persevered through the industrywide downturn following September 11, 2001, maintaining its now 34 years of profitable performance. In the 1990s Southwest initiated a sophisticated hedging strategy to reduce its fuel costs by as much as 50%. The strategy has generated gains in excess of $4 billion, including $1 billion in 2005 alone – 105% of Southwest's operating income for that year. Less often discussed is the reasoning behind Southwest's hedging decision. For its executives, hedging fuel-cost risk was only part of a larger strategy centered on the stability of costs, service levels, and fares. They knew that rising fuel prices were the biggest threat to their business model, and they chose to remain a low-cost carrier no matter what happened. If fuel prices rose, their hedge meant they would win in the market because their labor and productivity advantages would be strengthened by an edge in fuel prices as well. If prices stayed flat or fell, they would still be the low-cost leader. In other words, Southwest profited by being the first to recognize that oil-price risk was not natural for an airline to bear.

3. Determine Your Capacity and Appetite for Risk

To assess your company's risk capacity, first quantify your operating-cash-flow risk. Start by running a Monte Carlo simulation, drawing on the risk probability distributions you determined in step one. Widely used in the financial sector, this technique offers an extremely efficient way to run numerous what-ifs across multiple variables. Once the simulation has been run, the probability of cash shortages or surpluses over each of the coming years can be quantified. The exhibit "Profiling Cash Flow at Risk" illustrates how this concept can be practically applied.

Many companies will want to manage their capacity for other kinds of enterprise risk as well. For example, a company in a cyclical industry might want to assess and manage its overall equity value at risk, seeking to keep its expected stock price volatility below an absolute level or the expected level of a peer group. Alternatively, a company might place a high premium on meeting EPS guidance and want to assess and manage earnings at risk. No matter what measures companies decide to prioritize, a probability-based view of risk capacity is likely to be helpful.

Without strong risk-analysis processes, most companies gravitate toward one of two extremes: Many have an unduly large appetite for risk and make too little provision for negative scenarios, so if problems occur and credit sources dry up, they must slash important cash outflows and may even have trouble meeting debt obligations. For these companies, the cost of a $1 shortfall in cash flow may be $2 to $4 depending on the opportunity cost of forgone investments or the restructuring costs of financial distress.

In contrast, but far more common, other companies have too limited an appetite for risk and hold excess capacity, often driven by the desire to retain a target credit rating. These companies typically maintain capital structures with excess cash and little or no debt – a strategy that can raise a company's cost of capital and in the process lower market value by as much as 15%. They impose risk-averse standards such as inflated investment hurdle rates or conservative price and margin forecasts to ration investment capital, choking off value-creating growth opportunities. In some cases they also hedge interest-rate, currency, or commodity-price exposure to which they already have natural hedges in their operations. By linking analysis of their risk capacity to their appetite for risk, companies can reach a much better understanding of their overall position.

4. Embed Risk in All Decisions and Processes

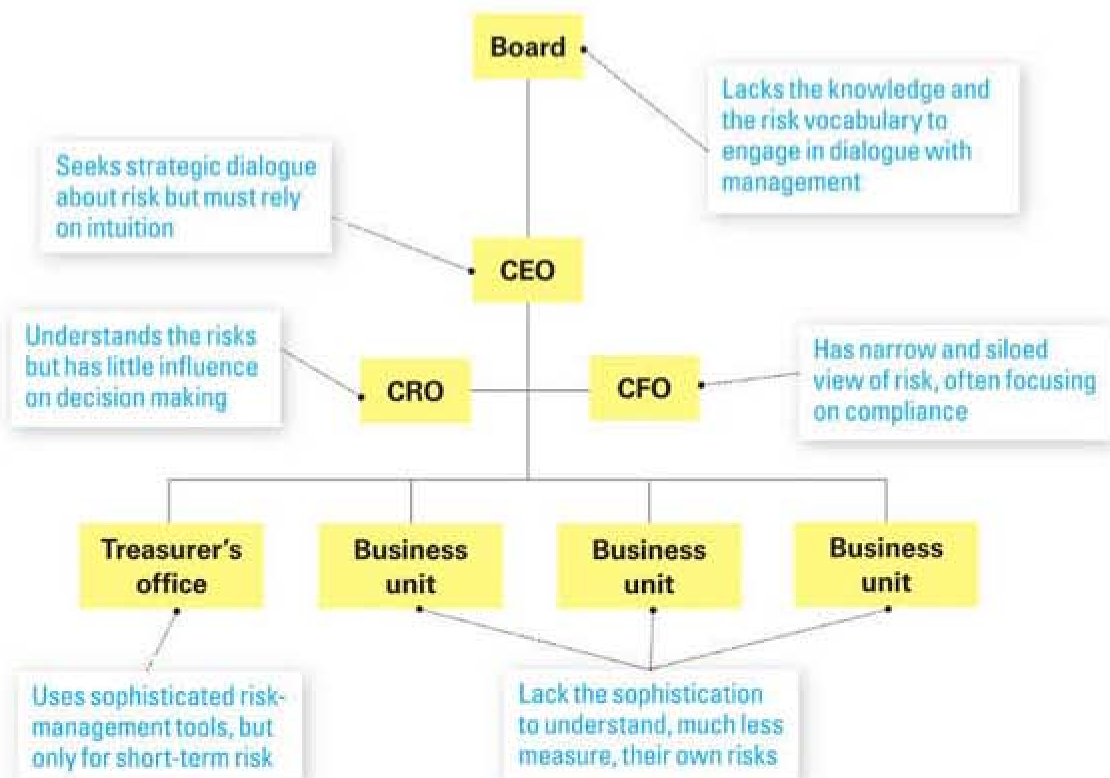
Risk management is not an exercise to be undertaken just once by experts or once a year by risk departments. It is a mindset, a culture, a way of approaching problems, processes, and decisions. Psychology and behavioral economics have established that we have difficulty correctly incorporating risk into our thinking, and companies need to establish the capacity for risk-informed decision making. But if risk is to be embedded in a company's day-to-day operations, the whole range of decisions and processes to which risk-return management is relevant must be clear. Four areas can benefit substantially from risk-informed approaches:

Investment decisions. By adopting a probability-based approach to investments, companies can avoid many of the pitfalls inherent in more-traditional evaluations. For example, instead of a single NPV estimate, companies can assess probability ranges (between the 25th and 75th percentiles, for example) along with the probability of a negative NPV. The distribution can also be viewed under alternative project structures, such as in-house management using multiple subcontractors versus a turnkey contract whereby a single contractor agrees to a fixed price and delivery schedule for a project. The Black-Scholes options-pricing formula and other risk-assessment tools can also help companies quantify the value associated with real options, such as deferring or accelerating an investment program in response to unfolding events.

Commercial decisions. Most industrial purchasing and pricing decisions, whether for spot or long-term contracts, can benefit from what we call *risk-book* concepts, which derive

The Risk Culture at Most Companies

In most organizations the identification and management of risks is highly fragmented, so the board and the CEO find it hard to engage in a meaningful and informed analysis; the CEO usually ends up relying on his or her gut instinct.



Without strong risk-analysis processes, most companies gravitate toward one of two extremes: overexposure or overinsurance.

from the trading book commonly used by asset-management and securities-trading firms. Risk books essentially separate complex risks into buckets, enabling more-effective matching and measurement of exposure. A soft-drink bottler, for example, could use risk books to better manage its commodity risk by quantifying specific exposures to aluminum and plastic packaging, high-fructose corn syrup, and trucking fuel costs – and then assessing whether these highly correlated risks would be better managed through hedges, procurement contracts, and sales contract terms or at the corporate level through a portfolio of oil futures hedges.

Financial decisions. Most financial policy decisions involve risk trade-offs that should be viewed in the context of enterprise cash-flow and value trade-offs. Should the company employ more hedging to increase its debt capacity? Should the capital budget be cut to provide a cushion? Should the company use equity instead of cash and debt to fund an acquisition? Too often such decisions are made under arbitrary debt-to-equity guidelines or, worse, to achieve target credit ratings. They should be informed instead by cash flow at risk and other risk-management tools.

Operational decisions. Supply-chain design, outsourcing, inventory policy, and proposed changes in a manufacturer's global footprint all involve significant risk-return trade-offs; decisions around these, too, benefit from an enterprise-risk perspective. For example, a global manufacturer that has shifted production to an emerging market in order to save on labor costs might consider locating a second plant in a developed economy, creating a diversified production base to offset political risk in the emerging economy. Similarly, a manufacturer running a lean operation might be less vulnerable to significant and costly disruption if it builds some flexibility into its supply chain through more, rather than fewer, key supplier relationships.

Most industrial companies neither coordinate nor evaluate the above decisions using risk-management tools. Yet each of these decisions consumes or creates risk capacity, and each involves uncertainty and risk exposure. The problem may come down to the skills of the decision makers. Investment and operational decisions are usually made by business unit managers, procurement decisions by the purchasing department, pricing decisions by sales force managers, and financial policy decisions by the CFO. Typically these people take a base case or a high and a low case and use them as a forecast, ignoring the rest of the probability distribution.

In an ideal world, business managers and decision makers would analyze the impact of a proposed project or investment on the firm's overall level of risk and make precise trade-offs to maintain an optimal risk exposure. In the real world, companies with good risk management have a strong risk culture informing decisions at all levels. This should include incentive systems that encourage individuals to value the whole enterprise rather than their personal fiefdoms and to make decisions with an eye to real long-term economic outcomes rather than short-term performance. As noted on page 98 of our companion article, such a culture is one of the defining features of Goldman Sachs.

It is not easy to persuade managers to think about risk in the way we've described, but our experience is that this can make a real difference. A highly motivated CEO who understands the power of managing both risk and returns can inspire an entire management team and corporate culture. Though developing an institution-wide approach to risk requires a lot of education and the application of consistent discipline over a period of years, it tends to have a lasting positive impact on company performance.

5. Align Governance and Organization Around Risk

Overseeing a risk-management effort requires constant vigilance and commitment from a company's managers, beginning with the board. The best risk managers, like Goldman Sachs and TXU, have a culture of continual questioning and openness, in which information is simultaneously challenged and filtered to reduce the chance of surprises. But most companies have no clear risk-governance structure; the effort becomes fragmented, just as risk itself is siloed and therefore not understood at the enterprise level. The exhibit "The Risk Culture at Most Companies" reminds us of the complex organizational challenges that must be overcome to culturally embed risk.

Just as a strategy must be formulated in the context of the organization that will be expected to execute it, so systematic or strategic risk management can occur only if the organization is aligned from top to bottom with a common understanding of the company's key risks and overall level of exposure. But most companies seek only to identify the different aspects of risk and perhaps to take some mitigating steps.

Even companies with an appreciation of risk and some sophistication about managing it usually don't go far enough. Commonly they adopt a decentralized approach: Risks are owned by business units, and headquarters provides oversight and some aggregation of risks through portfolio choices. This is typical at large project-based companies with complex risks of long duration. But often in these cases understanding of risk-reward trade-offs at the aggregate level is limited, and these firms usually combine large equity cushions with heavy insurance investment. Business units tend to see the risk function as an internal police force determined to curtail independent activity.

In our experience, the most effective model is a centralized one, with a powerful chief risk officer who reports to the CEO but also presents regularly at the board level. Companies with this structure tend to manage volatile risks that require vigilance and discipline. Risk is embraced for the opportunities it creates.

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Corporate strategists have largely ignored risk. But the simultaneous revolutions in financial services and M&A paved the way for a breakthrough in how companies approach strategy. Now the key question is less about your ownership of assets and capabilities than about your ownership of risk, and a variety of tools and techniques for guiding your decisions are available. Of course, adjusting to the new world isn't easy. Identifying risks, let alone determining whether or not they are natural, is far from straightforward. Quantifying risks requires managers to learn new skills. What's more, it's not just a question of top-level analysis: The risk-aware company demands some assessment of risk in every decision that managers make. Finally, aligning the organization around risk takes a concerted effort that someone must own – ideally the CEO or a senior executive who reports directly to the top. But the rewards to be earned from facing up to these challenges are significant. Risk-savvy companies will generate far higher returns for their shareholders and use capital far more efficiently than we have seen to date. Perhaps most important, the capital and skills made available by more-professional risk management will also make it easier to manage the really big uncertainties facing all of us in the coming decades.

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To order, see page 139.

"If we go by this crack in the wall, things are going well."

P.C. Vey

BY JANET BANKS AND DIANE COUTU

How to Protect Your Job in a Recession

Your company has a plan to survive hard times. Do you?

Brucie Rosch

IN A TROUBLED ECONOMY, job eliminations and hiring freezes seem almost routine, but when your own company's woes start to make headlines, it all hits home. Intellectually, you understand that downsizing isn't personal; it's just a law of commerce, but your heart sinks at the prospect of losing your position. While you know that passivity is a mistake, it's hard to be proactive when your boss's door is always closed, new projects are put on hold, and your direct reports look to you for reassurance. Don't panic. Even though layoff decisions may be beyond your control, there's plenty you can do.

That's what we've observed in numerous layoffs over the years and in research on how people respond to stressful work conditions. (Author Janet Banks oversaw a dozen downsizings as a vice president in human resources at Chase Manhattan Bank and a managing director at FleetBoston Financial. Author Diane Coutu studied resilience during her time as an affiliate scholar at the Boston Psychoanalytic Society and Institute.) We've seen that while luck plays an important role, survival is most often the result of staring reality in the face and making concrete plans to shape the future. Machiavellian as it may seem, holding on to your job when the economy softens is a matter of cool strategic planning. In our experience, however, even the savviest executives are ill-prepared to deal with job threats. Here's what you can do to keep your career moving and minimize the chances that you'll become a casualty.

Act Like a Survivor

A popular partner in the Brussels office of McKinsey & Company mentored hosts of junior consultants. When asked for advice on getting ahead, he always gave the same reply: "If you want to be a partner, start acting like one." The corollary of this advice is even more important: During a recession, you have to start acting like a survivor if you hope to escape the ax.

Studying the thinking of survivors reveals a surprising paradox. Though creating a plan to weather layoffs requires an almost pessimistic realism, the best thing you can do in a recession is lighten up. Keep your eye firmly on the eight ball, but act confident and cheerful. Research shows that being fun to be around really matters. Work by Tiziana Casciaro and Miguel Sousa Lobo, published in a June 2005 HBR article, "Competent Jerks, Lovable Fools, and the Formation of Social Networks," shows that while everyone prefers working with a personable superstar to an incompetent jerk, when people need help getting a job done, they'll choose a congenial colleague over one who is more capable but less lovable. We're not suggesting that you morph into Jerry Seinfeld; being congenial and fun isn't about bringing down the house. Just don't be the guy who's always in a bad mood, reminding colleagues how vulnerable everyone is. Who wants to be in the trenches with him?

Of course, putting on a good face can be psychologically exhausting when rumors of downsizing spread. Change always stirs up fears of the unknown. Will you land another job? How will you pay the mortgage? Can you find affordable health insurance? Those are all valid concerns, but if you stay positive, you'll have more influence on how things play out.

Survivors are also forward looking. Studies of concentration camp victims show that people made it through by imagining a future for themselves. The power of focusing on the times ahead is evident even among people suffering the blows of everyday life. As Freud wrote in "Mourning and Melancholia," a critical difference between ordinary grief and acute depression is that mourners can successfully anticipate a life where there will once again be joy and meaning.

ARTICLE AT A GLANCE

- **If you want to survive, act like a survivor. Be confident and cheerful. Stay focused on the future by concentrating on the customer, without whom nobody will have a job.**
- **Give your leaders hope. They agonize over layoffs, so cut them a break. Empathizing with your boss will give you an advantage.**
- **Be a corporate citizen. Companies like team players. Research shows that collegiality may trump competence when push comes to shove.**

> There's science to support the idea that showing empathy for powerful people can pay off.

In your job, there's no better way to look forward than to stay focused on customers, for without them no one will have a job in the future. Anticipating the needs of your customers, both external and internal, should be your top priority. Prove your value to the firm by showing your relevance to the work at hand, which may have shifted since the economy softened. Your job is less likely to be eliminated if customers find that your contribution is indispensable.

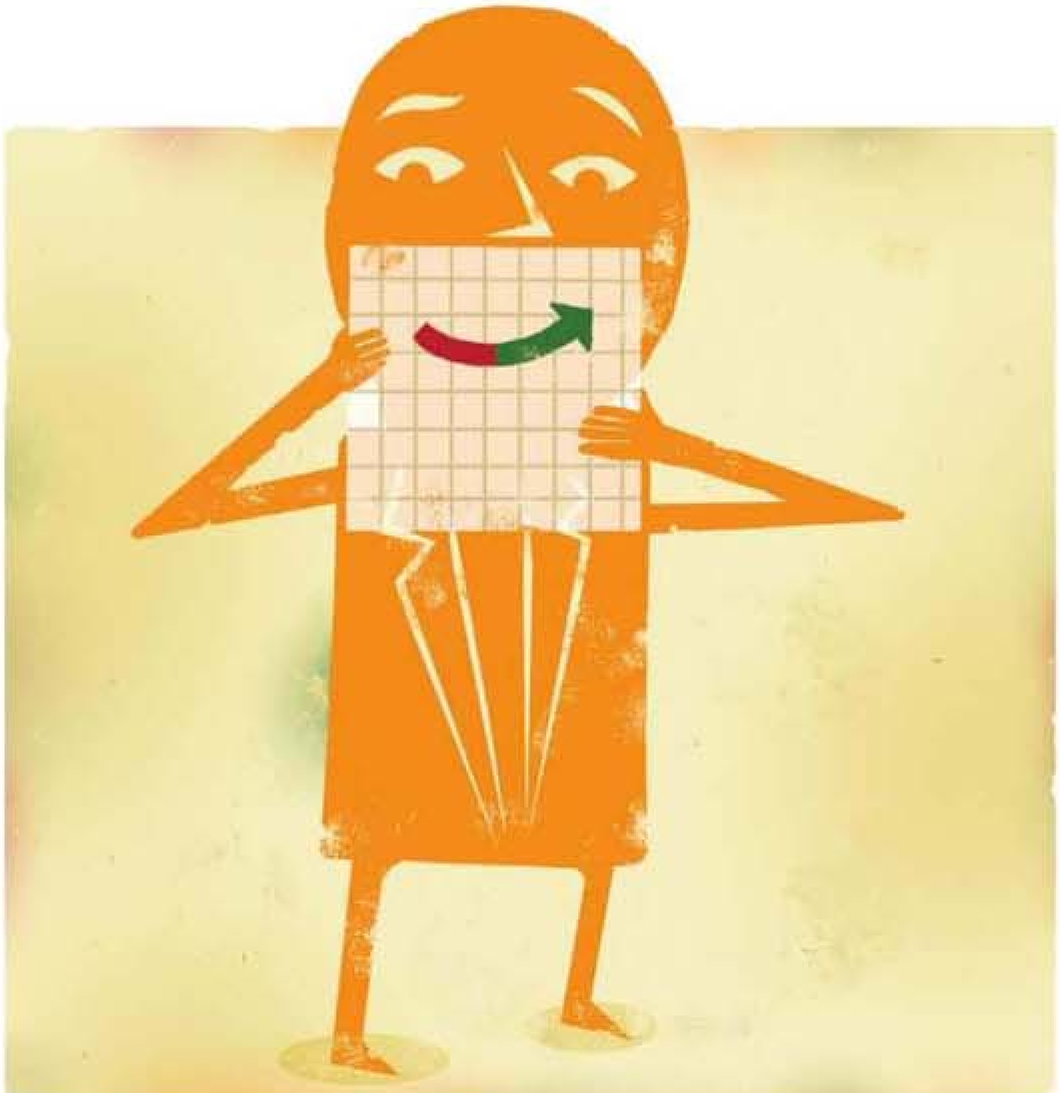
Being ambidextrous will increase your chances of survival as well. In one company we know of, senior staff members were often expected to play more than one role to keep expenses in check. When the organization's new chief operating officer decided he needed a chief of staff, he chose a person who continued to manage a human resources team, thereby eliminating the need for additional head count. Reorganizations and consolidations involve great change, so they demand versatile executives. If you're not already wearing multiple hats, start imagining how you can support your company by leveraging experience your boss may know nothing about. A marketing manager who taught school before moving into industry might volunteer to take on sales and service training responsibilities, for example. A recession can offer you plenty of opportunities to display your capabilities. Layoffs typically occur at all levels of an organization and can create vacuums above and below you.

Finally, survivors are willing to swallow a little pride. Take the case of Anne, a manager at a large New England insurance company. (We've changed her name, as well as those of the other individuals cited in this article.) During a reorganization, Anne found herself vying for a position with a colleague who had far less industry experience than she did. When she learned that she and her department would be folded under this colleague's department, Anne realized that she had one choice if she wanted to keep her job – use her significant influence to support her new manager. So she publicly threw herself behind the colleague. In turn, he gave her the respect and the loyalty she felt she deserved. Anne's attitude demonstrated commitment to the company – something that was noticed by the management. A year later Anne got new responsibilities that led to a prestigious board appointment.

Give Your Leaders Hope

It's important to recognize that times of uncertainty are also tough for leaders. They don't enjoy having to lay off their people; most find that task agonizing. It can be stressful and time-consuming for them to sort through the various change mandates they've been given and then decide what to do. Obviously, this isn't the time to push for a promotion or to argue for a new job title. Instead, try to help the leader defend your department. If the boss is working on a restructuring plan and asks for ideas, offer some realistic solutions. Don't fight change; energize your colleagues around it.

It may sound like what Karl Marx called *false consciousness* – thinking that disempowers you because it is not in your best interest – to empathize with your boss when he or she is considering cutting your job. However, there's science to support the idea that showing empathy for people more powerful than you can be worthwhile. For example, recent mother-infant research shows that the more an infant smiles and interacts with the environment, the more active the caretaker becomes in the infant's development and survival. Although the mother-infant research has not, to our knowledge, been replicated in the workplace, psychologists have shown that so-called attachment behavior – emotional



bonding – can be learned, just as emotional intelligence skills can be honed. That's good news. The better your relationship with your manager, the less likely you are to be cut, all things being equal. Your ability to empathize can demonstrate a maturity that is invaluable to the company, not least because it models good behavior for others.

The ability to unite and inspire colleagues goes a long way in the best of times; in the worst it's crucial. This was true at an international financial services company that had endured a staff reduction of 20%. In the face of low morale, the head of human resources asked Isaac, a learning and development VP, to help revive people's spirits, improve communications, and stir up some fun. Isaac quickly pulled together a small team of volunteers and created a live radio show that engaged even the most cynical members of the organization. It included a soap opera that kept staff at all levels laughing and waiting for the next episode. The show gave executives a unique platform to share information such as quarterly financial results and changes in the organization's structure. It did so much to improve morale that as a result Isaac landed the job he wanted – head of management and leadership development for the company.

Become a Corporate Citizen

Remember Woody Allen's remark that 80% of success is showing up? That is especially useful advice in a downturn. Start going to all those voluntary and informal meetings you used to skip. Be visible. Get out of your office and walk the floor to see how folks are doing. Take part in company outings; if the firm is gathering for the annual golf tournament and you can't tell a wood from an iron, then go along just for fun. In tough times, leaders look for employees who are enthusiastic participants. It's not the score that counts.

Corporate citizens are quick to get on board. Consider Linda, a VP in operations, who worked in a large company that needed to cut costs. Management came up with the idea of shared service centers to avoid duplication of effort in staff functions in areas such as compensation, management training, and strategic planning. The decision was universally unpopular. Service center jobs had none of the cachet of working in small business units, where customized solutions could be developed. Headquarters staff objected to losing the elite status they'd enjoyed as corporate experts. When service center jobs were posted, many high-profile people refused to put their names forward, misjudging their own importance and hoping management would relent. But Linda saw the opportunity and applied for a service center job. The new position gave her immense visibility and was an immediate promotion. Meanwhile, many of the resisters found themselves standing without a chair when the music stopped. In contrast, Linda kept her career on track; six years later she reported directly to the president of the company.

> Many who resisted change found themselves without a chair when the music stopped.

Of course, changing your behavior or personality to survive may rub against your need for authenticity, and you may decide that it's time to move on. In that case, you can be both true to yourself and the ultimate corporate citizen by volunteering to leave the organization. Despite what the policy may be, companies will cut deals. Deals are even welcomed. It's much less painful for managers if they can help someone out the door who wants to leave rather than give bad news to someone who depends on the job. If you're a couple of years away from retirement eligibility and want to go, ask the company if it would be willing to bridge the time. Float a few balloons, but don't get greedy. Keep in mind that even if you choose to go, you may need to get another job and you'll want good references and referrals. If you've exited gracefully, odds are, your boss and others will do whatever they can to help you land on your feet.

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Many forces are beyond your control in a recession, but if you direct your energy toward developing a strategy, you'll have a better chance of riding out the storm. You have to be extremely competent to make it through, but your attitude, your willingness to help the boss get the job done, and your contribution as a corporate citizen have a big impact on whether you are asked to stick around. The economy will bounce back; your job is to make sure that you do, too.

PREPARING FOR THE WORST

You May Still Need a Plan B

Following the best advice is no guarantee that you won't get laid off. That's why you need a plan for handling a job loss.

The first key to moving on successfully is self-awareness. You'll have better luck finding a new job if you know what you're good at and what you'd really like to do, so it's wise to invest mental energy now in figuring those things out. If you have results from a Myers-Briggs test or a 360-degree assessment, revisit them to understand your strengths and weaknesses. Read self-help books to inspire your thinking, or perhaps even hire an executive coach. (Just make sure to get references and agree on fees before you start with any coach.)

Don't wait till you get laid off to update your résumé. Revise it now, so that you'll have it ready when you start approaching headhunters, former bosses and colleagues, and industry contacts for job referrals and advice. It's a good idea to begin networking with those folks now, in fact, but don't stop there. Reach out to the neighbor who's the CFO of a successful company, and dig out the old business cards from your drawer and add those names to the list of those you'll call.

Finally, think creatively about your future. Perhaps you want to go back to school, start your own business, join a smaller firm, or become a minister. That may require some downsizing of your own, but as Ellen, a consultant, told us: "Now that the kids are grown, my husband looks at the house and says it's too big for the two of us. I'm willing to scale back. Both of us want to do different things." Who knows, maybe plan B will actually be more attractive than plan A.

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To order, see page 139.

Big Picture

BY RAWI ABDELAL, AYESHA KHAN, AND TARUN KHANNA

Michelle Thompson/agoodson

Where Oil-Rich Nations Are Placing Their Bets

Gulf countries are investing staggering sums in reshaping the world's financial systems and industries – and themselves.

PETRODOLLARS ABOUND – AGAIN. The combination of the gigantic American trade deficit and the price of oil at more than $125 per barrel (at press time) has created a pool of financial liquidity among oil exporters in the Gulf Cooperation Council states. The GCC – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates – experienced similar surpluses, of course, during the 1970s and early 1980s, when oil prices were comparably high. But this era of liquidity is markedly different from the last.

Previously, oil-producing nations, unprepared for their sudden riches, generally outsourced the management of their petrodollars to commercial, often American, bankers – stashing much of their wealth in U.S. Treasury bills or Eurodollar deposits at international banks. The GCC states weren't seeking to alter the nature of global capitalism or their place within it; they were simply following prevailing practices at the time for managing their earnings. As a result, the United States remained a central player in the international financial system.

During this latest go-round, however, GCC members are being much more strategic about where they place their petrodollar bets. They have adopted ambitious investment strategies and are spending lavishly on institutional infrastructure at home, creating free-trade zones for manufacturing and developing services and facilities that will attract increasing numbers of businesses, skilled knowledge workers, and tourists. Witness the recent surge in multibillion-dollar infrastructure projects in Saudi Arabia and the United Arab Emirates, including King Abdullah Economic City and the Saudi Power Network.

The GCC states are also making huge financial investments in the developed world: In August 2007, the petrochemical manufacturer Saudi Basic Industries Corporation (SABIC) spent $11.6 billion to acquire Massachusetts-based GE Plastics. The previous year, SABIC paid $700 million to acquire UK-based Huntsman Petrochemicals. In autumn 2007, the Mubadala Development Company, an investment vehicle of the government of Abu Dhabi, purchased stakes in the private equity firm Carlyle Group and in the California-based chip maker AMD. And in June 2008, Abu Dhabi Investment Authority, the sovereign wealth fund of Abu Dhabi, invested $7.5 billion in New York–based Citigroup.

Meanwhile, GCC investments in China, India, and Africa are occurring on an unprecedented scale. Gulf investors are more comfortable than their Western counterparts with forging deals in emerging economies – partly because of their diasporic links and cultural ties to some of these countries and partly because they have fewer concerns than Westerners about whether these regions embrace democratic norms. As one Middle Eastern telecommunications executive told us, "The big boys have a lot of fear going into the developing world. They don't know what to expect, and so they stay away. We usually know what to expect – and even if we don't, we are comfortable enough with uncertainty to take a risk."

In this new era of petrodollar liquidity, it's the GCC states (not Wall Street, not Main Street U.S.A., not the City of London) that are altering companies' strategies and even managers' careers – and those are among the more prosaic consequences. The GCC's aggressive investment activities, along with the member states' openness to globalization, are moving the Gulf closer than it has ever been to the center of the international financial system. Wall Street and London remain critical hubs, of course. But more frequently, bankers and financiers from New York and the UK are arriving in, say, Dubai or Jidda, hat in hand, seeking meetings with Gulf investors who can fund their projects, bail out their organizations, or help them seize opportunities in new areas such as Islamic banking.

As a result of these efforts, the institutional fabric of the Middle East and Africa is changing. The connections that executives and policy makers in these locations are forging with their counterparts in China, India, and the rest of Asia will engender a broader systemic change in international trade and finance in the decades to come. In the following pages, we'll describe this transformation, examining how the economic landscape in the West will be affected by the Gulf Cooperation Council over the next decades, how proximate emerging markets will be reshaped, and finally, how the GCC home environment will be reconfigured.

ARTICLE AT A GLANCE

- **The oil-rich nations of the Gulf Cooperation Council aren't content to just let U.S. and UK bankers manage their investment portfolios, as they did during the previous oil boom.**
- **This time around, they're using their petrodollar surpluses to buy stakes in companies in the developed world and in emerging markets. They're also plowing their earnings back into regional and home-country development.**
- **The way the Gulf countries are spending their oil money is pulling them closer than they've ever been to the center of the world's financial system – and profoundly reshaping global capitalism.**

Reshaping the West

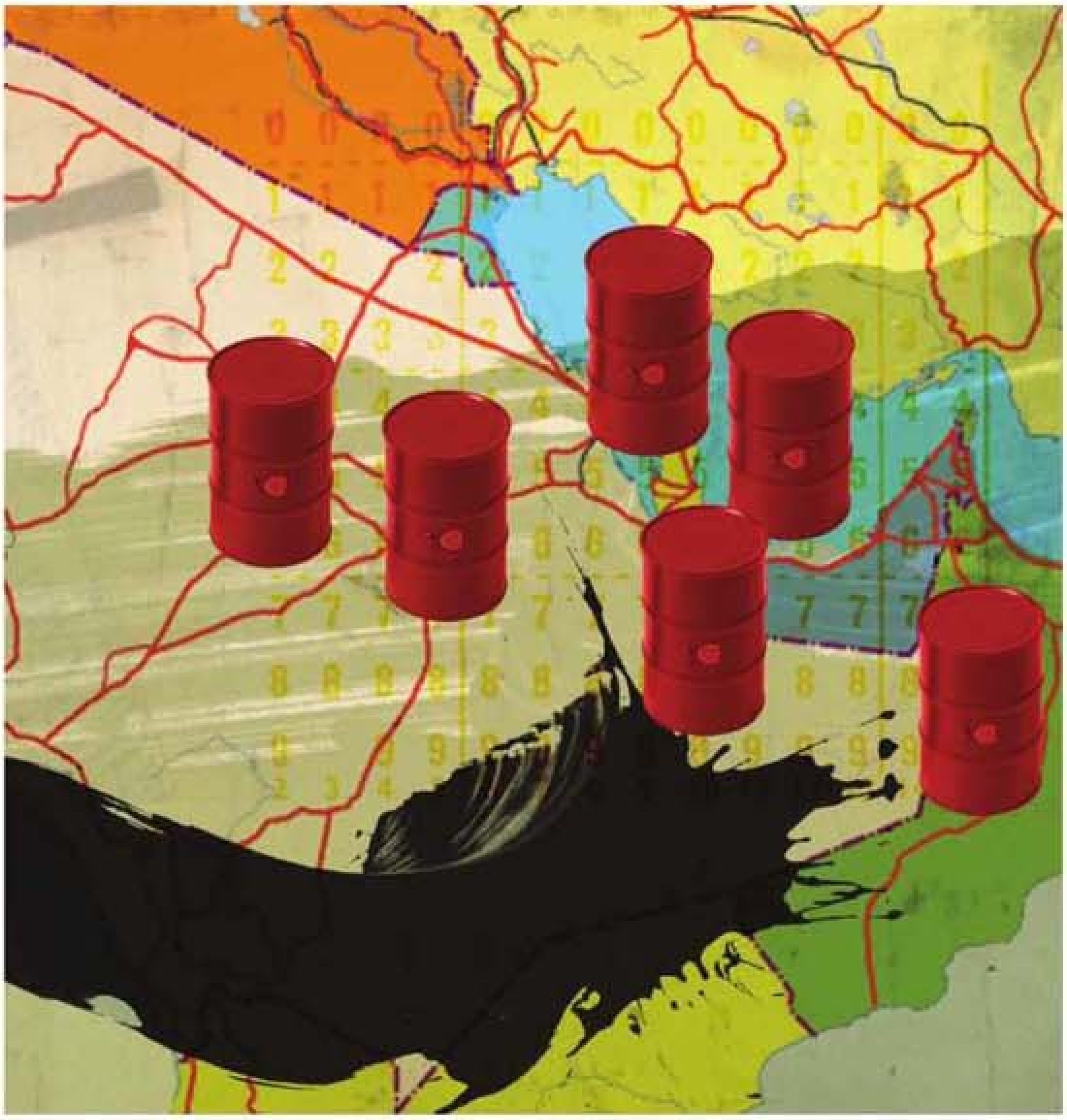
GCC activities are affecting the West in three important ways. First, oil-rich countries are financing huge deficits, particularly those of the United States. Second, the Arab states are increasingly buying corporate assets, embarking on a wave of M&A deals, and injecting more and more capital into Western organizations. And third, as they execute on their aggressive development and investment strategies, the GCC states are pulling leadership talent from an already limited global pool.

An important source of capital. With a current-account deficit of $738 billion in 2007, according to the U.S. Bureau of Economic Analysis, the United States has become the greatest debtor nation in the history of modern capitalism. The exact reasons behind this massive shortfall are up for debate; but it's clear that to ensure economic stability, the trade deficit needs to be financed by an equivalent surplus of capital inflows.

Foreign countries – most notably Japan and China – have demonstrated a healthy appetite for buying large amounts of U.S. securities. These countries have very little to gain (and a lot to lose) when the U.S. dollar weakens, so it seems reasonable to assume that their interests would be aligned with those of the U.S. economy. The same holds true for Gulf countries: It makes plenty of sense for them to finance the U.S. current-account deficit. Strategically, the United States still provides the security umbrella that helps to protect the region's regimes. Economically, a strong U.S. dollar is important for maximizing the buying power of Gulf oil revenues. Those escalating revenues are being used to purchase goods and services from China and Japan, whose imports have grown rapidly as a share of total imports into the GCC states. They're also being spent on goods from the European Union, which is currently the largest trading partner of the GCC. Paradoxically, proportionately less is being purchased from the United States.

Asia continues to finance nearly half of the American current-account deficit, but oil-exporting countries make up an increasing share of the net capital flowing into the United States (see the exhibit "Current-Account Balances"). Between 2002 and 2006, the GCC countries' oil export earnings were well over $1.5 trillion, and in 2007 the financial surplus for the member states was around $249 billion – which has allowed the GCC to directly or indirectly finance roughly one-quarter of the United States' current-account deficit.

The significance of the Gulf's energy resources is unlikely to decline: The United States, and indeed the rest of the world, will continue buying expensive fossil fuels for the foreseeable future, regardless of the vagaries of U.S. interest rates, housing prices, and credit card balances. And despite increased emphasis on alternative energies, the predominant sources of energy worldwide for decades to come will continue to be oil, natural gas, and coal. Crude oil prices have tripled since 2002 and show no signs of reverting to earlier levels (from the last oil boom to the early 2000s, prices remained below $30 per barrel). Global demand for oil remains strong and will increase even more to accommodate rapid growth in China, India, and other emerging markets.



A partner and investor in Western companies. Historically, foreign investors have struggled when they've invested in U.S. firms; that was true of the GCC states in the previous era of petrodollar liquidity. In the past, when the U.S. economy was awash with liquidity, foreign investors had to compete with local private equity and venture capital firms for the best deals. As such, foreign investors often did not earn sizeable returns from their U.S. investments. Today, with the Gulf awash in liquidity again, and the American economy lacking it, the situation is very different. Heavy M&A and investment activity has in many cases led to GCC organizations holding minority stakes in Western companies.

Consider Abu Dhabi Investment Authority's recent strategy: At 30-odd years, ADIA is one of the oldest sovereign wealth funds in existence, with investments worth, by some estimates, $900 billion. As an arm of the government, its mandate is to create a portfolio of predominantly foreign holdings to ensure the financial security of the emirate. Until very recently, ADIA had kept a low profile, restricting its stakes in publicly listed companies to 4.9% or below to avoid disclosure obligations. Then it purchased a highly publicized stake in Citigroup for $7.5 billion in November 2007, as the Wall Street giant floundered under the weight of mounting losses from investments in mortgage-backed securities. That deal, which marked ADIA's new and decidedly more active investment approach, ended up putting the world's largest institutional investor on the front pages of newspapers around the globe.

Other investors from GCC countries have demonstrated a similarly voracious appetite for acquiring highly visible foreign assets (see the exhibit "Major Gulf Investments Since 2004"). Some of the more well-known deals have been in the petrochemical sector, but others have also involved cultural institutions (Tussauds Group), banks (Citigroup, HSBC), telecommunications companies (Celtel Africa, Mobitel) and hotel chains (Fairmont Hotels, Travelodge).

It's true that the United States has certainly lost some of its allure as a place to park oil wealth, partly because of restrictions imposed in the aftermath of the 9/11 attacks. As exemplified by the massive political fallout over the Dubai Ports deal in February 2006 – the sale of port management businesses in six major U.S. seaports to a company based in the UAE was scotched over concerns about whether it would pose a security breach – the United States started viewing Gulf money through a stringent lens of suspicion. But others in the West aren't as wary: Europeans have been falling all over themselves to get a piece of the action. The UK in particular has actively courted Gulf billions and promoted London as the global petrodollar recycling center of choice. Increasingly, Gulf surpluses are being pumped back into the global economy to drive international equity markets and provide a ready source of financial liquidity – via Europe, not the United States. A sign of the greater integration between GCC and European capital markets is the popularity of London-based Global Depository Receipts relative to American Depository Receipts. In the past decade, the former securities have attracted a dozen takers originating from Bahrain, Oman, Qatar, and the United Arab Emirates.

A competitor in the war for talent. The GCC states need trained people to execute their newly aggressive investment and domestic development strategies and will inevitably pull leadership talent from an already limited global pool. This will change the playing field, raising compensation levels for all workers, whether they are based in the Gulf or not. More than one-quarter of the GCC's 35 million residents are foreign nationals, most of them employed as laborers and domestic workers. Most companies moving to or already based in the region are forced to look abroad for professional workers, as well. These rapidly growing companies are not just recruiting new hires from the United States and Europe; they are aggressively courting talent from neighboring Middle Eastern and North African countries, as well as from India and Pakistan, sources of talent increasingly tapped by the West. Furthermore, as Goldman Sachs, Morgan Stanley, and other top-tier companies from the West flock to the region, GCC firms are offering hefty petrodollar bounties to attract high-powered Wall Street bankers and consultants. These bonuses have raised the bar even higher, as the multinationals respond so as not to lose their talent in the Gulf. In 2006, average salary levels in the GCC increased by more than 9% compared with the previous year, with most of those increases coming from the more sophisticated sectors of engineering and finance.

> Because of others' hesitancy to enter the Middle East region, GCC companies can mop up entire market segments.

Reshaping the Near Abroad

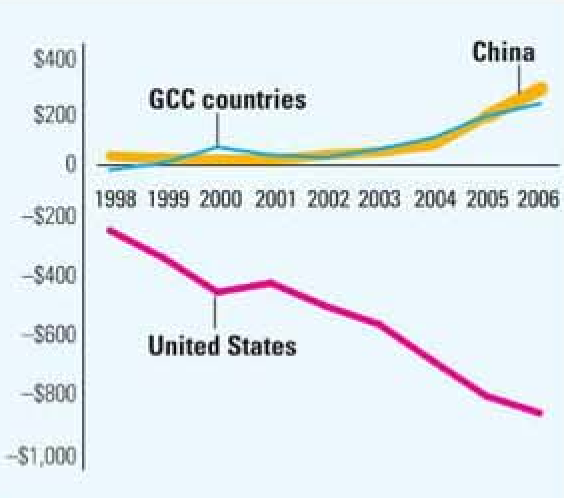
Another important effect of the petrodollar surpluses is evident in the GCC states' efforts to transform their business relationships and interests in their near abroad – the Middle East and North Africa region. Nations in this region – such as Egypt, Jordan, Morocco, and Syria – are presenting attractive investment opportunities for GCC states, as are Pakistan, Turkey, and Southeast Asian economies such as Malaysia. In fact a major trend in recent Gulf investments has been an increasing propensity for executives to look southward and eastward instead of falling back on the westward focus. Middle Eastern companies, while continuing to keep an eye out for attractive investments in the West, are recognizing that they can take advantage of lower asset prices in some emerging markets and, because of other global players' hesitancy to enter and operate in these regions, can mop up entire market segments.

Looking southward. One example is Zain (formerly known as the MTC Group), a Kuwaiti mobile telecommunications service provider established in 1983 as a joint venture between the government and private Kuwaiti investors. Over the past five years, Zain has embarked on an aggressive spending spree, laying out over $15 billion to acquire 20 companies in the Middle East and Africa. Since 2003, it has grown from 600,000 customers to more than 45 million customers, with $5.9 billion in revenues. The company's growth was most significantly shaped by its May 2005 acquisition of Celtel International, one of the leading mobile telecom providers in sub-Saharan Africa. Zain now has a presence in 15 countries across Africa (and in seven more in the Middle East). It continues to grow and aspires to join the ranks of the top 10 mobile telecoms in the world.

The company's rapid expansion was abetted by its access to cheap credit – the cost of debt for Zain was significantly

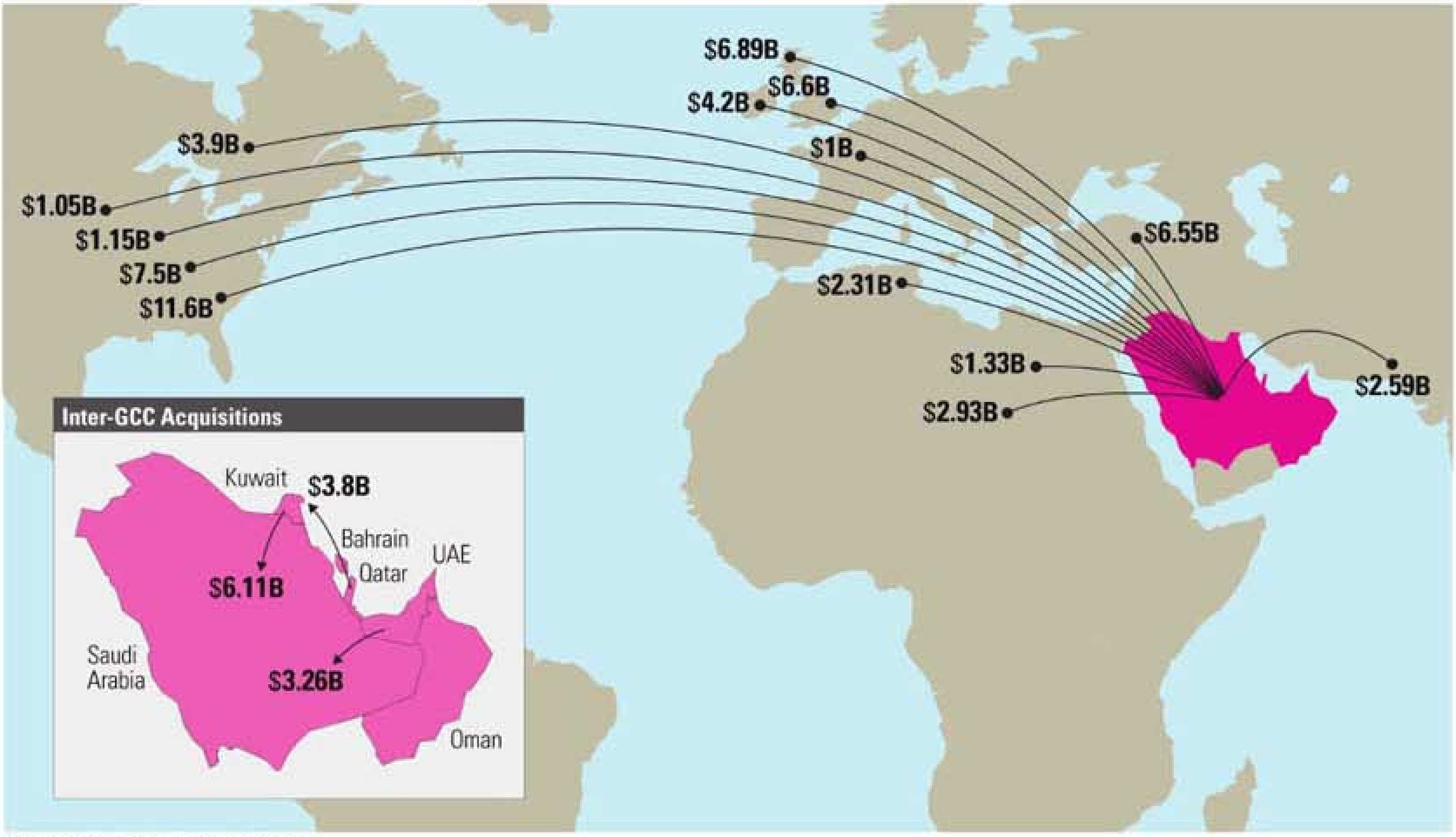
Current-Account Balances
(US$ billions)

Awash in liquidity, GCC states today directly or indirectly finance roughly one-quarter of the U.S's current-account deficit. These states now play nearly as important a role as China in accumulating large amounts of U.S. securities.



Major Gulf Investments Since 2004

One of the ways in which GCC states are shaping global capital is by making significant financial investments in emerging markets and in the developed world. We've listed here deals valued at $1 billion or more.



Source: Dealogic, Factiva, Reuters

$1 BILLION GERMANY
Dubai International Capital (UAE) acquired 2% stake in DaimlerChrysler
January 2005

$1.05 BILLION U.S.
Emaar Properties (UAE) acquired John Laing Homes
June 2006

$1.15 BILLION U.S.
Dubai Ports International (UAE) acquired CSX World Terminals
February 2005

$1.33 BILLION SUDAN
MTC (Kuwait) acquired 61% of Mobitel
February 2006

$2.31 BILLION TUNISIA
TECOM-DIG (UAE) acquired 35% stake in Tunisie Telecom
May 2006

$2.59 BILLION PAKISTAN
Etisalat (UAE) acquired 26% stake in Pakistan Telecommunication
March 2006

$2.93 BILLION AFRICA
MTC (Kuwait) acquired 85% stake in Celtel
May 2005

$3.26 BILLION SAUDI ARABIA
Etisalat (UAE) acquired telecom license to operate in Saudi Arabia
March 2004

$3.8 BILLION KUWAIT
Qatar Telecom acquired 51% stake in National Mobile Telecommunications
March 2007

$3.9 BILLION ONTARIO
Prince Al-Waleed bin Talal (Saudi Arabia) acquired Fairmont Hotels
January 2006

$4.2 BILLION IRELAND
Arcapita (Bahrain) acquired Viridian Group
December 2006

$6.11 BILLION SAUDI ARABIA
MTC (Kuwait) acquired telecom license to operate in Saudi Arabia
June 2007

$6.55 BILLION TURKEY
Oger Telecom (Saudi Arabia) acquired 55% stake in Turk Telekom
July 2005

$6.6 BILLION UK
Maan Al-Sanea's Singularis (Saudi Arabia) acquired 3.1% stake in HSBC
April 2007

$6.89 BILLION UK
Dubai Ports World (UAE) acquired P&O
March 2006

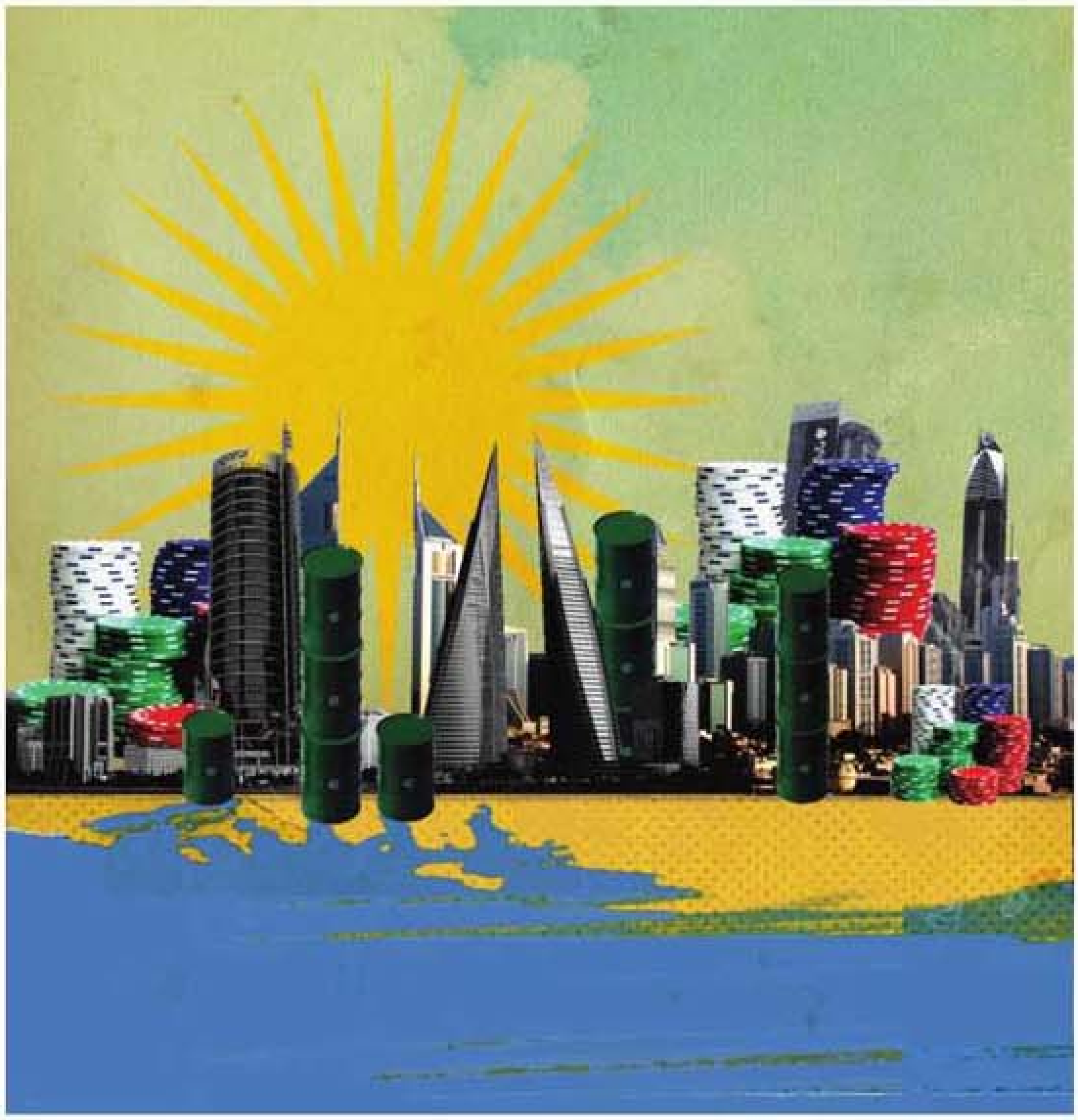
$7.5 BILLION U.S.
Abu Dhabi Investment Authority (UAE) acquired 4.9% of Citigroup
June 2008

$11.6 BILLION U.S.
SABIC (Saudi Arabia) acquired GE Plastics
August 2007

lower than that for regional competitors such as Orascom Telecom in Egypt and MTN in South Africa. In addition, Kuwait Investment Authority – Kuwait's sovereign wealth fund, estimated to hold in excess of $225 billion in assets – has a 25% stake in Zain and remains its single biggest shareholder.

Most Western mobile operators would be wary of entering a region so fundamentally different from their own, but Middle Eastern executives at Zain now view their company as a global telecom that will become primarily African in the days to come. With the likes of Zain and MTN on the prowl across the African continent, Western majors like Vodafone have had to sit up and take notice.

Looking eastward. China and India have attracted increasing flows of GCC capital. Recent deals in China – a country that gets more than half of its imported oil and natural gas from the Middle East – include a $5 billion refinery



that Kuwait is building in China's Guangdong province, crude-oil facilities with a capacity of 30 million metric tons that Saudi Arabia is setting up on Hainan Island, and a potential joint venture between Saudi Aramco and the Chinese petrochemical company Sinopec to set up a string of new refineries throughout the region. More and more of the energy industry is falling under the management of state-owned companies around the world – Arab, Chinese, and Russian. As Chinese firms attempt to create the infrastructure to ensure their country's access to oil, and as a greater percentage of the world's resources are in state-owned hands, the so-called Western majors (BP, Total, Exxon Mobil) are increasingly being relegated to supporting roles in the industry.

The emergence of these new state-owned players, paired with the West's dependence on oil from a few countries, has placed greater importance on the role of technology as a source of competitive advantage in the energy industry. Western oil companies have, over time, ceded that technological edge to state-owned players: Think of Saudi Aramco's partnerships with Dow and Sumitomo in refinery-integrated petrochemical complexes. Meanwhile, direct traffic between two capital-surplus regions, the Middle East and China, is now well-established.

Investment into and from China is driven by large deals often orchestrated from the top down. By contrast, Indian connections to the Middle East continue to be more grassroots driven, led by the large south Asian diaspora in the Gulf states. (See Tarun Khanna's most recent book, *Billions of Entrepreneurs.*) The exact size of expatriate communities in the GCC is difficult to establish, but some estimates suggest there are currently more than 4 million Indians in the Gulf, and in some GCC countries, Indians and Pakistanis make up more than 60% of the population. These workers have primarily held blue-collar and clerical jobs but recently have started moving into more skilled technical and managerial positions. The Reserve Bank of India (RBI) has reported that Indians living abroad transferred about $25 billion to India in fiscal year 2005–2006; almost one-quarter of those remittances came from the Gulf region. The capital inflows have facilitated the creation of new businesses and the formation of social service organizations such as nursing homes and educational institutions in some Indian states. The southwestern Indian state of Kerala is a notable example: Kerala has a population of around 32 million. Because of high unemployment levels there, one Keralite in six works abroad, and more than 90% of these emigrants are based in the Gulf. In 2007, Keralites sent home remittances that accounted for 20% of the state's net domestic product and were critical in improving living standards across the state. Strong diasporic links like these are giving the GCC states a powerful position of influence in the region.

Reshaping Home

Perhaps the most fundamental transformations are happening in the GCC countries themselves. Amid the colossal build-up of wealth over just the past few years, you might expect that oil-producing states would be lulled into complacency, tempted to live exclusively – and quite comfortably, in fact – off their abundant surpluses. You would be wrong. The Gulf region is intent on creating a name for itself as a center for innovation. Markets for goods and services coming into and being sold out of GCC countries are booming. A healthy rivalry has emerged among GCC states to be recognized as *the* destination for world-class logistics, real estate, tourism, health care, alternative energy, and so on. This has led to some aggressive efforts within GCC states to improve their financial institutions and to develop leading-edge sustainable infrastructures.

Developing a world-class industrial and service economy. Consider what Abu Dhabi's Mubadala Development Company has achieved in just six years. A March 2007 *Fortune* article labeled the capital of the United Arab Emirates the "richest city in the world." Rich? Absolutely. Modern? To be sure, as Abu Dhabi has filled itself with the trappings of early twenty-first century capitalism. But Abu Dhabi is not yet a "developed" economy; it has lagged in development of infrastructure, education, health care, and innovation, and it doesn't have an indigenous institutional infrastructure to support local economic activity in these areas. (For more on infrastructure development in emerging economies, see Tarun Khanna and Krishna G. Palepu's "Emerging Giants: Building World-Class Companies in Developing Countries," HBR October 2006.) Of course, it doesn't help that most of its citizens are used to being supported by the government and, until very recently, were not entirely familiar with the hurly-burly of entrepreneurship and global competition.

Having learned hard lessons from the most recent era of inexpensive oil, Abu Dhabi's leaders want change: a future in which their incomes aren't tied so inextricably to the volatile price of a commodity. In particular, they want a developed industrial and service economy with meaningful jobs and leadership opportunities for citizens. But they know they can't mimic the low-wage labor path followed by scores of countries including China and South Korea. That would take far too much time and require far too much change to underlying institutions. Nor can Abu Dhabi follow the Indian example of relying on bottom-up indigenous enterprise development. It lacks the deep pools of highly skilled technical talent and large labor forces that characterize at least some Indian metropolises.

With this in mind, the president of the UAE, Sheikh Khalifa bin Zayed Al Nahyan, issued a decree in 2002 establishing Mubadala as a government-owned investment vehicle. Unlike ADIA's mandate to build and manage a financial portfolio, Mubadala was charged with nothing less than remaking Abu Dhabi into the hub of the Gulf, establishing businesses in strategic sectors at home and collaborating with partners abroad. This emphasis on active partnerships as the central basis for Abu Dhabi's internal development marks a break with the past, in which leaders in the Gulf states delegated investment decisions to Western bankers and executives.

Mubadala has already made its mark. In 2005, Mubadala bought 5% of Ferrari for \$138 million, and in 2007 a Mubadala affiliate, Aldar Properties, acquired the rights to set up the world's first Ferrari theme park, Ferrariland, in Abu Dhabi. Mubadala then used its contacts to join, starting in 2009, the Formula One racing circuit. Through planned outposts of the Guggenheim and Louvre in Abu Dhabi, the government is branding the emirate aggressively as a cultural and tourism destination. Even the venerable GE announced in July 2008 a long-term deal with Mubadala that includes an $8 billion joint venture focused on infrastructure development in the region.

The investment group's development work in the financial services sector is still in the making, but one of the first deals it's made – buying a 7.5% stake in the well-known Carlyle Group in 2007 for $1.35 billion – has established an important relationship for Mubadala.

Another focus for Mubadala is health care. Abu Dhabi has traditionally sent its citizens abroad for health care – some 60% of the 1 billion dirhams spent on foreign health care each year has been not for medical services but for patient travel expenses. The emirate now wants to create a world-class health care system at home. Mubadala has again led the way, engaging in joint projects with the Imperial College of London Diabetes Centre and the Cleveland Clinic and establishing the Abu Dhabi Knee and Sports Medicine Centre. While Mubadala's goal is to treat Abu Dhabi nationals more effectively at home, it also expects the country to attract wealthy neighbors who would usually fly to the United States or Europe for treatment.

In terms of industrial services, Mubadala has partnered with Dubai Aluminum to create Emirates Aluminum (EMAL). When EMAL's gigantic, 720,000-ton-per-annum smelter is complete in 2010, Abu Dhabi will become one of the most important aluminum producers in the world, with nearly 5% of the world's total capacity. While some of that aluminum will be for export, homegrown industries are set to use much of the production, and Mubadala is looking for partners in Europe to capitalize on its stock. Then high-end aluminum automotive parts, perhaps even vehicle structures, and aircraft components could be manufactured locally. Mubadala's 17% stake in Dutch Spyker Cars – which are made from aluminum – and its 35% stake in Italian Piaggio Aero are the building blocks for the country's presence in a number of important industries.

Finally, Mubadala executives plan to move even further up the global value chain in a handful of technologically advanced industries. Mubadala's stake in AMD, the world's second-largest maker of computer microprocessors, has given it a foothold in the high-tech sector. Mubadala's Masdar Initiative and its commercial arm, the Abu Dhabi Future Energy Company, aim to lead the way in developing, ironically enough, alternative energy technologies. The Masdar Initiative, now under way, is a development project that will comprise a research center, a university developed in partnership with MIT, and a special economic zone designed to promote the innovation and commercialization of alternative energy sources. Abu Dhabi's leaders recognize that one day either the oil will run out or the world will move away from fossil fuels. But even when oil is no longer the world's most important commodity, Abu Dhabi plans to be a force to reckon with in the world economy.

The development model Mubadala is forging is already being emulated across the Gulf region.

> Islamic financial institutions are growing at the fastest rate in the banking sector.

Creating a parallel financial market. Just as important as the Mubadala-like development funds is the resurgent interest in Islamic finance – a trend whose impact reaches far beyond the GCC's borders. To understand the significance of this trend, one has to first understand the strictures that Islam places on some kinds of commerce.

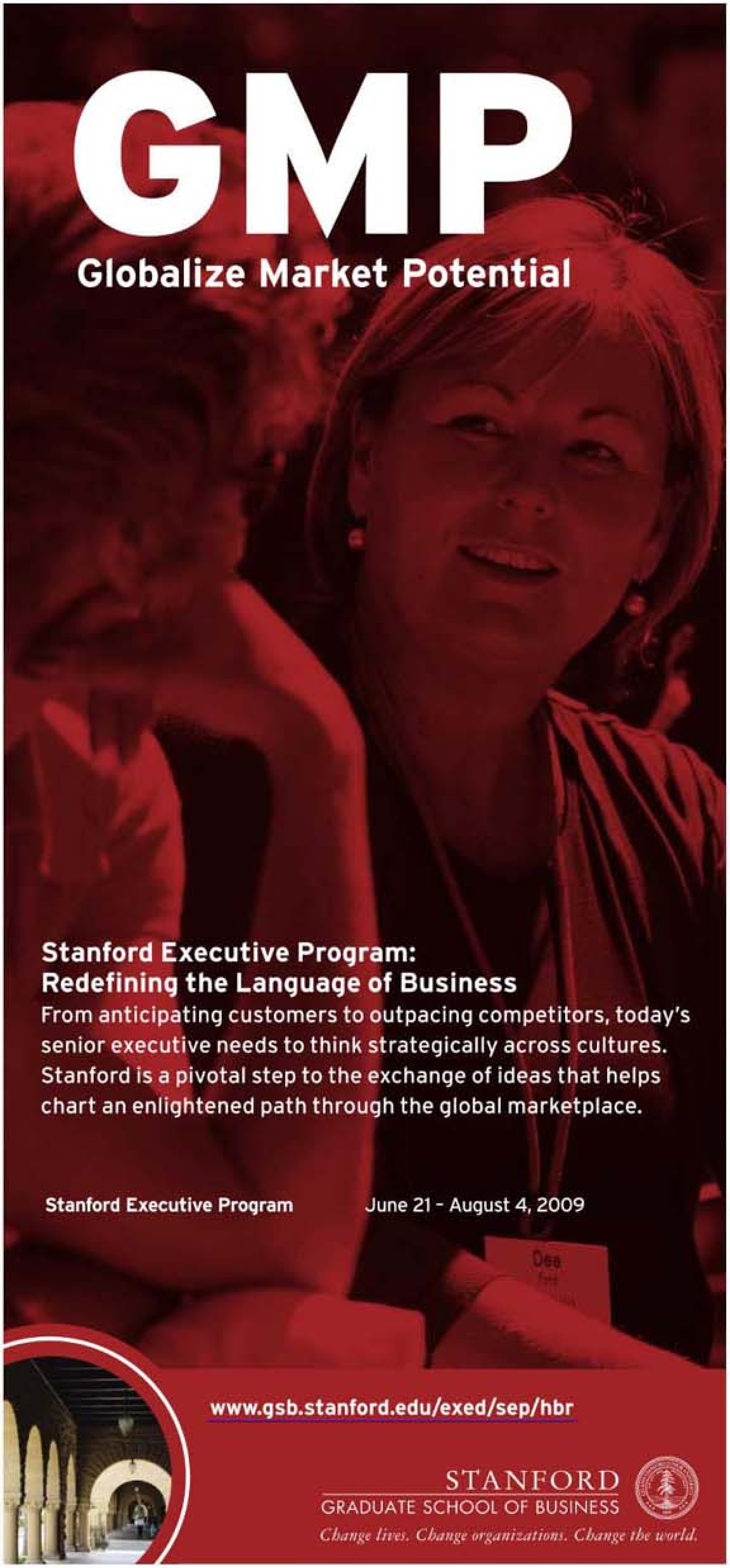
At its core, Islamic finance is a faith-driven industry with its foundations in the Islamic bans on *riba* (interest) and *gharar* (excessive risk). Accordingly, to comply with the body of Islamic religious law – called sharia – observant Muslims need to steer clear of pure risk-based transactions, paying or receiving interest in any form, and investments in prohibited "sin sectors," such as alcohol, gambling, and pornography. While these restrictions have been in place for all of Islam's 1,400 years, it was not until the first oil boom in the 1970s that the Muslim market became significant enough and the use of financial instruments widespread enough to incubate a demand for sharia-compliant financial services. A cluster of Islamic financial institutions emerged during this time, including the Islamic Development Bank (1975), the Kuwait Finance House (1977), and the Jordan Islamic Bank (1978). Partly due to a subsequent decline in oil prices, these early Islamic banks remained small and local during the 1980s and 1990s. However, with oil prices surging and the perception of a post–September 11 revival in Islamic finance, these banks are certainly not being passive this time around.

Gulf petrodollars are actively supporting the burgeoning regional preference for engaging in transactions that are compliant with Islamic law. The industry has grown at 15% to 20% per year. More than 350 Islamic banks now provide products and services in some 60 countries worldwide. Conservative estimates suggest that Islamic institutions are managing upwards of $500 billion in assets. While that amount represents only around 1% of global banking assets – roughly the size of Wells Fargo, America's fifth-largest bank in terms of assets – these institutions are growing at the fastest rate in the banking sector, according to the 2007 World Islamic Banking Competitiveness Report. They are expected to have over $1 trillion in assets under management by 2010 as they continue to capture an increasing share of the business of the world's 1.6 billion Muslims.

To be sure, certain Western organizations such as HSBC, BNP Paribas, Standard Chartered, and Citigroup have been reaping the profits of Islamic banking for almost a decade, running sharia-compliant operations in the Gulf and Asia. But they are now facing competition from a host of new heavyweight entrants such as Morgan Stanley, Barclays Capital, and Deutsche Bank – as well as from smaller players like WestLB and local Middle Eastern banks on an expansion binge.

There is a lot of money to be managed in the Gulf – and more is pouring in. Over the next 25 years, according to a recent report by Goldman Sachs, the cumulative oil and natural gas windfall accruing to the GCC region could reach $4 trillion to $5 trillion. As much as one-third of this could be channeled through Islamic financial instruments. In addition, the petrodollar-triggered regional real estate boom has created tremendous opportunities for project and infrastructure financing. At present, the GCC has active construction projects worth over $2.7 trillion, including the multibillion-dollar King Abdullah Economic City, the Saudi Power Network, and the Bawadi tourist and leisure resort project in Dubai. Banks with the right sharia credentials stand to benefit from these and future opportunities.

Various countries – not just Muslim ones like Malaysia or Bahrain that have traditionally led in this industry – are jostling to become sharia-compliant investment hubs. Hoping to tap into some of the $200 billion in Arab funds currently being managed by traditional Swiss institutions, Faisal Private Bank, the first European Islamic private bank was launched in Switzerland in 2006. A few months later, in March 2007, the European Islamic Investment Bank was



licensed in the UK and became the first dedicated sharia-compliant investment bank in Europe. The UK government also plans to become the first Western government to issue *sukuks* (Islamic financial certificates similar to bonds) by 2009, further strengthening London's bid to become the main center for Islamic finance in the West.

In the United States, where national efforts to cater to Gulf investors are far from intensive, financial institutions like Chicago-based Devon Bank are recognizing areas of opportunity. Devon is a small bank headquartered in an ethnically diverse neighborhood that includes a large Muslim population (primarily from Bangladesh, India, and Pakistan). Managers at Devon heard concerns from some of its Muslim customers that conventional financial products and services being offered weren't in line with their religious practices. So in 2003, the bank started providing sharia-compliant mortgages to local Muslims. Business took off, news of the program spread through word of mouth, and soon Devon was receiving inquiries from underserved Muslim communities throughout the country. Responding to this demand, Devon expanded its program to cover 36 of the 50 U.S. states and Islamic mortgages now constitute more than 75% of the bank's total mortgage portfolio.

In 2001, the U.S. mortgage giant Freddie Mac also started dipping into the sharia-compliant mortgage market through four local banks, including Devon. The transaction volume has remained very small, however; the company purchased only around $250 million in Islamic mortgages in 2007. Overall, the Islamic finance industry in the United States remains underdeveloped, especially compared with the aggressive, government-supported efforts being made in the financial centers of London and Kuala Lumpur. While this neglect does not signal serious negative consequences for U.S. financial markets in the near term, it may well become a missed opportunity as demand for these services grows in tandem with Gulf petrodollar wealth.

...

To date, the West's focus on the burgeoning effects of the petrodollar surplus has been quite narrow: For example, the media have restricted coverage to the impact of expensive oil and the costs imposed on and by energy-scarce, fast-growing nations such as China and India. To the extent that any attention has been devoted to the way petrodollars are being spent, the spotlight has been on the activities of increasingly powerful sovereign wealth funds that are acting almost as a purchaser of last resort, taking equity stakes in faltering U.S. banks and investment houses.

In our view, this is perhaps the least important of the effects petrodollar surpluses are having on global commerce. The GCC states' efforts to reshape their business relationships and interests in their near abroad – the Middle East and North Africa region – are more important than their efforts to bail out the West. And the GCC's initiatives to reconfigure and strengthen infrastructure and institutional development on the home front are even more important.

For Western executives, the broader significance of this transformation rests in their collective understanding of global capitalism: Potential partners and emerging competitors will increasingly come from the GCC states, as will capital infusions. Top talent will find its way to these countries, lured by high-end management opportunities and higher-end salaries.

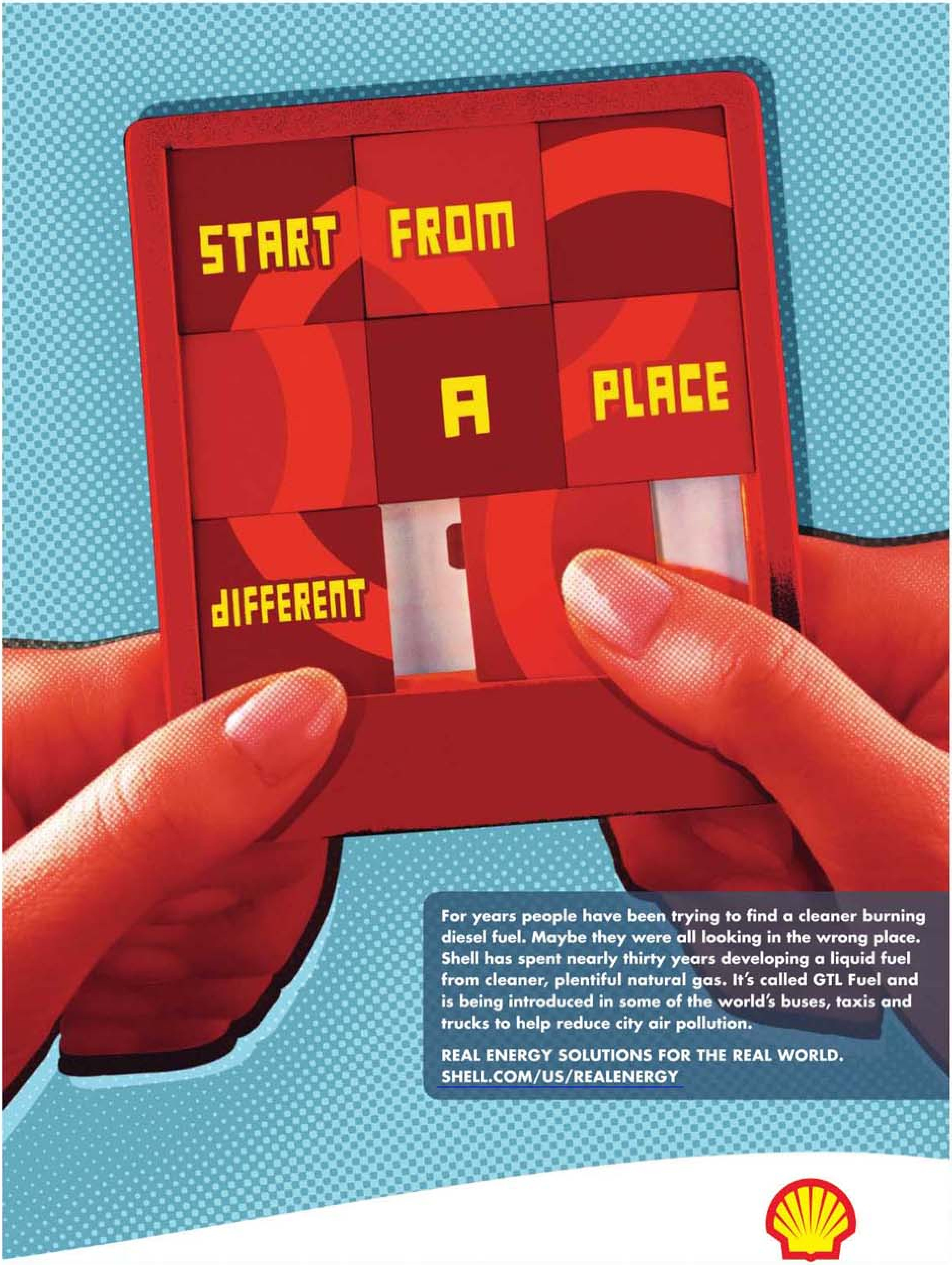
The Gulf region is filled with a lot more than just oil. It has the ambition, talent, and capital to be an important hub in the world's financial system. It cannot – and should not – be ignored.

Rawi Abdelal (rabdelal@hbs.edu) *is a professor in the Business, Government, and International Economy Unit at Harvard Business School in Boston and the author of* Capital Rules: The Construction of Global Finance *(Harvard University Press, 2007).* **Ayesha Khan** *(akhan@hbs.edu) is a doctoral candidate in strategy at Harvard Business School.* **Tarun Khanna** *(tkhanna@hbs.edu) is the Jorge Paulo Lemann Professor at Harvard Business School and the author of* Billions of Entrepreneurs: How China and India Are Reshaping Their Futures – and Yours *(Harvard Business Press, 2008).*

Reprint R0809K
To order, see page 139.

"Pay close attention to what I have to say as the reasons for firing you have changed."

P.C. Vey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Letters to the Editor

Leadership's Online Labs

I have been dedicated to leadership in different capacities for most of my adult life and have looked to *Harvard Business Review* as a source of wisdom, practical knowledge, and thought leadership. The May 2008 cover, featuring the article about "Tomorrow's Leaders" ("Leadership's Online Labs," by Byron Reeves, Thomas W. Malone, and Tony O'Driscoll), had me eagerly turning to page 58.

My initial reaction was of a total disconnect. How could tomorrow's leaders possibly be represented by the emaciated, dazed executive, overshadowed by a violent, somewhat demonic-looking character in his immediate background?

Our future needs leaders who will get out from behind their desks and make themselves available. The complex, chaotic, dehumanizing tendencies of future business environments will need to be offset by leaders who offer empathy and understanding, who can listen, shake a hand, pat a back, make eye contact, and acknowledge the people who do the work of their institutions.

Betty L. Shotton
Leadership Consultant and Speaker
Berkana Consulting Group
Ocracoke, North Carolina

Reeves, Malone, and O'Driscoll respond: Well, we didn't draw the picture, but we do like it. We have two comments in response to Betty L. Shotton's letter.

First, we don't see tomorrow's leader in the image. Rather, we see today's disengaged worker, shadowed by his self-representation in a compelling virtual environment. The characterization of the "skin" he wears in the game (orc? martian?) is certainly up for discussion. In any case, though, he's in a world where he's able to tackle organizational goals using the components that make games engaging: a compelling narrative, self-representation through an avatar, transparency of reputation and expertise, feedback in multiple time domains, methods of sharing success within groups, and fair competition that promotes meritocracy.

Shotton concludes with a great list of social tactics that will enhance leadership. And we agree that future leaders – indeed, leaders of any era – must be able to deal with the emotional needs of others using empathy, understand-

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We welcome letters from all readers wishing to comment on articles in this issue. Early responses have the best chance of being published. Please be concise and include your title, company affiliation, location, and phone number. E-mail us at hbr_letters@harvardbusiness.org; send faxes to 617-783-7493; or write to The Editor, Harvard Business Review, *60 Harvard Way, Boston, MA 02163. HBR reserves the right to solicit and edit letters and to republish letters as reprints.*

ing, and respect. But we suspect that in many more cases than the letter writer believes, future leaders will have to exercise those skills through telephones, keyboards, video screens, and other forms of electronic communication that haven't even been invented yet, not just in face-to-face interactions.

HBR articles provide thought leadership on the many facets of business today and in the future; in my opinion, "Leadership's Online Labs" was no exception. However, you really blew it with your cover image and the feature article's lead-in picture by presenting tomorrow's leader as a man. The gender bias is ironic considering that the story is about digital and virtual collaboration and leadership, areas in which women and men may well succeed equally. In fact, many anticipate that women will become even more successful in the new global world of business because virtual teams and processes – and resulting lack of face-to-face requirements – will suppress gender bias.

Martha J. Collins
Business Technology Manager
Air Products and Chemicals
Allentown, Pennsylvania

Editor's note: HBR agrees that tomorrow's cadre of leaders will include both women and men – which is why the release of our May 2008 issue ran with two covers. Half the issues were published with the image of a man to which Martha J. Collins refers, and the other half carried an image of a woman.

Reverse Engineering Google's Innovation Machine

Sadly, the Google way of doing things, as described in the article "Reverse Engineering Google's Innovation Machine" by Bala Iyer and Thomas H. Davenport (April 2008), is not new. Digital Equipment Corporation (DEC), where I spent 16 years, first instituted most of the management practices that Google and other modern companies have now adopted. DEC had a Midas touch for technology. The company had smart, highly empowered people, and innovative product ideas sprang up everywhere.

There are a lot of theories about what happened to DEC. We know that the company grew very rapidly, enjoyed great success, and then fell off the industrial radar screen rather suddenly. What will happen to Google? No one knows for sure, but we know from the DEC story that success breeds its own problems and that no amount of innovation will guarantee success forever. Cultures like DEC and Google have opposing tendencies within their DNA that we do not yet fully understand. Though they create workplace environments that employees love and that foster tremendous innovation, they also lack the discipline, controls, and professional management of an IBM or a GE.

Peter S. DeLisi
President
Organizational Synergies
Fremont, California

The title of Iyer and Davenport's article promised a fascinating narrative on how the high-profile, revolutionary company that is Google churns out all kinds of online tactics and tools. The reality, however, turned out to be largely a paean to the organization.

As a marketing professional, I think Google is a godsend in home page–directed research, and the company's Gmail, by which I sent this letter, has an excellent spam filter. But I have precious little time to plumb the depths of Google's website to discover other potentially useful features, and I know I'm not alone in that regard.

So, I suspect that despite Google's vaunted culture of permitting new services to be internally developed and then beta-tested with willing on-site subjects, there is a huge amount of human capital and time wasted on projects that don't work, get lost in the mix, or are just plain harebrained.

Procter & Gamble's culture, by contrast, is highly successful and profitable. One of CEO A.G. Lafley's abiding precepts is to make consumers and customers the boss, not the CEO or the management team. As new P&G products and line extensions hit the market, it seems clear that P&G has rigorously vetted, formulated, and tested every last detail, then made sure that consumers are aware of that fact via advertising and in-store promotion. Yes, Google services are different from products like Swiffer and Febreze. But how different?

James K. Rowbotham
Director, Business Development and Research
Marinelli & Company
New York

Iyer and Davenport painted a good, high-level picture of Google's culture and internal processes. But I do not agree with their belief that the company has an "...unexpressed commercial mission: to monetize consumers' intentions...."

I have worked for several years with Google's engineering, product, and business development teams and am constantly impressed by their steadfast efforts to put consumers' experiences first. Money is rarely a topic of discussion. In fact, I can affirm that offers of large sums have been useless in changing their minds.

Arjun Srinivasan
President
Local Media Labs
San Francisco

Iyer and Davenport respond: Peter S. DeLisi, James K. Rowbotham, and Arjun Srinivasan all make interesting points about Google and other organizations to which it might be compared.

We don't disagree with DeLisi's observation that DEC shared attributes with Google, particularly with regard to the two companies' innovative cultures. But we don't recall, from our dealings with DEC, that it had tools and processes such as prediction markets, a mandate for employees to spend 20% of their time on innovation, and extensive use of analytics. And although innovative products emerged from DEC, they didn't spill out of the organization at the rate that they do from Google.

Neither do we disagree with Srinivasan about Google's high regard for its users, though we find it difficult to believe that he questions the company's intent and ability to monetize customer intentions. How else could the company achieve $17 billion in advertising revenues and more than $4 billion in after-tax profits?

We take exception, however, to Rowbotham's implication that we are overly worshipful of Google, although we are sympathetic to his suggestion that its stream of new products requires too much attention from users like himself. In fact, we note a potential set of pitfalls for every aspect of Google that others might emulate and observe that its stream of new products "...means that a revolutionary new product emerging from the Google soil might not get noticed for a while – but recall that Google is in no hurry." Rowbotham praises Procter & Gamble's product development process, and we agree that the company is indeed successful and well managed. Still, in Larry Huston and Nabil Sakkab's article "Connect and Develop: Inside Procter & Gamble's New Model for Innovation" (March 2006), P&G executives describe how they would like to increase the frequency of new offerings by looking outside the company for new ideas.

We're sure we missed some things in our reverse engineering of Google's innovation capability. But several senior Google executives have said that we got it amazingly right.

The Experience Trap

In their article "The Experience Trap" (February 2008), Kishore Sengupta, Tarek K. Abdel-Hamid, and Luk N. Van Wassenhove present helpful methods for improving the performance of software development projects. An additional key skill for project managers, however, is the ability to limit repeated demands for project extensions and changes. Without such restraint, constantly modified requirements can reach a level of complexity that defeats goals for quality, on-time delivery, and on-budget costs.

Ideally, all the requirements for a project will be defined before it begins. While modifications are perhaps inevitable, and new techniques for coping with them are useful, developing stakeholder management skills and effective strategies to limit the number of changes is critical to a software project's success.

Dan McAran
Product Manager
Do Process Software
Toronto

Sengupta, Abdel-Hamid, and Van Wassenhove respond: Changes in requirements can indeed be disruptive and frequently cascade out of control. Managing them is admittedly an important issue for project managers and other stakeholders. However, we point out in our article what we think are deeper dysfunctional practices – the "bad" things we do to ourselves because of deficiencies in the learning loop, the consequences of which are frequently problematic for projects. Managers often attribute a project's problems to outside sources, such as customers who ask for too many changes and unanticipated external events. But these attributions hamper learning. Managers are less inclined to look closely at structural problems in their own decision-making and organizational practices if they are rushing to find fault with the customer. By not recognizing the consequences of their own actions, managers forgo the opportunity to learn from their mistakes and fix them.

Executive Summaries

SEPTEMBER 2008

"If we aren't always at least a little scared, we're not doing our job."
–page 64

LEADERSHIP

COVER STORY

64 How Pixar Fosters Collective Creativity

Ed Catmull

Many people believe that good ideas are rarer and more valuable than good people. Ed Catmull, president of Pixar and Disney Animation Studios, couldn't disagree more. That notion, he says, is rooted in a misguided view of creativity that exaggerates the importance of the initial idea in developing an original product. And it reflects a profound misunderstanding of how to manage the large risks inherent in producing breakthroughs.

In filmmaking and many other kinds of complex product development, creativity involves a large number of people from different disciplines working effectively together to solve a great many inherently unforeseeable problems. The trick to fostering collective creativity, Catmull says, is threefold: Place the creative authority for product development firmly in the hands of the project leaders (as opposed to corporate executives); build a culture and processes that encourage people to share their work-in-progress and support one another as peers; and dismantle the natural barriers that divide disciplines.

Mindful of the rise and fall of so many tech companies, Catmull has also sought ways to continually challenge Pixar's assumptions and search for the flaws that could destroy its culture. Clear values, constant communication, routine postmortems, and the regular injection of outsiders who will challenge the status quo are necessary but not enough to stay on the rails. Strong leadership is essential to make sure people don't pay lip service to those standards. For example, Catmull comes to the orientation sessions for all new hires, where he talks about the mistakes Pixar has made so people don't assume that just because the company is successful, everything it does is right.

Reprint R0809D; HBR Article Collection "Secrets to Successful Innovation" 12089

FORETHOUGHT

26 New Thinking for a New Financial Order

Diana Farrell

World financial assets are growing faster than the world economy. Confronting that and other modern realities of global finance requires more than regulatory reform: It calls for deeper thinking about new private and public international players and markets. **Reprint F0809A**

Lessons from the Oxford and Cambridge Boat Race

Mark de Rond

After 180 years of competitive rowing, the Cambridge University Boat Club has a tried-and-true method for assembling teams: It tests different athletes in different combinations to identify not just the best rowers, but the best groupings of them. Try taking a page from that playbook as you put together your next high-performance business team. **Reprint F0809B**

Start Thinking About Carbon Assets – Now

Alex Rau and Robert Toker

If you're afraid to involve your company in the carbon-credit market, the prospect of delaying your participation should scare you more. The authors' guide to the basics about carbon assets will assuage your fears by arming you with facts. **Reprint F0809C**

The Best Advice I Ever Got

Linda Mason

The chairman and founder of Bright Horizons Family Solutions heeded the wisdom of visionary real estate developer James Rouse: Make your passions central to your life. By doing that, she has created a highly successful company with employees who are driven by its mission to give children the best possible start in life. **Reprint F0809D**

Prevent Disasters in Design Outsourcing

Jason Amaral and Geoffrey Parker

When outsourcing the design of a platform-based product, avoid three common perils: misaligned objectives, unanticipated rivalry between design partners, and poor version control. If you don't elude these dangers, your planned cost savings – and even your entire platform – could be in jeopardy. **Reprint F0809E**

A Conversation with Thorkil Sonne

This Danish entrepreneur shares widely applicable lessons from his experience managing employees with autism. More than two-thirds of workers at his software-testing firm, Specialisterne, have the condition and are thriving in their jobs. **Reprint F0809F**

Put Your Data to Work in the Marketplace

Thomas C. Redman

Most companies underutilize their data assets, but sometimes they figure out how to leverage them to satisfy marketplace demands. The author outlines nine ways to create new value from your data. **Reprint F0809G**

Reviews

Featuring *Buying In: The Secret Dialogue Between What We Buy and Who We Are*, by Rob Walker

HBR CASE STUDY

39 Don't Try This Offshore

Stephen Brown

Since the mid-1990s, management-metaphor boutique Serendipity Associates (SA) has been offering clients sizzling similes and snappy sound bites. But the head of SA, Barton Brady, gets word that someone is now poaching in his territory. It's the low-rent operation Tropes R Us, which has started offshoring production to Ireland and will soon flood the market with high-quality, low-cost metaphors. Does this move confirm Brady's fear that the U.S. is losing its competitive edge in right-brain work? Four experts comment on this fictional case study.

Daniel H. Pink, an author and consultant, says SA should move to higher ground – to find new ways to differentiate itself on the basis of right-brain capabilities that will be difficult to offshore. Doing this, he writes, requires an education system that nurtures creativity.

John Chuang, CEO of talent consulting firm Aquent, writes that Brady could rally U.S. citizens to protest the country's current immigration policy, which makes it difficult for companies to import top talent. Brady should also broaden the definition of SA's business.

Richard Phelps, a human resource executive at PricewaterhouseCoopers, argues that contrary to the prevailing view of many in the West, workers in emerging economies are equal to the demands of creative work. SA should assemble the best right brains on the planet and either hire them or contract with them to represent the SA brand.

Charlie Wrench, the CEO of brand and design consulting firm Landor Associates, advises Brady not to worry about his country – which Wrench believes will continue to attract a disproportionate share of the world's creative talent – but about his multinational clients, who need service providers to display a powerful combination of right-brain and left-brain skills.

Reprint R0809A
Reprint Case only R0809X
Reprint Commentary only R0809Z

| INNOVATION & CREATIVITY |

DIFFERENT VOICE

53 | Making Sense of Ambiguous Evidence

A Conversation with Documentary Filmmaker Errol Morris

The information that top managers receive is rarely unfiltered. Unpopular opinions are censored. Partisan views are veiled as objective arguments. Honest mistakes are made. The manager is then left to sort it all out and come to a wise conclusion.

Few people know how to get an accurate read on a situation like documentarian Errol Morris. He is the award-winning director of such films as *The Thin Blue Line* and this year's *Standard Operating Procedure*, an exploration of the elusive truth behind the infamous photographs taken at Abu Ghraib prison. The *Guardian* has ranked him among the world's top 10 directors, crediting him with "a forensic mind" and "a painter's eye."

In this article, Morris talks with HBR's Lisa Burrell about how he sorts through ambiguous evidence and contradictory views to arrive at the real story. "I don't believe in the postmodern notion that there are different kinds of truth," he says. "There is one objective reality, period." Getting to it requires keeping your mind open to all kinds of evidence – not just the parts that fit with your first impressions or developing opinions – and, often, far more investigation than one would think.

If finding the truth is a matter of perseverance, convincing people of it is something of an art, one with which Morris has had much experience not only as a documentarian but also as a highly sought-after director of TV ads for companies like Apple, Citibank, Adidas, and Toyota. He holds up John Kerry's 2004 bid for the U.S. presidency as a cautionary tale: Kerry struck voters as inauthentic when he emphasized only his military service and failed to account for his subsequent war protest. Morris would have liked to interview him speaking in his own words – natural, unscripted material – so that his humanity, which seemed to get lost in the campaign, could emerge.

Reprint R0809B

| LEADERSHIP |

74 | Social Intelligence and the Biology of Leadership

Daniel Goleman and Richard Boyatzis

A decade ago in these pages, Goleman published his highly influential article on emotional intelligence and leadership. Now he, a cochair of the Consortium for Research on Emotional Intelligence in Organizations, and Boyatzis, a professor at Case Western, extend Goleman's original concept using emerging research about what happens in the brain when people interact. *Social intelligence*, they say, is a set of interpersonal competencies, built on specific neural circuits, that inspire people to be effective.

The authors describe how the brain's *mirror neurons* enable a person to reproduce the emotions she detects in others and, thereby, have an instant sense of shared experience. Organizational studies document this phenomenon in contexts ranging from face-to-face performance reviews to the daily personal interactions that help a leader retain prized talent. Other social neurons include *spindle cells*, which allow leaders to quickly choose the best way to respond to someone, and *oscillators*, which synchronize people's physical movements. Great leaders, the authors believe, are those whose behaviors powerfully leverage this complex system of brain interconnectedness.

In a handy chart, the authors share their approach to assessing seven competencies that distinguish socially intelligent from socially unintelligent leaders. Their specific advice to leaders who need to strengthen their social circuitry: Work hard at altering your behavior. They share an example of an executive who became socially smarter by embracing a change program that comprised a 360-degree evaluation, intensive coaching by an organizational psychologist, and long-term collaboration with a mentor. The results: stronger relationships with higher-ups and subordinates, better performance of her unit, and a big promotion.

Reprint R0809E; HBR Article Collection "Best of HBR on Emotionally Intelligent Leadership, 2nd edition" 12088

| STRATEGY & COMPETITION |

82 | Seven Ways to Fail Big

Paul B. Carroll and Chunka Mui

What causes companies to fail spectacularly? A recent study of 750 of the biggest U.S. business disasters of the past 25 years reveals that seven popular but risky strategies are often to blame.

Drawing on that extensive research, Carroll, a journalist, and Mui, a fellow at Diamond Management & Technology Consultants, describe seven sirens that lure companies onto the rocks. One is the *synergy mirage* – hoped-for but nonexistent merger synergies. Group disability insurer Unum unwittingly pursued these when it acquired individual disability insurer Provident, assuming the units could cross-sell each other's products. It turns out they had entirely different sales models and customers. *Pseudo-adjacencies* also lead companies astray, as school bus operator Laidlaw learned when it spent billions on a move into ambulance services. The firm expected its logistics expertise to carry over but discovered ambulances were not a transportation business but a highly regulated health care business demanding skills it sorely lacked. *Faulty financial engineering, stubbornly staying the course, bets on the wrong technology*, and *rushing to consolidate* are all dangerous, too, as Conseco, Kodak, Motorola, and Ames can attest. And a *rollup of almost any kind* is a high-wire act in which a slight market downturn is all it takes to finish you off.

If the executives at these companies had taken a closer look at history, they might have avoided billions in losses. But even experienced teams can fall into these traps. The best way to safeguard your company against them is to institute a formal strategy review by a devil's advocate panel not involved in strategy development. Its members must have license to ask tough questions, say the authors, who offer guidelines to help panels focus on facts, test assumptions, and bring to light flaws in the strategy that could lead to costly blunders.

Reprint R0809F

RISK MANAGEMENT

THE RISK REVOLUTION

92 | THE TOOLS The New Arsenal of Risk Management

Kevin Buehler, Andrew Freeman, and Ron Hulme

The global banking system is facing a severe liquidity crisis: In the first half of 2008, major financial institutions wrote off nearly $400 billion, causing banks around the world to initiate emergency measures. Similar crises have occurred within recent memory: Think of S&Ls, the dot-com bust, and Enron. Risk is, quite simply, a fact of corporate life – but because risk-management research has increasingly emphasized mathematical modeling, managers may find it incomprehensible and thus shy away from powerful tools and markets for creating value.

Buehler, Freeman, and Hulme, all with McKinsey, describe the evolution of risk management since the 1970s, show how new markets have changed the landscape in both financial services and the energy sector, and explain what it takes to compete in the current environment. To demonstrate how significant a factor risk can be when incorporated into strategy and organization, they take the case of Goldman Sachs – which, despite its reliance on highly volatile trading revenues, has so far avoided the big write-offs that have afflicted its leading competitors. The authors believe that this is because Goldman takes the antithesis of the typical corporate approach – its culture embraces rather than avoids risk. And, they say, Goldman very efficiently employs all four of the following factors: quantitative professionals, strong oversight, partnership investment, and a clear statement of business principles, with emphasis on preserving the company's reputation.

Staying on the sidelines of risk management may have shielded some companies from crisis, but it has also prevented them from growing as quickly as they might have. In their companion article, "Owning the Right Risks," the authors outline a process that will enable executives in any company to incorporate risk into their strategic decision making.

Reprint R0809G

| RISK MANAGEMENT |

THE RISK REVOLUTION

102 | THE STRATEGY Owning the Right Risks

Kevin Buehler, Andrew Freeman, and Ron Hulme

In the 1970s a revolution occurred in the field of corporate strategy. A boom in mergers and acquisitions launched new professions in M&A banking, M&A law, and strategy consulting, and companies started to focus on owning businesses in which they had a competitive advantage. At the same time, another revolution occurred in how financial services companies understood, bought, and sold risk – described in the authors' companion article in this issue, "The New Arsenal of Risk Management." Now these two revolutions are coming together to trigger a third in the corporate approach to risk management.

Engineering and dynamically managing a company's risk portfolio has become the organizing principle for strategic choice. When companies focus on the risks for which they are naturally advantaged, they can typically support higher debt levels and save on operating costs. McKinsey's Buehler, Freeman, and Hulme describe five steps to help corporate managers adjust to the third revolution: 1) Identify and understand your major risks; 2) decide which risks are natural; 3) determine your capacity and appetite for risk; 4) embed risk in all decisions and processes, including investment, commercial, financial, and operational; and 5) align governance and organization around risk.

TXU is one company that has already successfully adapted. Following the 2002 deregulation of wholesale and retail electricity markets in the U.S. state of Texas, TXU embarked on an ambitious risk-return restructuring program that relied on sophisticated risk-management tools to quantify its risk capacity. The program led to share price increases that created more than $32 billion in value before the company was taken private in the largest leveraged buyout in history.

Reprint R0809H

| SELF-MANAGEMENT |

MANAGING YOURSELF

113 | How to Protect Your Job in a Recession

Janet Banks and Diane Coutu

As the economy softens, corporate downsizing appears almost inevitable. Don't panic yet, though. While layoff decisions might seem beyond your control, there's plenty you can do to make sure you retain your job.

In this article, Banks, a former HR executive at Chase Manhattan and FleetBoston Financial, and Coutu, an HBR senior editor and former affiliate scholar at the Boston Psychoanalytic Society and Institute, describe how to improve your chances of survival. It's mostly a matter of coolheaded planning, they observe. When cuts loom, the first thing to do is *act* like a survivor. Be confident and cheerful. Research shows that congeniality trumps competence when push comes to shove. Look to the future by focusing on customers, for without them, no one will have work. Survivors also tend to be versatile; tight budgets demand managers who can wear several hats, so start demonstrating what other capabilities you can offer. If you're, say, a manager who once worked as a teacher, take on a training role.

Remember to be a good corporate citizen: Participation matters now more than ever. It isn't the time to behave as if work is beneath you or to argue for a new title. When one executive's department was folded under the management of a less-experienced colleague, she swallowed her pride and wholeheartedly supported the new hierarchy. Her superiors noticed her commitment and eventually rewarded her with a prestigious appointment.

It's also important to offer leaders hope and realistic solutions. Energize your colleagues around change, like the VP of learning at a firm undergoing major staff reductions did. He organized a humorous in-house radio show that revived spirits and helped management communicate with employees – and ended up with a promotion.

Reprint R0809J

| GLOBALIZATION |

BIG PICTURE

119 | Where Oil-Rich Nations Are Placing Their Bets

Rawi Abdelal, Ayesha Khan, and Tarun Khanna

The combination of the gigantic American trade deficit and the price of oil at more than $125 per barrel (at press time) has created an attendant pool of financial liquidity among oil exporters in the Gulf. And this era of petrodollar surpluses is markedly different from the last one.

In the 1970s, the member states of the Gulf Cooperation Council (GCC) – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates – outsourced the management of their petrodollars to American and UK bankers. This time around, they have adopted active investment and development strategies: They are investing heavily in large Western organizations as well as in emerging markets in Africa and India. They are spending lavishly at home to establish institutional infrastructures, to create free-trade zones for manufacturing and services, and to build recreational facilities that will attract businesses, skilled knowledge workers, and tourists.

These moves are destined to have long-run effects not just on their local economies but also on regional and international trading, argue Harvard Business School's Abdelal, Khan, and Khanna. In fact, the authors say, the actions of the GCC states are pulling the Gulf closer than it has ever been to the center of the international financial system. In this article, the authors consider how oil exporters' new investment strategies and interests over the next decades will affect the economic landscape in the West, reshape nearby markets in the Middle East, and dramatically reconfigure the GCC home environment itself.

Reprint R0809K

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Why Buy?

PEOPLE'S STATED and actual reasons for purchasing something often differ tremendously. What explains the disconnect? Forget for the moment Ted Levitt's legendary distinction between a product and the problem it solves – and the marketing folly of focusing exclusively on the former. ("People don't want to buy a quarter-inch drill," Levitt would tell his Harvard students. "They want a quarter-inch hole.")

Think instead of how Paco Underhill describes shopping in *Why We Buy:* It's "a method of becoming a newer, perhaps even slightly improved person." But people rarely admit that to a market researcher – or even to themselves. Underhill recommends you stop asking customers about their behavior and start observing it.

You obviously can't do that from your desk. In *Thoughtless Acts?,* Jane Fulton Suri urges business innovators to take more field trips: "The insights that emerge from careful observation of people's behavior, around something as apparently mundane as sorting laundry or buying coffee, uncover all kinds of opportunities that were not previously evident." Start in aisle 7.

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