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Harvard Business Review

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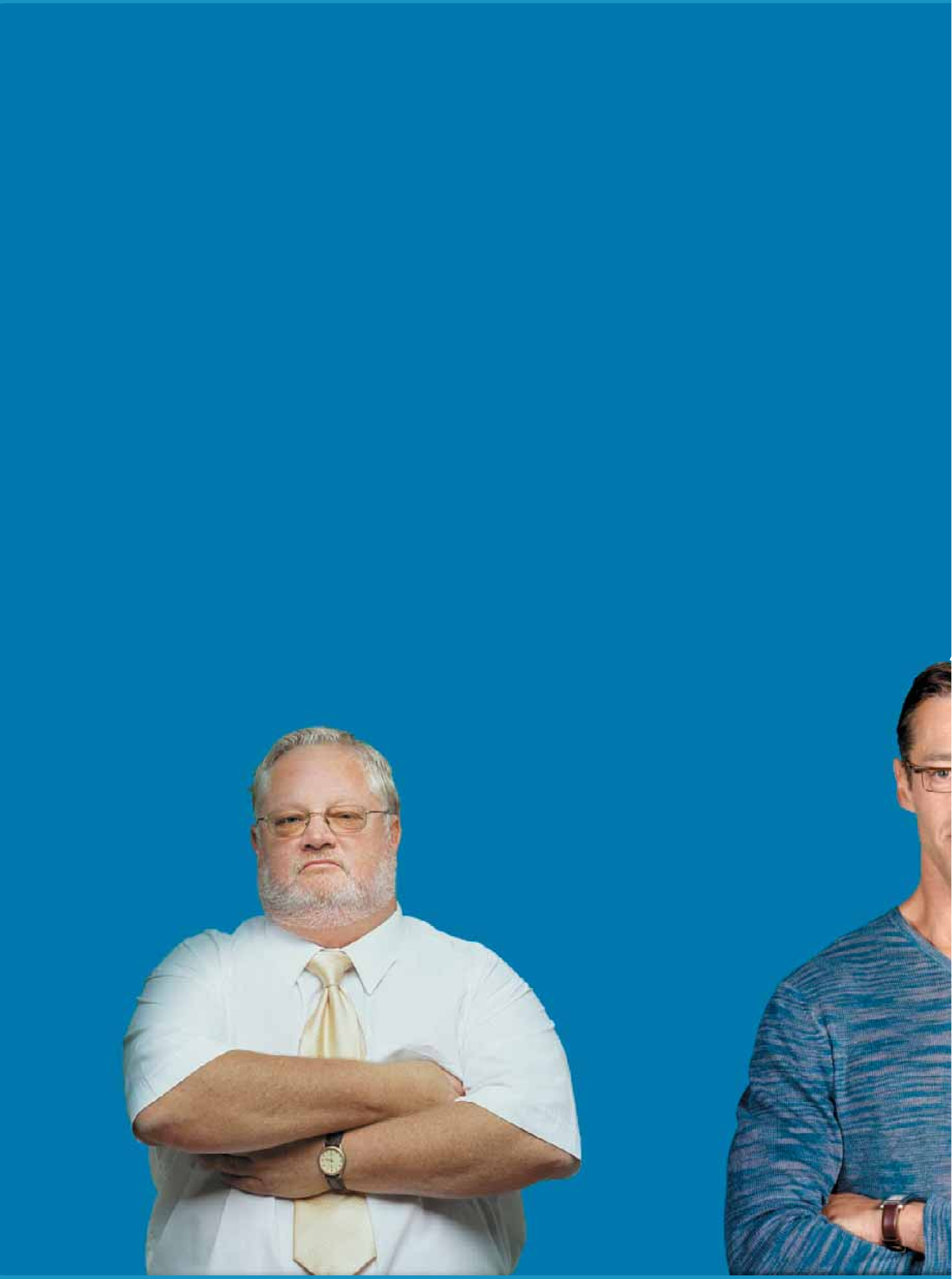


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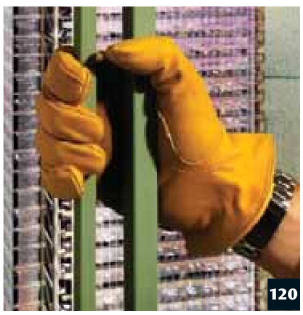

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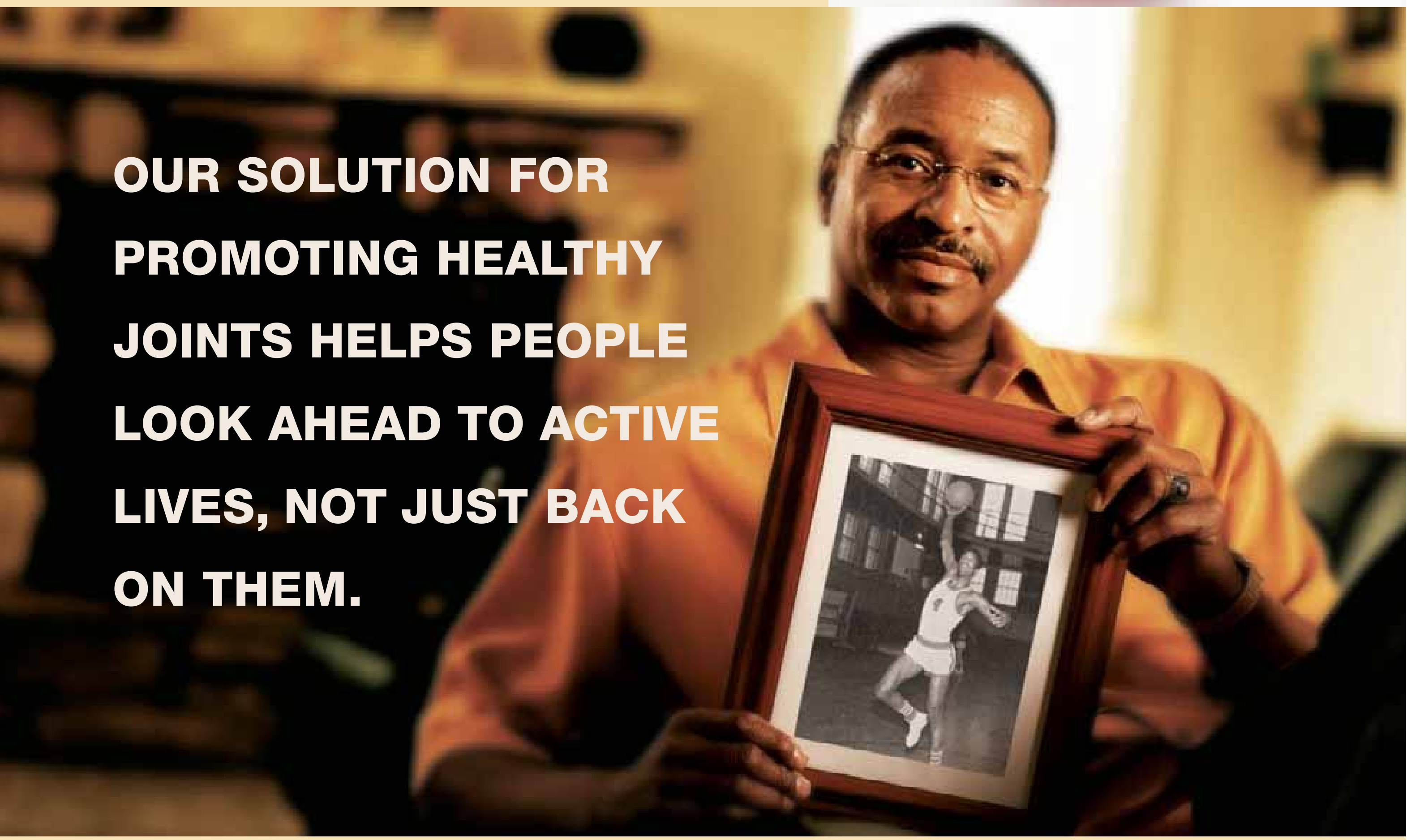

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First Things First

My mother grew up in New Orleans. I lived there one summer, working at the long-since shuttered Pontchartrain Beach Amusement Park. I operated the midway game where customers threw softballs to knock down a pyramid of milk bottles. During breaks, I'd take a Coke and a cheeseburger onto a pier jutting out into the lake. On days off, I'd head into the city, and often found myself having coffee by the milewide Mississippi River or looking over a levee. As Herman Melville said, meditation and water are wedded forever.

Water is the lifeblood of New Orleans. The Mississippi drains the continent from the Appalachians to the Rockies, mid-America's water-borne commerce on its back. Soil from 10 states is suspended in the river's eponymously muddy waters, too, soil that used to settle and silt into the Mississippi Delta. Channels and levees – the demands of commerce – have kept that from happening. The great river's delta annually loses some 25 square miles of marsh and low-lying land, barriers that would have mitigated the storm that drowned New Orleans in its lifeblood in late August. As I write this on September 2, 2005, a chemical facility burns downriver from the French Quarter, patients are dying in hospitals where there is neither food nor electricity, gangs are raping and pillaging. Soldiers are dropping rations for thousands of stranded refugees from helicopters, afraid of being mobbed if they come by land.

Even before the water drains, a couple of lessons are clear. Not for the first time, emergency-management services at all levels of government have shown themselves to be miserably unprepared and inadequately managed. Not for the first time, governments and corporations have shown themselves to be penny-wise and pound-foolish, having skimped on funds that would have strengthened levees, improved drainage, and preserved and restored wetlands. The city, when it is finally emptied, will be shut for months.

The nation and the world are learning again about interdependence. Goods float down the Mississippi; in return, rivers of oil and gas flow north and east, contained in pipelines the way the river is contained in levees. Gasoline prices are soaring: An airline or two might be grounded. Northeastern homeowners brace for a costly winter. One lesson of Katrina, like any event of this magnitude, is that organizations and systems manage interdependencies badly. In Washington and Baton Rouge, there will be mudslinging, finger-pointing, and buck-passing.

There's time for that. The people of New Orleans must come first. My mother's mother – whose grave is in the city – said that a person's priorities should go like this: "Your health first, your reputation second, and everything else after that."

• • •

Before Katrina, I had written another editor's letter for this issue. In it, I mostly discussed "Growing Talent as if Your Business Depended on It," a very important article by Jeffrey Cohn, Rakesh Khurana, and Laura Reeves. CEOs always list leadership development among their top five priorities yet consistently say they don't do it well. Indeed, you can count on the fingers of one hand the companies that do a great job growing executive talent. Partly this is because there's little rigorous academic work about leadership development. (Business schools don't study it – they sell it.) Partly it's because companies act penny-wise and pound-foolish about this, too, underfunding development, then discovering that there's not a leader around when they need one.

Leadership pipelines would be fuller if women had more opportunity. For decades HBR has shown how corporations can change practices that deprive them of women's talent. But some obstacles result from national (rather than corporate) policies, laws, and customs. We have posted a groundbreaking report on this subject on our Web site, www.hbr.org. "Women's Empowerment: Measuring the Global Gender Gap," prepared by our partners at the World Economic Forum, is a systematic attempt to measure the economic status of women worldwide. It is our hope that you, HBR's readers, will use this document as a map of unrealized human potential.

Thomas A. Stewart

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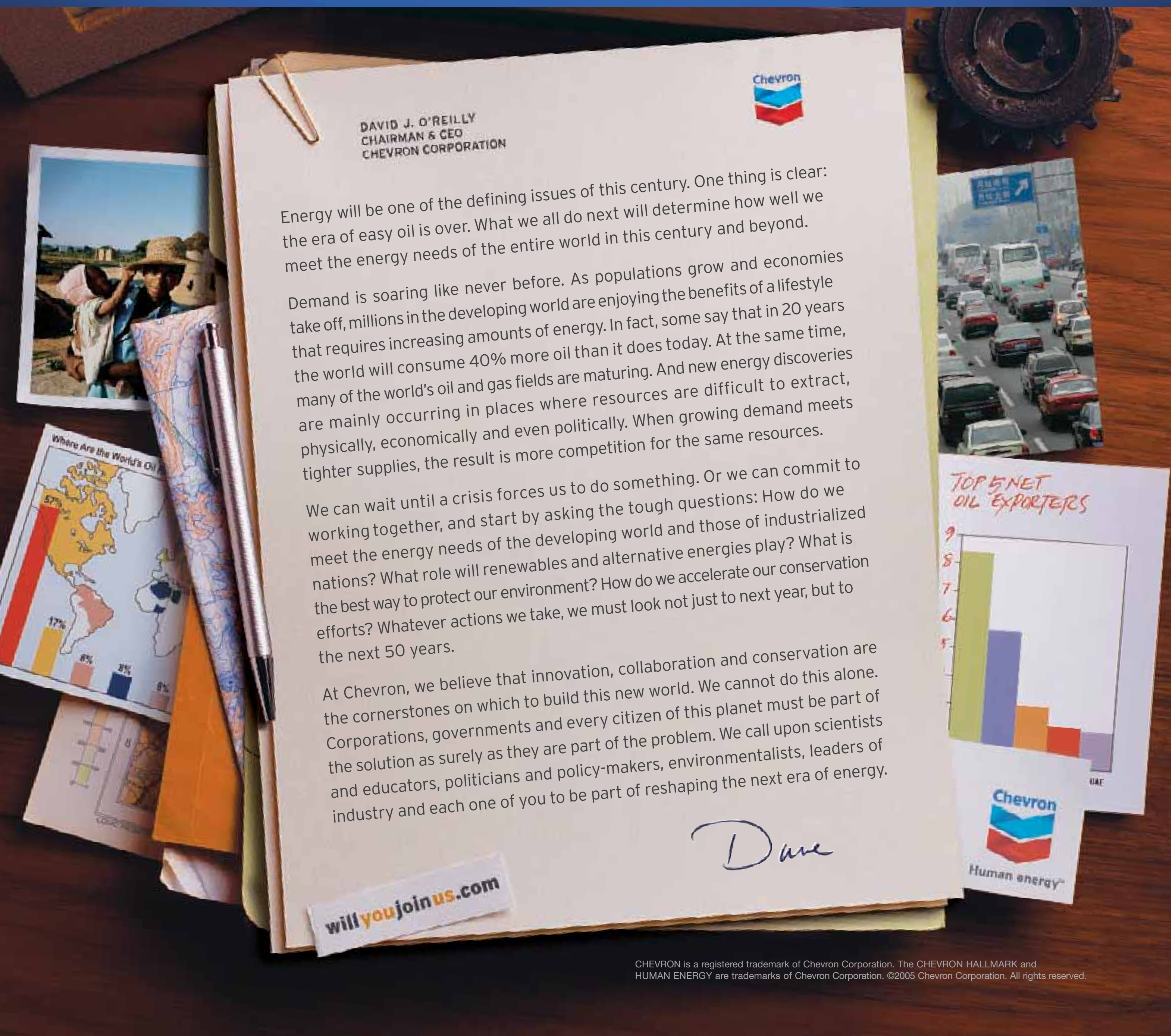

DAVID J. O'REILLY
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Energy will be one of the defining issues of this century. One thing is clear: the era of easy oil is over. What we all do next will determine how well we meet the energy needs of the entire world in this century and beyond.

Demand is soaring like never before. As populations grow and economies take off, millions in the developing world are enjoying the benefits of a lifestyle that requires increasing amounts of energy. In fact, some say that in 20 years the world will consume 40% more oil than it does today. At the same time, many of the world's oil and gas fields are maturing. And new energy discoveries are mainly occurring in places where resources are difficult to extract, physically, economically and even politically. When growing demand meets tighter supplies, the result is more competition for the same resources.

We can wait until a crisis forces us to do something. Or we can commit to working together, and start by asking the tough questions: How do we meet the energy needs of the developing world and those of industrialized nations? What role will renewables and alternative energies play? What is the best way to protect our environment? How do we accelerate our conservation efforts? Whatever actions we take, we must look not just to next year, but to the next 50 years.

At Chevron, we believe that innovation, collaboration and conservation are the cornerstones on which to build this new world. We cannot do this alone. Corporations, governments and every citizen of this planet must be part of the solution as surely as they are part of the problem. We call upon scientists and educators, politicians and policy-makers, environmentalists, leaders of industry and each one of you to be part of reshaping the next era of energy.

Dave

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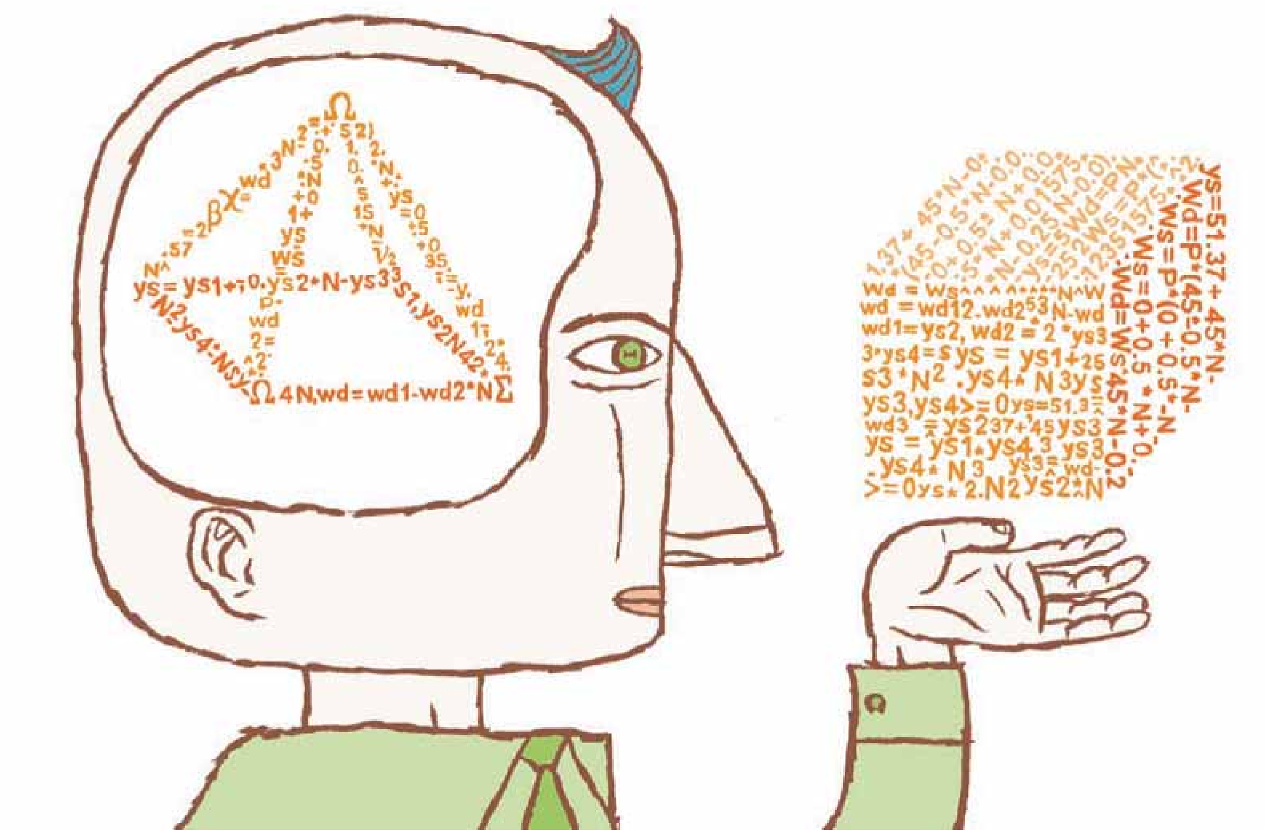

GEORGE BATES

GRIST

Beware of Economists Bearing Greek Symbols

by EMANUEL DERMAN

"In physics, it takes three laws to explain 99% of the data; in finance, it takes more than 99 laws to explain about 3%." So quipped MIT finance professor Andrew Lo at a dinner I once attended. Economists, he added, consequently suffer from physics envy.

Now, I was trained as a theoretical physicist in the 1960s and 1970s, the glory years of elementary particle physics. Our heroes were Einstein, Dirac, Gell-Mann, and Feynman – Nobelists all, visionaries who conjured up new mental worlds and the equations that went with them. And these new mental worlds, miraculously, not only corresponded to the physical world we inhabit, but also accurately predicted the existence of weird and previously unobserved particles.

How could imagination and mathematics be so powerful in apprehending the world outside our heads?

Years later, I went to work at Goldman Sachs in the field of quantitative finance, the branch of economics concerned with calculating the fair value of securities. At first I was charmed by the resemblance between the papers I now studied and the physics papers I used to read and write. Then, as I read further, I discovered that economists love formal mathematics much more than physicists do. Many economic journals encourage – or even demand – a faux-rigorous style with multitudes of axioms and lemmas in numbers that tend to be inversely proportional to their efficacy in the real world.

Why are economists trained so formally? It makes sense to axiomatize a discipline when the axioms are true (or almost so) and have strong predictive power. That's the case for Euclidean geometry, for example, as well as Maxwell's electromagnetic theory, where many valid, useful, and accurate predictions follow from applying the laws of deduction to a few initial assumptions.

But economists seem to have embraced formality and physics envy without the corresponding benefits of accuracy or predictability. In physics, Maxwell's theory and quantum mechanics allow you to predict the way an electron spins about its own axis inside a hydrogen atom to an accuracy of 12 decimal places. Something that accurate isn't just a model – it's a law. In economics, by contrast, there are no laws at all, only models, and you're immensely lucky if you can predict up from down.

When people build models to value securities, they make all sorts of imaginative assumptions that are then formulated mathematically. For example, quantitative strategists at investment banks or hedge funds value currently fashionable collateralized default obligations (which provide default insurance on baskets of large numbers of bonds) by assuming that each bond-issuing company is represented by an imaginary variable. That variable evolves randomly through time – like smoke diffusing across a room – until it crosses an imaginary default boundary in the future, at which point the company will default on all of its debt. It's an elegant mental construct and not an unreasonable way to model the random chance of a company doing badly enough to default. But it's not literally true. It's still a model, a toy, a limited picture – despite the fancy mathematics. No wonder the picture often breaks down and causes havoc, as happened in credit markets last May.

Clearly, then, when someone shows you an economic or financial model that involves mathematics, you should understand that, despite the confident appearance of the equations, what lies beneath is a substrate of great simplification and – sometimes – great and wonderful imagination. That's not a bad thing – financial markets are all about imagination. But never forget that even the best financial model can never be truly valid because, unlike the physical world, the mental world of securities and economics is much less amenable to the power of mathematics.

EMANUEL DERMAN *(emanuel.derman@mac.com) is the director of the financial engineering program at Columbia University and the head of risk at Prisma Capital Partners, a fund of funds. He is the author of* My Life as a Quant: Reflections on Physics and Finance *(Wiley, 2004).*

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PRODUCT DEVELOPMENT

Every Product's a Platform

by JOHN SVIOKLA AND ANTHONY J. PAONI

When you think "platform," you probably think "software" – with Microsoft Windows dominating the pack. But *any* product, not just software, can become a platform. What's required is imagination. Consider how S.C. Johnson & Son, the multibillion-dollar consumer products company, managed to "platform" its way from floors to shaving cream to candles – and much, much more.

Samuel Curtis Johnson started the company in 1886 when he purchased

BUSINESS HISTORY

"Bureaucracy" Becomes a Four-Letter Word

by WILLIAM H. STARBUCK

There's a long-standing tension in organizations between innovation and bureaucracy. Excessive layers of management and byzantine processes often shoulder the blame when a promising idea fails to make it to market or a nimble start-up thwarts a mature competitor.

That tension can be traced back at least 340 years, to an inadvertent collaboration between two government officials in France. In 1665, with the French economy in turmoil, King Louis XIV appointed Jean-Baptiste Colbert as his comptroller general of finance. Colbert prosecuted corrupt officials and reorganized commerce and industry according to the economic principles known as mercantilism. To assure the populace that the government would act fairly in monetary disputes, he demanded that officials abide by certain rules and apply them uniformly to everyone.

Then, in 1751, Jean Claude Marie Vincent de Gournay became France's administrator of commerce. Gournay was outraged by what Colbert had put in place and railed against the multitude of government regulations he believed were suppressing business activity. To describe a government run by insensitive creators and enforcers of rules, who neither understood nor cared about the consequences of their actions, he coined the term *bureaucratie.* Translation: "government by desks."

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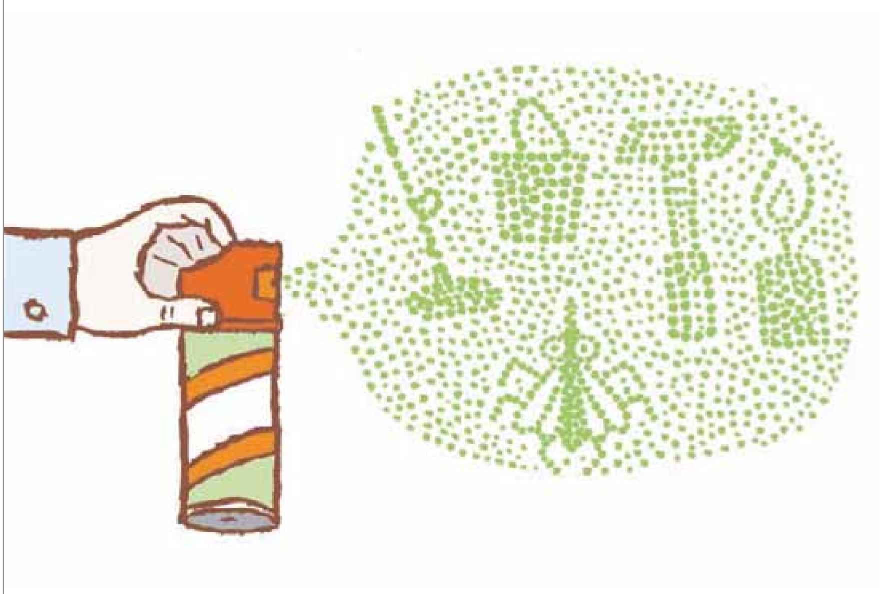

the parquet-flooring division of the Racine Hardware Company. After laying floors, Johnson would finish the wood with a special wax of his own creation, which became very popular with customers. Their repeated requests to buy extra wax led Johnson to develop Johnson's Prepared Wax and move into consumer products.

Another product – a paste blended with wax that created a spectacular sheen – also looked very promising, but there seemed to be no convenient way for customers to use it. Then the company discovered aerosol can technology (first patented by Erik Rotheim of Norway in 1927), put the wax and paste mix into pressurized cans, and launched Pledge – the first sprayable furniture polish for home use.

The company soon realized it could fill the aerosol cans with anything sprayable: Scented liquid became Glade, an air freshener now available in more than a dozen fragrances; DEET was combined with other ingredients to create the insect repellent Off!, which is still the category leader. Later, company scientists working on shaving technologies discovered that gel was a better lubricant for skin than traditional shaving cream. But how to dispense gel from an aerosol can? They solved this dilemma by introducing an expandable bladder in the bottom of the can; when the company launched Edge, it found a whole new market.

Meanwhile, Off! led to plug-in insect repellents and, through another route, to DEET-infused candles. Lanterns based on the candle technology now use Off! cartridges as well. In short, S.C. Johnson advanced from indoor parquet floors to outdoor insect-repelling lanterns by thinking of aerosol technology as a platform rather than simply as a way to put wax on wood.

Exploiting platform opportunities, of course, isn't just a matter of being creative. A company should be smart about intellectual property (IP) protection as well. Consider Nestlé's experience. The company was one of the first to introduce a coffee system in the United States that used little coffee packs (known as coffee singles) to brew one cup at a time. Kraft Foods, however, was able to seize 40% of the domestic market for these packs because Nestlé had no IP protection for them.

And Kraft didn't stop there. Realizing the coffee system's platform potential, the company created a competitive system called Tassimo – now sold in Europe and coming soon to the U.S. – that uses cartridges to create other hot drinks on demand besides coffee. Unlike Nestlé, Kraft has a patent on the cartridges, so it can control more of the margin generated from this creative platform. Ultimately, Kraft realized that its Tassimo platform could do even more than make hot drinks – it could collect market data. By enabling Tassimo to track what's being brewed and when, and (with customers' permission) to transmit the data in real time over a cell phone connection, Kraft has essentially turned the coffeemaker into a proprietary consumer panel that monitors product consumption.

Even automobiles have platform potential: If every car had wireless data transmission capability and used today's peer-to-peer technology, every traffic jam would be a high-speed data network waiting to be born. Thus, cars could become the next platform for wireless Internet connectivity. Unlike cell phones, cars have power to spare and could bring along their own bandwidths to sustain communications on the road – or from your driveway.

Ignoring your products' platform potential is risky. Not only is it difficult to create one unique product after another (most fail, in fact), but the speed of product imitation is awe inspiring. Even with IP protection, the odds are stacked against long-term value creation for one-shot products. Just think: If a floor wax can give rise to insect-repelling candles, what can your products become?

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INNOVATION

Masters of the Multicultural

by FRANS JOHANSSON

Chief diversity officers (CDOs) proliferated in the 1990s, as business responded to litigation and public pressure to show a more heterogeneous face. But in a few forward-thinking companies today, the diversity officer has assumed a new role:

forethought

overseeing innovation efforts and generating revenues.

Business leaders know that heterogeneous workforces are rich seedbeds for ideas. Yet companies rarely tap employees for insights and experiences specific to their cultures. Furthermore, barriers of language, geography, and association may prevent diverse employees from coming together on innovation efforts. CDOs are probably more familiar with the cultural breadth and variety of their companies' talent than anyone, and consequently they are in an excellent position to bring together different groups to produce innovation.

For example, Amy George, the vice president of global diversity and inclusion at PepsiCo, works closely with several affinity groups – associations of employees united by gender, race, ethnicity, or other traits – within the company. She can cite several examples in which employees from those communities generated ideas for new products and market strategies. For instance, the Hispanic employee affinity group at Frito-Lay, a division of PepsiCo, provided input for a line of guacamole-flavored potato chips, which became a $100 million product.

"The main argument for having a diverse workforce is the increase in innovation," says Rosalyn Taylor O'Neale, the former CDO of MTV Networks. "But new ideas don't just happen. You have to find the connections." O'Neale launched a companywide program to do just that, with enthusiastic support from Tom Freston, MTV's former CEO and the current copresident of Viacom. One cross-cultural group, for example, discovered marketing opportunities in the congruence of North American country music and Latin American music, which use many of the same instruments, feature singers with similar vocal styles, and – in the U.S. Sunbelt – appeal to much the same audience. Similar groups have influenced the multicultural content of Nickelodeon's children's programming. "Those teams are diverse by design to generate innovation," says Freston. "The probability that you will get a good, original, innovative idea with that type of chemistry is simply much higher."

O'Neale was successful, in part, because she is knowledgeable about marketing and innovation. Most CDOs will need considerable training if they are to assume the innovation mantle – or companies will have to seek CDOs with richer experience. One smart move is to release CDOs from the confines of human resources and position them to work closely with the heads of product development, business development, marketing, and sales. This allows the CDO to more easily spot innovation opportunities throughout the company. That change is already happening. "Increasingly, chief diversity officers report to the CEO, outside of HR," says Edie Fraser, founder and president of Diversity Best Practices, an organization that tracks diversity issues.

At Russell Corporation, an Atlanta-based company that specializes in athletic clothing, the human resources function handles traditional diversity matters such as affirmative action, recruiting, and legal questions. Meanwhile, CDO Kevin Clayton is busy turning a separate diversity department into a profit center. For example, Clayton's group – which is directly accountable for profits and sales – discovered that a large number of Russell employees had graduated from historically black colleges and universities. The group then used those graduates' input to create products for the black university market, resulting in an $8 million-to-$10 million deal. (Since then, the CDO has created several additional development groups that combine employees of different ethnicities and religions – and he is expecting to double revenues next year.)

CDOs may have been hired to limit liabilities in the past. But now, deployed correctly, they can also expand horizons. The business case for diversity is finally becoming clear: With dedicated, informed leadership, diversity becomes the tinder to ignite innovation.

FRANS JOHANSSON *(johansson@themedicieffect.com) is the author of* The Medici Effect: Breakthrough Insights at the Intersection of Ideas, Concepts, and Cultures *(Harvard Business School Press, 2004).*

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ENTREPRENEURSHIP

Hang On to Those Founders *by* MARTIN L. MARTENS

Company founders are like parents – essential to their youthful progeny but treated as superfluous once the offspring mature. To inspire confidence among investors, companies preparing for IPOs often replace their CEO founders with executives experienced at running public firms. That strategy is sound for the short term: On average, companies with professional management boast higher IPO valuations than do entrepreneur-led firms. Research suggests, however, that not only do founder-led companies regain their luster after their IPOs, but, over time, their valuations surpass those of professionally managed businesses.

Concordia University graduate student Jean-Philippe Arcand and I, aided by assistant professor Thomas J. Walker, studied the short-term and midterm performances of 435 North American high-tech firms that issued IPOs between June 1996 and December 2000. We discovered that founder-led firms received an average valuation of $67 million, while companies

that installed professional leadership and moved the founder to another spot on the top management team averaged $72 million.

Three years later, however, the numbers told a different story. Stocks of the founder-led firms had significantly better returns over that time and were more likely to remain listed than stocks of professionally led firms. Founder-led companies had a market-adjusted return of 12% over the course of three years and a survival rate of 73%, compared with a return of –26% and a survival rate of 60% for firms that hired a new CEO and moved the founder to a different position on the top management team. (Companies whose founders left altogether performed somewhat better than those in which founders remained on the management team, although not as well as companies whose founders stayed at the helm.)

Those findings, which hold true for smaller samples of firms in other industries as well, suggest some interesting possibilities. First, the founder – though unproven, in the minds of investors – may in many cases be best qualified to run his or her own firm. Second, the introduction of a professional CEO may create troubling rifts between the new management and the old guard and disrupt a culture established during the company's start-up years. Interviews we conducted with executives bear out those hypotheses.

Despite these results, the practice of moving founders down a rung has grown. Between 1996 and 1998, just 6% of high-tech firms that replaced their founder-CEOs gave those former leaders other roles on the top management team or on the board; in 1999 and 2000, 20% did so. For companies intent on such a strategy, the lesson is to act quickly. Those that made the switch early generally fared better: Just look at Google and Yahoo.

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CONSUMER BEHAVIOR

The Hazards of Hounding *by* PAUL M. DHOLAKIA

Companies aggressively offer discounts, introductory coupons, and other incentives to lure new customers – and, often, those prospects oblige by making an initial purchase. But my research in the financial services, fast food, and automotive sales and service industries shows how these tactics can backfire.

In one study, involving 300 new customers of a bank, 71% of respondents felt that the bank had induced them to join. I call these members the bank's *firm-determined* customers. By contrast, only 29% were *self-determined,* believing that they had joined the bank on their own initiative. A year later, the self-determined customers were twice as profitable as the firm-determined customers – and were 80% less likely to have defected from the bank. Similarly, in another study, I found that self-determined customers of a delicatessen were more loyal than firm-determined customers and that they gave the store a greater share of their fast-food wallets.

Aggressive, incentive-driven acquisition marketing may attract new customers, but often those customers are myopically focused on the offer instead of interested in cultivating a long-term relationship with the company. Worse, this high-pressure approach may turn off the loyal self-determined customers whom companies want to keep. In a field experiment in an automotive sales-and-services firm, I found that self-determined customers who were sent reminder coupons to encourage repeat purchases came back less often, spent less on each visit, and were more likely to defect during the next three years than customers who were not given any incentives to return.

So how do you market to desirable customers who are hostile to the usual aggressive incentives? Try offering incentives that reinforce their decision to patronize your company, such as a package of benefits that reward the continuing relationship. One bank, for example, offered rewards such as better interest rates, reduced or eliminated fees for various services, and free investment advice for maintaining high balances. A year later, the profit from the bank's self-determined

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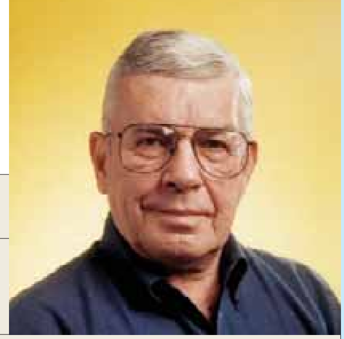
Conversation

ROBERT MORRIS ON BUSINESS BOOKS

Been There, Read That



If you buy management books online, you have probably encountered Robert Morris, a Texas-based management consultant with a background in business, education, and government. Morris is an Amazon Top 10 reviewer (so voted by customers who have found his comments helpful) and one of very few among that august company who focus almost exclusively on business books. Morris estimates that he has read more than 1,500 management tomes and reviewed more than 900 for Amazon and other Web sites. (He says that Peter Drucker once complimented his reviews for not giving away the plot.) And while such voracious consumption helps Morris in his business, it is chiefly a labor of love. "I just finished *Juice* and *Managing for the Long Run,*" the critic recently enthused. "Who wouldn't get excited about books like those?"

How do you decide which books are worth your time?
The best management writers ask an important question and answer it with solid research. Jim Collins asks, "How can a good company become a great company?" Jason Jennings asks, "What traits do America's best-performing companies share?" When I pick up a book, I expect the introduction to tell me what question the author intends to answer. Then I look at what is emphasized – usually in boldface or italics – to see whether the author stays focused on that question. I also appreciate it when the author explains how the book is organized, because that affects how easy it is to assimilate the information. And I want to know which companies were studied.

You read so much; isn't a lot of the material redundant?
Yes, but I am constantly amassing pieces of a larger picture. Jack Welch, for example, has explained why he admires small businesses: They communicate better internally, they move faster, they are less bureaucratic, and the leaders have less camouflage – all of which rings true. Then you read in Michael Gerber's *E-Myth Mastery* that out of 1 million U.S. small businesses started in 2005, more than 80% will be gone within five years and 96% in ten. Together, those thinkers give me two pieces of the puzzle. I better understand the advantages small businesses have. And I have learned that few know how to achieve – and then *sustain* – those advantages.

As many management ideas have come to naught, have you become more cynical or cautious?
I am more cautious about extravagant claims, not so much because the theories are problematic but because the content rarely supports them. Also, I keep in mind that the biggest ideas are often still wet behind the ears when they debut. Years after publishing *Reengineering the Corporation,* Michael Hammer is still correcting misunderstandings and clarifying key points. Many other important ideas such as EVA, the total learning organization, the Balanced Scorecard, customer evangelism, and experiential marketing have spawned cottage industries to refine, improve, and fill in the gaps of the original idea.

Any tips for getting the most from a business book?
My favorite strategy is to convert the table of contents into a study guide. That is, look at the chapter titles: What questions do they address? Then make sure you get the answers. So, for example, I created a study guide for *Seeing What's Next* by Clayton Christensen, Scott Anthony, and Erik Roth. And as I read, I asked myself, "What are the signals of change?" "How do you size up competitors?" and "Which nonmarket forces affect innovation?" Such questions guide me to the answers.

What are your favorite management books?
Some books have hit me like a revelation: for example, Jeffrey Pfeffer and Robert Sutton's analysis of the "knowing-doing gap," Malcolm Gladwell on intuitive decision-making, and Emanuel Rosen on "buzz." There are also classics I reread every year: Joel Mokyr's *The Lever of Riches,* Thomas Kuhn's *The Structure of Scientific Revolutions,* Peter Drucker's *On the Profession of Management,* Eric Drexler's *Engines of Creation,* and Albert Borgmann's *Holding On to Reality.* I also strongly recommend that leaders read *The Iliad* and *The Odyssey, Antigone,* the four Gospels and St. Paul's letters to the Corinthians, *Julius Caesar, The Autobiography of Benjamin Franklin, Walden, To Kill a Mockingbird, Death of a Salesman, The Crucible,* and *The Heart Aroused.* Books such as these really do change lives!

– LEIGH BUCHANAN

Reprint F0510G


Extraordinary insights often come from uncommon perspectives.
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customers had grown by 25% and the defection rate had dropped by more than 50%. Interestingly, comparable firm-determined customers did not react as favorably to these rewards, showing no increase in profitability and little reduction in defection rates. (To market to self-determined customers, of course, you have to find them. One way is to simply ask customers why they started patronizing the company in the first place. Another is to identify those who paid full price for products at the outset, instead of reacting to promotional offers.)

To attract new self-determined customers, strengthen your brand-building programs, such as image and informational advertising, and avoid aggressive recruiting. Although the impact of brand programs is relatively hard to measure, the customers they attract are, in the long run, the ones you want most.

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Reprint F0510F

GROWTH

Room at the Top Line

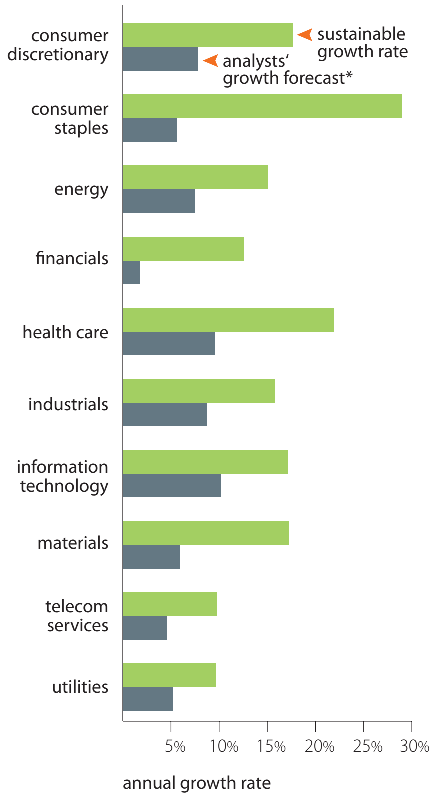
by REKHA SAMPATH AND AJIT KAMBIL

Companies are increasingly focused on the top line, but do they have the financial capacity to grow? The answer is yes – and more than you might think. Our analysis of an important forward-looking metric – sustainable growth rates – across U.S. industries found that the 2004 rates for companies in the S&P 500 exceeded analysts' average three-year revenue growth forecasts (see the exhibit "Holding Back on Growth"). This reality has powerful implications for the managements and shareholders of many of the largest U.S. firms: When a company's sustainable growth rate exceeds its sales growth rate, the company is not fully exploiting its financial resources to generate shareholder value. In fact, our analysis suggests that there is excess liquidity in the S&P 500.

How, then, can you guard against suboptimal growth, while at the same time maintaining a strong financial position?

Holding Back on Growth

Across the S&P 500, companies' 2004 sustainable growth rates exceeded analysts' growth forecasts.



*Consensus analyst average three-year annual growth rate, 2004–2007, as of July 12, 2005

Source: Company reports, Applied Finance Group (AFG) data

The sustainable growth rate, or SGR, is the maximum pace at which a company can grow revenue without depleting its financial resources. SGR is calculated by multiplying return on equity (using beginning-of-period equity) by the company's earnings retention rate (1 minus dividend payout ratio). This metric represents the growth possible when a company reinvests retained earnings at existing levels of operating performance (profitability and asset efficiency), assuming the current capital structure and dividend policy are maintained over the evaluation period.

First, determine whether growth opportunities are indeed available in the industry. If so, invest in the capital equipment and capacity to capture them. If not, consider diversification through new investments in product development or synergistic mergers and acquisitions to buy growth. If neither approach is attractive, consider returning excess cash to shareholders through dividends or share repurchases. This will bring the sustainable and actual rates more into line.

A simple analysis of your sustainable growth rate can allow management and shareholders to benchmark company performance against its potential and lead to better allocation of resources. It is encouraging that, as the U.S. emerges from its latest downturn, many of the country's largest companies have room to grow.

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Reprint F0510H

MARKETING

Talk About Brand Strategy

by NATALIE MIZIK AND ROBERT JACOBSON

A distinctive brand is good for business, of course. But you'd be surprised how important it is to a firm's overall performance. We studied how customer perceptions of brand differentiation related to stock price over the course of 11 years in 275 "monobrand" companies such as AT&T, Krispy Kreme Doughnuts, and Reebok. (Customer brand-perceptions data came from Y&R's Brand Asset Valuator survey.)

We divided the firms into two groups for each year: The first comprised those whose brands, customers felt, had become less differentiated. The second included those whose brands had become more differentiated. We then looked at differences between the companies' annual risk-adjusted stock returns. Curiously, we saw no effect of changes in brand differentiation on stock returns in the years the changes occurred, but we did see a pronounced delayed effect: One year later, firms whose brands had become more distinct outperformed those whose brands had become less differentiated. Specifically, the average next-year risk-adjusted stock return for firms with increased differentiation was 4.8%, while the average for those with decreased differentiation was –4.3%.

That brand enhancements improve stock price is not surprising. But the lag

continued on page 26

we identified has important implications for companies. In simple terms, while individual consumers perceive differentiation directly and react in real time (buying more Coke, say, as marketing increases differentiation), financial markets, it appears, don't respond until they see the impact on earnings later on. The markets don't seem to anticipate the future impact of improved differentiation – or perhaps they don't recognize the change in differentiation in the first place.

Though managers often think their voluntary disclosures have little impact, it's been shown empirically that disclosures, ranging from new product announcements to explanations of financial results, affect financial-market outcomes such as share price, trading volume, and bid-ask spreads. If companies are to reap the full and immediate benefits of brand differentiation, managers need to do a better job of communicating their brand strategy (and its intangible outcomes) to the financial community.

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Reprint F0510J

SUCCESSION

The Hardest Hire

by ANNE LIM O'BRIEN

What could be more difficult than finding a new CEO? Many companies say it's finding someone who's willing to sign up for the number two job: COO.

The problem often lies with a firm's uncertainty about whether it's looking for a "pure" COO or for a successor to the CEO. The board should be clear at the outset about which role it is seeking to fill and make that goal clear to candidates; there should be no vague, open-ended promises of succession to potential hires unless succession is the goal. Harbor no illusions that hiring a capable COO will solve your succession planning if that's not what you're setting out to do.

Many companies, especially large conglomerates, still employ pure COOs with real power and easily attract candidates who welcome the opportunity for professional growth that a big company affords. These hires are relatively easy.

Surprisingly, it is the possibility of CEO succession that makes finding the right COO more difficult. In that case, the company wants a candidate who is fit to be CEO but who can partner effectively with the current CEO. Meanwhile, the candidate needs to be satisfied about potential transition plans, timing, likelihood of the succession, and the performance expectations that might determine whether the succession takes place. If the company is reluctant to commit to a timetable, the candidate may prefer the safety of a present position to the risk of an uncertain promise.

Additionally, the company must compete for talent not only with other firms searching for COOs but also with companies searching for CEOs. As the number of CEO opportunities rises, the COO talent pool shrinks. And potential COO candidates who have the ability to be a CEO from day one often prefer to wait until that day comes. Despite these challenges, there are some things you can do to increase the odds of a successful search for a COO who can eventually succeed the CEO:

Create the position, if necessary. Many companies have phased out the COO position, parceling out corporate responsibilities to the CFO and operating responsibilities to division heads. To meet the demands of Sarbanes-Oxley for greater accountability, they have also shortened the CEO's line of direct responsibility by eliminating the COO slot. In those organizations, when a CEO intends to retire and there is neither a current COO nor a potential successor inside the company, the board can create an interim COO role and fill it with an outsider who could eventually assume the top job.

Expand the talent pool. Look outside your industry for the "best athlete." Just as the top college lacrosse teams often recruit outstanding high school football players with the expectation that they can learn an unfamiliar sport quickly and excel, you can look far afield for the best executive. Make it clear that you will accommodate the candidate's need to learn the industry and to build trust and respect inside the organization prior to succession.

Reduce the uncertainty of succession. Establish a clear timetable. If a highly desirable candidate requires further assurance, you might consider guaranteeing that the company will incur heavy obligations if succession does not occur by a certain date, assuming satisfactory performance by the candidate. Such risk-reducing arrangements make it easier for the candidate to say yes while leaving the company an out if the candidate does not perform well.

Involve the board. The board's involvement signals to the candidate that the company means business because the search and hiring process takes place in the broad context of corporate governance, not merely as an item on the CEO's agenda. The candidate feels wanted by the entire company.

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Reprint F0510K

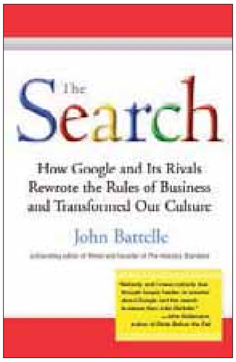
Reviews

The Search

How Google and Its Rivals Rewrote the Rules of Business and Transformed Our Culture

John Battelle
(Portfolio, 2005)

According to Deloitte & Touche, Google's revenues increased 400,000% in its first five years of business. A number like that can be only partially explained by the entrepreneurial prowess of Sergey Brin and Larry Page, the former Stanford graduate students who are Google's still-youthful founders. So *The Search* sensibly concentrates less on personalities than on the ingenious and rapidly evolving technology that has rendered the Internet usable by a broad public and that allows companies at last to determine whether their marketing expenditures have produced results.



In briefly recounting the history of search engines, Battelle – a cofounder of *Wired* magazine – describes a shift from valuing the number of links *from* a given site (the model for Alta Vista, Excite, and others) to valuing the number of links *to* a given site (the basis for Google's rankings). The author perceptively notes that Google's system is essentially the same as that of academia. The more frequently a Web site is "cited" (linked to), the more influential it becomes (the higher it rises in the rankings) and, consequently, the more likely it is to be found and cited again. The scholar's perspective is perhaps one explanation for the founders' ambivalence about commerce. Until 2001, Google hadn't figured out a way to make money, and it never seriously considered banner ads or rankings based solely on fees paid by advertisers. The company now gets paid when a visitor clicks on an advertiser's link appearing on Google's site or on another site where Google has placed the link.

Although *The Search* does not fail to relate the oft-told tale of Google's IPO, readers are likely to find some of the broader implications of the business more interesting. For example, Battelle dutifully takes on the threats to privacy posed by an indelible record of users' clickstreams. But to this often effusive apostle of technology, anything that brings us closer to what he styles a "perfect search" has destiny on its side. Someday, he prophesies, every fragment of text, image, musical composition, product, and service will be tagged, incorporated into the Web, and rendered findable by (probably) Google's powerful technology. As the online world comes to resemble a warehouse or department store, Google becomes a fearsome challenger to Amazon and eBay, wielding the power of life and death over the enterprises it chooses to acknowledge or ignore.

Such grandiose arguments are also the most stimulating parts of the book. *The Search* – like its subject – is a pure product of Silicon Valley culture: by turns wonky, earnest, and giddily utopian.

– BEN GERSON

forethought

The Paradox of Excellence: How Great Performance Can Kill Your Business

David Mosby and Michael Weissman
(Jossey-Bass, 2005)

When a company that provides consistently stellar service stumbles, that error is, to quote Raymond Chandler, "as inconspicuous as a tarantula on a slice of angel food." Customers who have taken perfection for granted are disproportionately angry over flaws and quick to demand compensation. In this entertaining tale set in a fictional logistics business, the authors explain how companies can simultaneously exceed expectations and keep them in check by continually reminding customers of the value they provide.

The Ape in the Corner Office: Understanding the Workplace Beast in All of Us

Richard Conniff
(Crown Business, 2005)

Alpha males sometimes justify their aggressiveness by pointing out that their ancestors *actually were* 800-pound gorillas. But gorillas and the rest of our hairy brethren are far better behaved than most of us think, reports Conniff. Drawing on a wide range of research, the journalist identifies flaws in common analogies between corporate ruthlessness and the animal kingdom. For example, animals commonly practice altruism and reconciliation. And high levels of testosterone are associated with socially confident males who don't need aggression to assert their leadership.

Loyalty Myths: Hyped Strategies That Will Put You Out of Business – and Proven Tactics That Really Work

Timothy L. Keiningham, Terry G. Vavra, Lerzan Aksoy, and Henri Wallard
(Wiley, 2005)

Fans feel loyalty to their teams. Dogs feel loyalty to their owners. But what customers feel toward companies is much less profound, the authors argue in this relentless indictment of loyalty programs. Indeed, many assumptions about loyal customers – that they are profitable or that repeat purchasing indicates some kind of emotional attachment – are simply wrong. These consultants recommend that companies eschew loyalty programs in favor of good, old-fashioned service and unsentimental cost/benefit analysis.

– JOHN T. LANDRY

The HR manager at Medignostics sees a disaster on the horizon: The company's workforce is aging, and it can't attract young talent. But his bosses are more concerned with cutting costs here and now. How can he persuade them to take the long view?

The Cane Mutiny

Managing a Graying Workforce

by Cornelia Geissler

HUMAN RESOURCES MANAGER Frank Heberer frowned. The internal-mail envelope he'd just torn open with great expectations contained the report he'd labored over for months. It outlined the long-term human resources strategy he believed Medignostics needed to adopt in order to remain competitive in the next 20 years. On the title page was affixed a yellow Post-it, with the words "Not a priority" penned in the ornate handwriting of Erwin Baum, the vice president of HR. Noting the crispness of the binder, Heberer doubted that anyone had read beyond his cover sheet.

He felt completely deflated. For the past six months, this had been his pet project. He'd done all the research, and everything he'd read pointed to a rocky road ahead. The average age of the German population was steadily rising, and that had real implications for the midsize pharmaceutical company's personnel. He flipped open his report to look once again at the shocking statistic: Without immigration, the country's population would fall from 82 million to 24 million by 2100. "Granted, that's a long way off," he thought, "but what could be a bigger priority than a disaster you clearly see coming?"

Heberer had timed his proposal carefully. While the executive team might not have been reading many demographic studies, he trusted they'd heard

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

DANIEL VASCONCELLOS

of the wildly popular bestseller *Das Methusalem-Komplott (The Methuselah Conspiracy).* Written by Frank Schirrmacher, an editor of the *Frankfurter Allgemeine Zeitung* newspaper, the book chronicled the demographic transformation occurring in Germany and seemed to be the hot topic of conversation everywhere Heberer went. The picture it painted of the future was anything but rosy. In just 25 years, more than a quarter of the country's population would be over age 65. That was 6% more than in America. In his report, Heberer went further to predict the effect this trend would have on the German workforce. "What happens when our employees start retiring in droves?" he asked. "How will we find good workers to fill the ranks?" Heberer smiled grimly: At the moment, the bestseller's title struck a chord. He felt as if the members of Medignostics's executive wing – all of them older than 55 – had ganged up on him. Their priorities were all about cutting costs. Why couldn't they take the long view?

He dropped the report on his desk and combed through the rest of his mail. Only two more applications – a meager yield for a job that had been posted for three weeks on online boards and in the daily press. Heberer was trying to fill a position in basic research that had opened when Medignostics had enticed one of its chemists into management. He hadn't expected it to take so long to find qualified candidates and wondered if he should contact a recruiting agency.

A knock on the door interrupted his train of thought.

"Frank, can I speak to you for a moment?" His HR colleague Rita Wachten sounded troubled. "It's about Matthias Hausmann." The 58-year-old Hausmann had been with Medignostics for more than 20 years; he'd started as a bookkeeper and worked his way up through the accounting ranks before being moved into account management. "I just spoke with his manager. Matthias's time away from the office is becoming problematic. He can't always be found when decisions have to be made or when his clients call. Apparently, there's been more than one complaint."

"First the company insists on my being here full-time, and then it finds a pasture to put me out to….Tell me, Frank, when it gets to be ten years from now, will you know less about how to do your job – or more?"

"That doesn't sound like Matthias. When did the problem start?"

"In the last few months, he's taken an unusually high number of sick days."

"Is there something seriously the matter, do you think? He's not as young as he once was, but his energy couldn't have dwindled so suddenly."

"I don't know any details," Wachten said. She hesitated, then added: "But it might have to do with the part-time statute. I've been hearing through the grapevine about a lot of grumbling among the old guard. You're friendly with him – can't you have a word?"

She was referring to the Part-Time Statute for the Elderly, a special feature of German social legislation – and, more specifically, to Medignostics's policy regarding it. In the country's ongoing battle with unemployment, the statute was a way of easing older workers out the door so that jobs could be made available for the young. Companies that complied were eligible for subsidies. If you worked at a company that participated, then, beginning at age 55, you could reduce your hours to half-time for the rest of your working years but still earn 80% of the wages you had as a full-time employee. Once you reached age 65, the statutory retirement age, you would face only a small penalty in pension benefits for having worked those part-time hours. At first Medignostics encouraged employees to participate. But it was a costly program, even with the offsetting government subsidies the firm earned by, for instance, taking on new trainees. And unlike some other businesses, the company did not need a palatable way of making workforce reductions. So a few months earlier, the executive team at Medignostics had decided not to offer the program anymore. Hausmann, it turned out, was the first person the decision directly affected.

Heberer agreed to speak to the account manager and asked his assistant to arrange a meeting. "It's all part and parcel, isn't it?" Heberer thought. "We've got a group of workers nearing retirement age and few good applicants looking to take their spots. But all I hear from top management is 'We need to tighten our belts.'" He was more convinced than ever that Medignostics was on shaky ground.

Too Early Retirement?

When Hausmann entered the HR manager's office the next afternoon, Heberer caught himself looking for signs of illness. But the tall, athletic man rumbled in full of energy.

"Did you go to the mountains last week?" Heberer asked by way of greeting. "The weather was amazing." The two men had been members of the local mountain-climbing club for years. He offered Hausmann a chair and poured him a glass of water.

"Yes," Hausmann responded. "As soon as I'm surrounded by those peaks, I'm a new man."

Heberer smiled. "But the climate in here doesn't agree with you lately?"

"Well, I'm not getting any younger." Hausmann sighed significantly and sank a little deeper into the chair.

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"Nonsense! You can easily beat me up a mountain, even though I'm more than ten years younger than you."

"Well, mountain climbing is an activity that holds the body and soul together. Also," he paused and folded his arms across his chest, "no one tells me what stone to put my foot on."

"Ah. Are you having some difficulties with your boss?" Heberer had hired Hausmann's supervisor just a year before. The 32-year-old sales director was labeled a high-potential; top management expected great things from him. He had earned his MBA at Insead and, after that, had shot up through the managerial ranks at one of Medignostics's biggest competitors. Heberer considered it a feather in his cap to have lured this wunderkind away.

Hausmann studied Heberer's face for a moment before responding. "Your protégé is smart. I'll give you that. But he has a lot to learn about managing. And the 'new' approach to account management he's touting is basically the same thing we tried in the early 1990s, with a few added bells and whistles. Perhaps you remember how it turned out the first time? Because I surely do. Not only that, but he recently sent me on a training program with people who were all at least 20 years younger. I couldn't understand them – they spoke nothing but jargon, tossing around words like 'turnkey' and 'synergy.' And they've all got IT mania. I have to wonder, if their laptops or Palms are turned off, do they shut down, too?"

"I can sympathize with you, Matthias, but no one benefits when you disengage. Your absences are having a negative impact on your colleagues and clients. If you're no longer comfortable in this department, you should have talked to me. Perhaps we can come up with a new position for you."

"So that's what this is really about! First the company insists on my being here full-time, and then it finds a pasture to put me out to." Hausmann looked belligerent. "I've been here a long time, and I know this business inside and out. If I say a man does not know how to manage, why not assume I may be right? Tell me, Frank, when it gets to be ten years from now, will you know less about how to do your job – or more? And what if everyone has stopped listening?"

"I'm listening." Heberer cautiously patted Hausmann's shoulder. "And no one wants to put you out to pasture. Let's both give this some more thought and meet again at the end of the week. All right?"

As soon as the door closed, Heberer exhaled slowly. He suspected that this unpleasant conversation was just the first of many; he could think of three other employees the same age as Hausmann, and he wouldn't be the least bit surprised if they soon started staging their own unofficial "strikes."

Older and Wiser

Heberer was stirring his coffee in the cafeteria when he noticed Bertha Weber from the marketing department waving him over.

"Frank, I was just planning to call you. How are you doing? The reason you've been on my mind is that I've gotten some research results that raise a few issues –" She stopped midstream and looked concerned. "Is something the matter? You look worn out."

"Sorry, I guess I am. You know how we phased out the early retirement policy? It's causing some, er, tension." He shook his head as if to clear it. "But that's hardly your concern, is it? Tell me, what about this new research?"

"Actually, it may be related. The good news is, our brand is the most respected in the geriatric market. There is definitely a lot of potential for us to extend it."

"That's great." Heberer smiled. "Your team must be very proud." At the same time, he wondered what this had to do with his worries.

He stood up to leave, but Weber placed a hand on his arm to stop him. "Frank, one more thing. I've heard a rumor that the company is trying to warehouse Hausmann."

Heberer looked surprised. "Bertha, you know I can't discuss personnel matters with you –"

She held up her hand to cut him off. "No, of course not. I'm not asking you to. All I'm saying is that – as we've just agreed – older workers have a lot to offer. Think of all the experience they have. They know their way around the firm better than anyone. Our stopping the early retirement option must have been a real blow. I just think you should give them some time to adjust."

"I'll keep that in mind, Bertha, I will. But this is a company, and we need our employees to be productive. Now, if you'll excuse me, I've got a full day

"Your 'age wave' crisis…is tremendously overhyped. It reminds me, in fact, of Y2K. Everyone panicked, talked in horror scenarios, and threw money at consultants – yet we woke up on January 1, 2000, to find nothing amiss."

"Think about it, Frank," Weber said, reading his mind. She leaned over the table with a look that reminded him of his high school math teacher. "What do you know about the problems one faces when arthritis sets in? Or how it feels to have a weak bladder?"

"Listen, I just turned 45. That's a long way off for me."

"Precisely," she beamed. "And therefore people your age – not to mention those who are younger – aren't qualified to market the products that 70-year-olds need. Our arthritis campaign that was so successful last year? It was spearheaded by Johann Weiss, who retired not long after."

"So you're concerned about our recruiting. I see. Maybe we need some more gray hairs in marketing?" Heberer thought for a moment. "Makes sense. Definitely gives me something to think about, thanks."

ahead of me. I've got some applicants to speak to and then a meeting this afternoon with Erwin to talk about the other end of the aging spectrum – children. He's finally agreed to hear my plan on a company day care center."

Weber grimaced. "Good luck with the dinosaur."

Back in his office, Heberer picked up the applications that still lay on his desk. Thoughts about the old-timers would have to wait; right now, Medignostics urgently needed to fill this specialist position. Basic research was the company's most important department – without it, the product pipeline would dry up. Unfortunately, a good scientist was hard to find. He wondered if the lower birthrate was already having an impact on the number of university graduates.

One of the applicants looked promising. The woman had excellent grades, her dissertation topic perfectly fit the job, and she had worked for a competitor for the past three years. “What a find,” Heberer thought joyfully. “I didn’t even have to hire an expensive recruiter.” He picked up the phone and dialed her number.

In with the New?

Two hours later, Heberer knocked on Erwin Baum’s door. The VP of human resources was a formidable man. He had joined Medignostics 30 years ago, in the sales department, and had been drilled for decades on reaching financial goals. To Baum, every decision came down to numbers.

Heberer tried to suppress his disappointment over the rejection of his demographics report. He needed to be clearheaded and persuasive to have any chance of getting approval for his day care idea.

“Come in,” a voice rattled from within Baum’s office. Baum was sitting on his leather sofa and reluctantly looked up from the documents he had been reading. “What can I do for you?” he asked in a tone that sounded more like, “Make it short.”

“I’d like to talk about the viability of establishing a company nursery school,” Heberer cautiously reminded him, taking a seat in the opposite chair.

“Child care is a private matter, Heberer. We just got the costs for early retirees off our shoulders. Now you want to shackle us to parents? You know we don’t have money to burn.”

“With all due respect, we talk a lot about costs, but we ought to be talking about people.” Shocked by his own boldness, Heberer rushed on. “Otherwise, we’ll run into problems with recruiting and retention, and that means bigger costs down the line.

“Let me give you an example. I finally have a terrific applicant for the research job. Her qualifications are ideal, but she has two children. Our having a school here could make the difference between her joining us and her going to a competitor.”

Baum leaned back and folded his arms: “You can’t tell me that she is the only qualified applicant in this entire country.”

“It’s not just about this one position. We need to figure out a way to ensure reinforcements for the next ten years. And let’s not forget the many mothers – and fathers – already on our payroll. Think how it would improve retention if leaving the company also meant pulling your child out of school.”

“If it isn’t done right, the effect is more dissatisfaction than satisfaction. And doing it right is expensive – in both the short run and the long run. You know, I’m 58 years old, but that doesn’t mean I don’t care about the future of the company. If today’s problems don’t get taken care of, though, there is no future. Our first priority is cost containment. Then growth. Once we are on that path, I will gladly reconsider the luxury of a company nursery school.”

Heberer thought about *The Methuselah Conspiracy* to steel himself. “I am not trying to create programs that sap our growth. I am trying to *drive* growth. Somehow we must learn to keep our older workers engaged and productive. At the same time, we must become more attractive to younger workers. In some ways, those are similar goals; in other ways, they are at odds. But when I create a long-term plan to strike the balance – to tap the knowledge and networks of older workers and signal their worth to us without allowing their prolonged tenure to block the ascent of young talent – you don’t even read my proposal.”

“Heberer, this conversation was not supposed to be about your ‘age wave’ crisis, but here is my thought on that: It is tremendously overhyped. It reminds me, in fact, of Y2K. Everyone panicked, talked in horror scenarios, and threw money at consultants – yet we woke up on January 1, 2000, to find nothing amiss.” The telephone rang. After a glance at the machine’s display, Baum decided that the conversation was over. “And now, please excuse me.”

What should Medignostics’s long-term HR strategy be? • Four commentators offer expert advice.

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I suspect that Frank Heberer did not support his proposal with enough data and facts. In my experience, human resources managers won't get the ear of executive management unless they translate their concerns into language that the top team understands. If Heberer wants his HR strategy to be taken seriously, he must show Erwin Baum the business consequences of ignoring the demographics issue. He should frame them in terms of costs, performance, and innovation.

Let's look at costs first. Right now, the lopsided staffing structure at Medignostics is generating expenses that the executives might not be aware of. Matthias Hausmann frequently calls in sick, and that is creating work delays and hurting productivity. Several clients have complained and may move their business elsewhere; winning them back may take expensive measures.

Additionally, the salary structure is surely becoming an issue since older employees generally have higher salaries than their colleagues who are ten to 15 years younger. If Medignostics continues on its current course, this problem will become more acute in five to ten years. I'm less concerned with employees like Hausmann, who are about to retire, than with those between 40 and 50 years of age, for whom work/life balance is a foreign concept. Burnout and stress-related cardiovascular illnesses are especially widespread among this middle-aged group, and Medignostics will have to address costly problems like these down the road.

A similarly bleak scenario can be drawn for performance: When managers are markedly younger than their reports, tensions often arise. The young high-potentials, using the most modern technology and business jargon, can make subordinates feel that their experience and knowledge are outdated and not valued. Continuing education can be helpful, but not if it's like the course Hausmann participated in. Instead of improving his productivity, the experience undermined his motivation and further exacerbated relations with his supervisor. Managers should pay attention to the needs of older workers and send them to appropriate training courses to help them remain productive until they retire.

Employee age has a mixed effect on innovation. Older employees–especially at pharmaceutical companies–are an important resource. Medignostics supplies products to seniors, a fast-growing market. As Bertha Weber explained, firms that properly utilize older employees will develop better products for this target group and will be better equipped to market them effectively.

Firms that properly utilize older employees will develop better products for the senior target group and will be better equipped to market them effectively.

However, a pharmaceutical company must also perform basic research to maintain its product pipeline. For this, it needs young, highly qualified scientists. And they won't sign on if they perceive Medignostics to be a conservatively managed, family-unfriendly company.

Only when Heberer details these sobering scenarios will Baum be ready to listen. We don't know exactly what Heberer's HR proposal entails. But I hope it includes launching an information campaign for Medignostics's staff, to spread awareness about the changing demographics of the company and what they mean in practical terms. There should also be a plan for internal development and continuing education that takes workers' life stages into account. It should include managerial training that older employees run and health programs that accommodate employees in the middle of their working lives. The plan should also include affordable, flexible retirement and compensation models as alternatives to the part-time statute.

WENDY WRAY

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To encourage older workers to stay on the job, the U.S. eliminated the Social Security earnings test for retirees over 65, which had been a strong disincentive to work.

This case does not depict a uniquely German situation. The steady rise in average age is occurring in many advanced economies, including the United States. Each of these nations will have to address the question of how to plan for an approaching labor shortage.

The challenges posed by aging populations range from fiscal imbalance in national pension systems, like the U.S. Social Security program, to the potential economic strains due to shortages of skilled workers. In the United States, lower fertility rates, rising life expectancies, the retirement of the baby boom generation, and the popularity of early retirement are all contributing to slower growth of the labor force: Annual growth has dropped from about 3% in the late 1970s to around 1% now. Further, the United States is on an unsustainable fiscal path, driven in part by these demographics. Absent change, the country may experience reduced economic growth and a slower rise in living standards. These trends and their implications are foreseen in other nations as well.

Countries can try to avoid that dark future by enacting public policy changes to rebalance their long-term fiscal trajectories and to expand the labor force. One way to do the latter is to encourage and enable older workers to stay on the job longer. An obvious first step is to dismantle barriers to older workers. For example, the United States eliminated the Social Security earnings test for retirees over 65. The test reduced Social Security benefits to those with incomes above a certain level and was a strong disincentive to work.

But more remains to be done to alter incentives both for workers and for employers. Rules in the United States governing employer-provided pensions prevent companies, in certain circumstances, from paying out pension benefits to people still on the payroll. For most affected workers, it is only rational to quit working entirely at the full retirement age, even though many of them would prefer to scale back their work hours more gradually. Other pension rules carry similar disincentives for employers and workers. Companies say that they face economic barriers to creating more of the part-time positions that would suit older workers. The fixed costs (for benefits, training, and such) of employing a worker can create strong incentives to maximize that individual's hours, output, and tenure prospects.

Between these structural problems and employers' ambivalence about the merits of older workers (as seen in the Case Study), initiatives to hire or retain older workers are not widespread in the American private sector and are only somewhat more common in the public sector. Some public school systems have instituted Deferred Retirement Option Plans, which allow teachers who are eligible for full retirement through defined benefit plans to continue working without having their pension checks deferred or reduced. DROP programs have reportedly been successful in retaining some of the best and most experienced teachers. The U.S. Government Accountability Office is currently studying older workers and their employers, as well as ways the federal government can remove or mitigate barriers to working longer.

Many believe that more innovation will occur in the private sector as companies' growth becomes constrained by the labor crunch. The pioneers may be the industries that rely most on "knowledge work"–where a career's accumulation of experience and wisdom is an especially precious asset. And just as we in Washington hope to learn from how other governments are dealing with the issue, companies will build on one another's solutions. Meanwhile, I sympathize with managers in the vanguard like Heberer. They may not get a hearty welcome in their bosses' offices yet, but their efforts can make a tremendous difference in the long run.

Germany's changing demographics have created fierce competition to recruit qualified professionals, so companies would do well to position themselves as family friendly.

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I would recommend that Heberer make another serious effort to convince Baum that the changing demographics are a real concern for the company. As I see it, Heberer must not only raise a red flag but also present affordable ways to balance out the age structure at Medignostics.

I applaud his idea to provide a day care facility on-site. Even though it is difficult to calculate exactly the benefits such a program will bring, there are various reasons to act on this idea. In general, employers are demanding increased mobility and flexibility from their staff, and so they must provide something in return. And because the country's changing demographics have forced firms into fierce competition with one another to recruit qualified professionals and managers, companies would do well to position themselves as family friendly. Child care is an important criterion when an employee decides whether to join a company. If Medignostics truly wants to become more competitive in attracting talented, young employees, offering such a benefit will definitely help. In fact, that is one of the reasons we offer a day care facility at Telekom's Bonn site, where some 10,000 employees work.

Of course, Heberer must make sure the costs for such a project do not get out of hand. Before pushing his proposal too far, he has to calculate the construction, rental, and staffing costs. The funding of a child care center is easier to handle for a corporation like Telekom, with €58 billion in yearly revenue, than for a midsize firm such as Medignostics. But that is no reason for Heberer to give up his quest. If the company can't afford to provide a center on its own, Heberer should try to come up with imaginative solutions. Maybe Medignostics could cooperate with other companies in the region to establish (and share the costs of) one day care facility that serves all their staff members.

The other issue Heberer is wrestling with has to do with older employees. At Telekom, we still have a part-time provision for them, to smooth their transition into retirement. At first glance, this solution looks expensive. But I am not certain we would save any costs if we were to do away with it, as Medignostics has done. Here, as in the case of offering day care, it is difficult to assess all the benefits accurately. Take Hausmann, for instance. He has given the company more than 20 years of great service. If managers like him want to wind things down near the end of their working lives, then I believe they should be given that opportunity. Otherwise, you run the risk of employees' internally "resigning" – putting in only meager efforts, blocking progress, and chasing away important clients. In the long run, this kind of subtle sabotage causes the company far more damage – in terms of costs, competitiveness, and reputation – than an arrangement that lets workers bow out earlier and with grace. An internal resignation like Hausmann's eventually makes itself known through very clear signals, such as poor attendance.

Since Medignostics is in a difficult financial situation, it cannot offer part-time work to every aging employee. But I would recommend that the company carefully analyze each case to determine the best possible outcome. It may be worthwhile to hire a coach for late-life career changes or an outplacement adviser for some employees. And it might be good to think about transferring aging workers to less demanding roles. In Japan, for instance, employees are routinely taken out of management at a certain age and allowed to glide into retirement. Perhaps Hausmann might be better off in a consulting role at Medignostics. That way, the company could still benefit from his vast experience, but clients wouldn't be affected if he adopted a part-time schedule. For a business to be successful, it must take the interests of both its clients and its workforce into account.

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To address human capital needs, every company needs a long-term strategy – one that takes into account the societal, political, economic, and technological changes that will dramatically transform the way we work in the future.

Two fundamental changes should frame Medignostics's response to the challenge of an aging workforce. The first is globalization. Although the movement of labor is not as unfettered as the movement of goods, labor laws around the world are changing, and companies can cast a much wider net for talent. Medignostics, therefore, should consider its potential talent pool to be global rather than national or local. The second is technology. Today, everyone is interconnected and interdependent. The 24/7 environment, with its constant information flow, forces a change in the basic work paradigm.

In this context, the old model of hiring young management trainees at corporate headquarters and having them work their way up through the ranks to senior management is as archaic as quill pens. The new model focuses on attracting talent from all over the planet – people who can work from dispersed locations, linked by common goals and enabled by technology. The post–World War II business model is yielding to a more fluid, less hierarchical approach.

The old model of hiring young trainees at corporate headquarters and having them work their way up to senior management is as archaic as quill pens.

The rigors of a global business model require far greater inclusivity. Despite the predictions of a looming global war for talent precipitated by declining Western birthrates and accelerating retirements, the talent pool is deep when viewed from a global perspective. Companies should expect to employ a workforce that is far more diverse in terms of nationality, age, and gender.

Two examples underscore the changes in how companies must think about attracting talent and how people think about their work. In China, there is enormous demand for executives who have gone to the West to be educated and to work but who wish to return home. Referred to as *hai gui* – or returning sea turtles – these executives provide critical managerial and technical talent to Chinese industry. Chinese companies, therefore, must learn how to identify and attract this group of professionals.

In the West, an entire generation of executives nearing retirement is reinventing the way it works. Rather than retreating to the golf course, executives are extending their working life far beyond traditional norms. They've prepared by "going plural" earlier in their careers, pursuing various interests that may include public company boards, charity boards, and venture capital work. This trend coincides with the increased demand for experienced directors.

Companies that have reinvented their processes to take advantage of these changes don't have problems attracting young talent or retaining seasoned executives. They lead their sectors, in part because their own leaders have challenged themselves to invent new ways to work in order to create the greatest possible opportunity for the broadest inclusion of talent. Kelvin Thompson, a senior partner and innovation leader at Heidrick & Struggles, observes that the companies winning the talent wars have leaders with both the knowledge and the confidence to manage and grow a global business. They hold inclusivity as a core value and are willing to create innovative work environments in order to foster it. Finally, they have the foresight to invest in technology that lets employees optimize their talents. Companies with such leaders will face the challenges of global competition, technological innovation, and workforce changes with the confidence that they will attract, retain, and motivate the most talented people they can find from around the world.

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The best leaders have an almost uncanny ability to understand the context they live in – and to seize the opportunities their times present. A look at U.S. business history shows how they do it.

Zeitgeist Leadership

by Anthony J. Mayo and Nitin Nohria

JEFFREY PELO

A LEADER'S LONG-TERM success isn't derived from sheer force of personality or breadth and depth of skill. Without an ability to read and adapt to changing business conditions, personality and skill are but temporal strengths. An understanding of the zeitgeist and its implications has played a critical but unheralded role in some of the greatest business victories of all time. Jack Welch is widely credited with GE's remarkable performance during the 1980s and 1990s, for example, but his predecessor, Reginald Jones, made the wise decision to name Welch as his successor despite the fact that the younger manager was considered too inexperienced, too impatient, and too reckless for the job. Though they were polar opposites, each was perfectly attuned to his era.

An accountant by training, the reserved and dispassionate Jones ran the business during the 1970s – a time of simultaneous recession and inflation when he nonetheless managed to sustain strong growth in both revenue and profits. He was well suited to an environment where rational planning and prudent investments were the order of the day. It was also a time of heavy regulation, and Jones's statesmanlike demeanor made him particularly effective in negotiations with government regulators. But Jones recognized that global competition was heating up and the company's future success would hinge on nimbleness and a greater capacity for change and, hence, on a new type of CEO. The boundary-busting Welch – who also read the zeitgeist and saw great change on the horizon – was the ideal person to grow the business during headier times.

A lack of contextual sensitivity can trip up even the most brilliant of executives. No less a luminary than GM's

Alfred P. Sloan, whose decisions in the 1920s fundamentally shaped the way large companies are run even today, was relieved of day-to-day management of the business in the 1930s because he was unwilling to meet with the new United Automobile Workers union. Before the 1930s, employees had little if any bargaining power, but they made great gains through the decade, and for the first time in U.S. business history, the ability to negotiate effectively with labor became critical to a manager's success.

Labor's power would wax and wane over the years. Indeed, throughout the twentieth century, the overall business context shifted continually. To greater or lesser degrees, factors such as government regulation, social mores, and global events influenced the opportunities available to industries and leaders.

An understanding of the zeitgeist and its implications has played a critical but unheralded role in some of the greatest business victories of all time.

Certain conditions were more favorable to some types of businesses than others. The 1920s were very good to consumer products companies and advertising agencies, for instance, because a nation newly out of war was eager to buy, while the 1940s saw a focus on the heavy machinery needed to fulfill the massive military requirements imposed by World War II. And different types of top executives could succeed depending on the context of both the broader business world and the individual business. The kind of person who might be a superstar in a conservative time like the 1950s, when mature industries prospered, might be a hopeless stick-in-the-mud in an era that favored new or emerging industries, such as the 1990s (or India today). A CEO who excels during a period of relative freedom might derail during a time of heavy government intervention, when an ability to navigate rules and manage relationships might prevail over an inventive mind. This is not to say, though, that each era was ideally suited for only one type of executive. In every decade, many forces were at play, affecting the context of individual businesses in different ways and affording different opportunities. The ideal CEO for one company in an era was not necessarily the right person to lead another at the same time. What's more, CEOs and founders played an important role in defining the context in which they lived and worked because they not only seized the opportunities of a specific age but also created opportunities that influenced events.

The notion of zeitgeist might be intangible, but the risks of contextual insensitivity are concrete. If you can't read the business landscape, you risk leading your organization in the wrong direction or choosing the wrong successors. To better understand this connection between business performance and context, we studied 1,000 great U.S. business leaders of the twentieth century – individuals who shaped the way Americans – and people around the globe – live, work, and interact. (For our definition of "great," see the sidebar on our methodology.) We identified exemplars of three distinct leadership archetypes – the *entrepreneur,* the *manager,* and the *leader* – and examined the conditions under which each thrived.

While the ability to seize the zeitgeist – a skill we call "contextual intelligence" – proved universally pivotal to their success, the way each of these various individuals exploited opportunities was very different. Entrepreneurs were uniquely skilled at sensing emerging opportunities or the potential of nascent technologies and through perseverance and determination built successful new enterprises. Managers could spot opportunities to aggressively expand the scale and scope of an established business through disciplined resource allocation and execution. Leaders sensed the potential in moribund businesses and found ways to breathe new life into them. (For a fuller description of each approach, see the sidebar "Three Archetypes of Leadership.")

We organized our study chronologically, sorting the 1,000 business executives according to the decade in which they founded their company or became CEO. Decades turned out to be a good proxy for different eras or specific combinations of contextual factors. There is a common understanding, for example, of how the 1950s differed from the 1970s. Once we sorted our leaders in this way, what we found was this: While many contextual factors are at play within any era, six factors – government intervention, global events, demographics, social mores, technology, and labor – are especially influential in shaping the landscape for business. (The relative influence of these factors over the years is shown in the exhibit "The Twentieth-Century Zeitgeist.")

Government Intervention

The extent to which the central government intervenes in business matters determines the degree of autonomy afforded business executives and the level of resources a company needs to cope with potentially complicated regulations.

The 1910s was a time of relatively high government involvement, witnessing a flurry of antitrust activity that included the breakup of Standard Oil and American Tobacco. In this period, the government established the Federal Reserve System, transformed its tariff leg-

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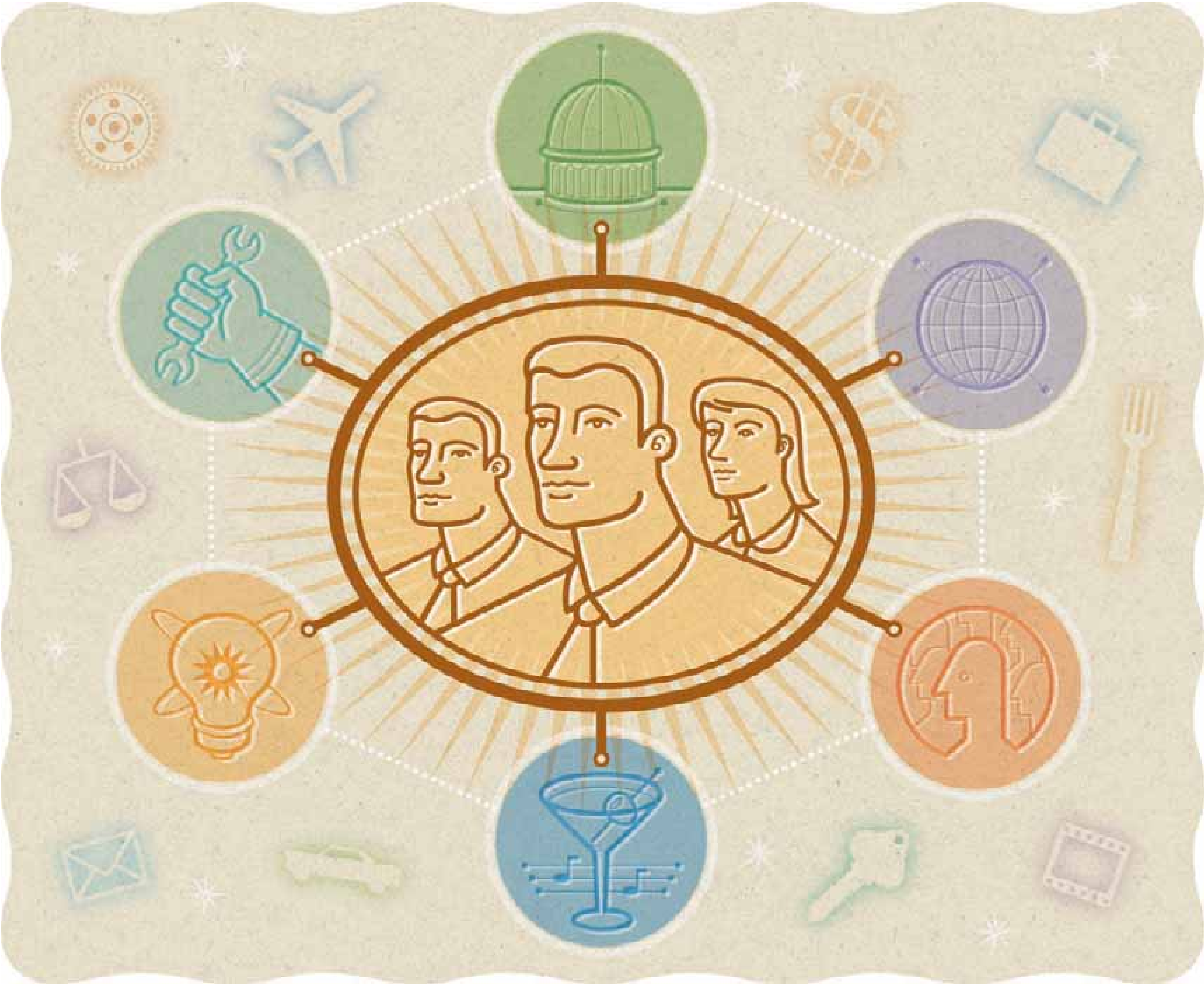


islation, expanded tax collection, and enlisted the support and cooperation of business for America's entry into World War I. CEOs and founders in that decade had to understand how to navigate the halls of political power.

But that requirement didn't last long. The 1920s saw a return to laissez-faire governing, as a nation newly out of war wanted freedom and adventure. This was a period in which high-profile antitrust suits against U.S. Steel and Alcoa failed, and both corporate and personal income tax rates were cut. Some manufacturers and their advertisers shamelessly invented and marketed remedies for diseases such as bromodosis (foot odor) and homotosis (a malady brought on by the lack of nice furniture) – practices that today would surely catch the attention of consumer advocates and could well land you in court. Even Prohibition, which was enacted in 1919 to reduce crime and improve urban stability, laid the foundation for many underground illegal businesses.

The freewheeling atmosphere evaporated when the 1929 stock market crash brought on a wave of regulation that transformed many businesses, most notably banking. Among the new laws was the Glass-Steagall Act of 1933, which prohibited any company from engaging in both investment-banking and commercial-banking activities. It prompted Harold Stanley to leave J.P. Morgan and cofound Morgan Stanley, an independent bond house that would carry on the securities-trading business that his former employer was forced to exit. Despite the depressed economy, the firm's very success invited further government intervention into the industry. An example of the leader archetype, Stanley was an outspoken advocate for his company and his industry, and his testimony helped fend off further antitrust activity in the 1940s.

Government controls on business remained strong through the Second World War, as business executives were in many cases forced to support the war effort. Many manager-type CEOs seized this opportunity to dramatically expand their overall businesses through product-line conversions or extensions. As the war ended, the technological achievements it generated were turned to commercial applications, and businesses reestablished a much greater level of autonomy. The 1960s was another era of greater government involvement, as the Kennedy and Johnson administrations enacted legislation focused on equal employment, workplace safety, and consumer rights. Periods of heightened regulatory activity don't always unfold in the same way, though. This time, the government's attempts to control mergers and acquisitions within the same industry spawned the conglomerate business model, as companies attempted to skirt antitrust activity. During the last two decades of the twentieth century, government-mandated deregulation of the airline, banking, and telecommunication industries opened the door to many new competitors, once again changing the landscape for business executives.

Global Events

U.S. business executives were relatively immune to global events (and preferred it that way) through the first half of the twentieth century, with the notable exception of the two world wars and the impact of immigration, which provided a steady supply of cheap labor.

While most companies were happy to revert to the comfort of isolation at the end of both wars, some CEOs saw in the country's leadership position at the close of World War II an opportunity to expand into Europe and beyond. Look at Caterpillar. The CEO at the time, Louis Neumiller, fits our definition of the manager archetype, grasping how the shifting business landscape presented new opportunities for his company, all the while running a smooth operation. He resisted pressure from the military to shift his manufacturing operations entirely from bulldozers to artillery during the war, convincing the government that large-scale earthmoving equipment would also be needed on the battlefields. He built a new plant to make engines for army tanks but kept his main operation focused on tractors and bulldozers. They proved as critical in battle as planes and tanks, essential for constructing landing strips, digging ditches, clearing forests, and so forth.

At the end of the war, Caterpillar received an unexpected leg up in its international expansion efforts as its bright yellow, easily recognizable brand of equipment stayed behind when the U.S. troops came home. Most of that machinery was taken over by local European and Asian governments and businesses, which created a new market for the manufacturer. Caterpillar established dealerships and service centers in these areas for training, maintenance, and – most important – follow-on purchases. At the same time, Neumiller's insistence that the company stick to its core competency meant that after the war Caterpillar was well prepared to fill the growing need for earthmoving equipment at home, providing machines for roadway construction, suburban expansion, and other large-scale development in the 1950s.

Although American social attitudes remained isolationist following the war, the relative stability of the 1950s created

continued on page 57

Three Archetypes of Leadership

The word "leader" has come to define business executives in a general way. But when we sought to understand the different types of leadership, it became clear that the same word could be applied to one of three essential executive archetypes.

• *Entrepreneurs* are often ahead of their time, not necessarily bound by the context in which they live. They frequently overcome seemingly insurmountable obstacles and challenges to persevere in finding or launching something new.

• *Managers* are skilled at reading and exploiting the context of their times. Through a deep understanding of the landscape in which they operate, they shape and grow businesses.

• *Leaders* confront change and identify latent potential in businesses that others consider stagnant, mature, declining, or moribund. Where some see failure and demise, this breed of executive sees kernels of possibility and hope.

Certain periods of the past century may at first glance seem almost ideally suited for the emergence and dominance of a particular type of executive. For instance, the early part of the century may seem to have been made for the entrepreneur. The 1950s might seem perfect for the organization-man manager.

The tumultuous 1970s might seem ideal for the leader. But we found that all three types coexisted and were pervasive through every decade. In fact, we found that all three archetypes were vital to sustaining the vibrancy of the capitalist system. Entrepreneurs create new businesses, managers grow and optimize them, and leaders transform them at critical inflection points. Time and again, the American capitalist system has borne witness to this business life cycle, and it is the ongoing regeneration of this pattern that ultimately sustains development and progress.

THE 20TH CENTURY Zeitgeist

GREAT LEADERSHIP is not a singular concept. On the contrary, it is a function of the circumstances in which businesses and their top executives operate. The opportunities available to businesses are deeply influenced by six contextual factors – demographics, technology, social mores, government intervention, labor, and global events – and each comes into play to a varying degree at different times. In the 1930s, for example, the U.S. government took an active interest in business affairs, as the country struggled to recover from the Great Depression. That was a dramatic departure from the 1920s, when a laissez-faire postwar attitude gave businesses free rein to operate as they chose. A break-the-rules type of leader with an inventive mind might have excelled in a start-up during the 1920s but be unable or unwilling to navigate the complex regulations pertaining to a maturing company during the decade that followed. The best leaders can sense the winds of change and adapt with the times.

The chart that unfolds across the following pages shows how these six contextual factors played out in business throughout the twentieth century in the United States. It also illustrates how three different executive archetypes – entrepreneurs, managers, and leaders ("leaders" as an archetype, as opposed to the more generalized term for someone leading an organization) – capitalized on the opportunities of their times. It demonstrates at a high level how context influences business and, in turn, how leaders can influence context.

TIMELINE, SEE INSIDE

Decade by Decade

The nation's mood shifted constantly. Entrepreneurs, managers, and leaders each seized the new opportunities – and responded to the corresponding challenges – in different ways.

E Entrepreneurs M Managers L Leaders

1900s

Growing population; vast market expansion; minimal labor impact; initial government intervention but strong big-business power

E Cyrus Curtis, Curtis Publishing, seizes on increased middle-class purchasing power to publish the *Ladies' Home Journal* and the *Saturday Evening Post.* M Clarence Woolley consolidates the radiator industry into American Radiator. L Frank Ball uses the expired patent for the Mason Jar to build Ball Corporation.

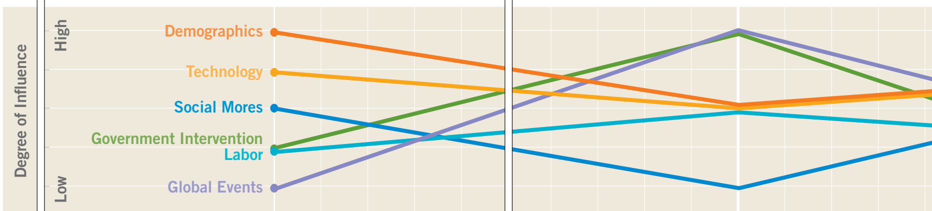
1910s

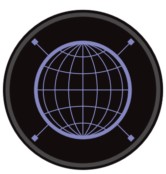
Heavy regulation; business retools for WWI; some small labor power

E Clarence Saunders' self-service Piggly Wiggly stores give consumers access to newly emerging national brands. M Frank Phillips (above) cofounds Phillips Petroleum after the breakup of Standard Oil. L William Fairburn, Diamond Match, brings new life to the match industry with a nonpoisonous technology.

Contextual Influence

The relative influence of each contextual factor shifted from decade to decade. The degree to which each played a part is shown on a scale of one to five by the thickness of the shaded background in each row. The colors correspond to the darker lines in the graph at right, which indicate how the factors shifted in relation to one another across the decades.



	1900s		1910s	
 Demographics		8.8 million immigrants arrive throughout decade Cities expand Pop: 76–92 million	Anti-immigration sentiment peaks during WWI	Great Migration begins as African-Americans relocate from rural South to northern cities
 Technology	Model T Plastic Safety razor	Widespread use of steam engine, electricity, and open-hearth furnace allows businesses to expand nationwide	First widespread use of auto assembly line Self-starter increases popularity of automobile	
 Social Mores		Progressivism *The Jungle*	Sedition Act Prohibition begins Red Scare and race riots	
 Government Intervention	First significant enforcement of Sherman Antitrust Act Pure Food and Drug Act; breakup of beef trust	Tariff Act forces corporations to open their books for government inspection Excise tax imposed on corporations	Breakup of Standard Oil and American Tobacco Clayton Antitrust Act	Federal Reserve Act First Federal-Aid Highway Act Personal income tax reinstituted
 Labor	Fewer than 500,000 union members Department of Commerce and Labor created		Ford doubles factory wages and shortens workday	Worker shortage: Unions double membership and increase wages
 Global Events		U.S. begins construction of Panama Canal	War Industries Board coordinates activities among labor, government, and business for WWI	Cost-plus contracts introduced Protectionist tariffs reduced

PHOTOGRAPHS THIS PAGE: @ Bettman/CORBIS: Immigrants, meat plant, Panama Canal, Ford Model T, Phillips, and Rudkin; CORBIS: Asto

1920s

Government retrenchment; cultural divide between rural and urban residents; broad technology expansion; anti-immigration; massive consumer credit

E Juan Trippe founds Pan Am, the first company to exploit international commercial flight. **M** Robert Woodruff makes Coca-Cola a part of Americana with wholesome advertising. **L** Gerard Swope revitalizes GE by moving from utilities to consumer products.

1930s

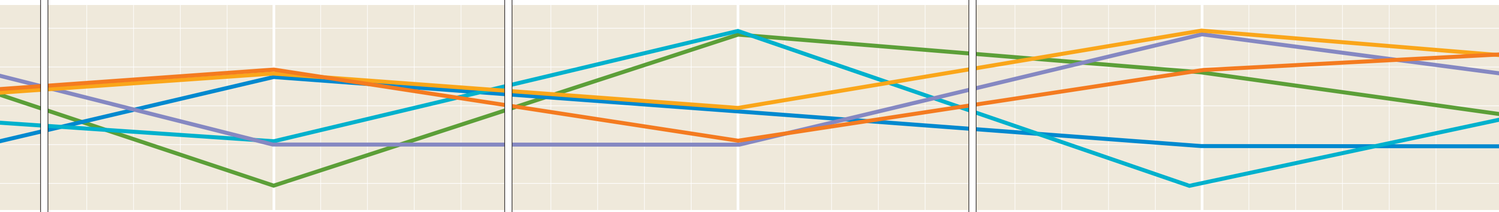
Heavy government influence; Great Depression; union progress; technology adaptation; migration

E Margaret Rudkin (above) founds Pepperidge Farm, creating an upscale commodity product. **M** Martin Clement invests in the Penn RR to connect an expanding country. **L** Harold Stanley forms Morgan Stanley to comply with regulations separating commercial and investment banking.

1940s

World War II; cooperation among business, labor, and government; postwar baby boom; pent-up consumer demand

E Edward DeBartolo, Sr., develops suburban shopping centers. **M** Louis Neumiller oversees Caterpillar's mobilization for war and later growth in expanding suburbia and abroad. **L** E. Morehead Patterson converts American Machine and Foundry from cigar-rolling equipment to missile systems to bowling-alley components.



1920s

Population of urban centers overtakes that of rural communities

1930s

Westward migration of midwestern farmers and laborers for employment and better climate

Massive dust storms uproot millions

Smallest ten-year increase in population: 123–132 million

1940s

Baby boom begins

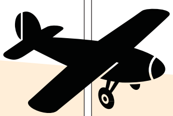
Suburbs start to form

1920s

First radio station

Talkies

Frozen foods



1930s

Advances in aviation

Nylon

Fiberglass

Air-conditioning begins to realize commercial potential

1940s

Planes and ships built in less than a day for the war effort

Atomic bomb

ENIAC computer

Penicillin used extensively to treat soldiers' infections

Polaroid camera

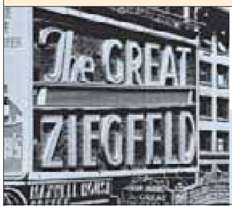
1920s

Social divisions arise between rural and urban areas

Women's suffrage

Rampant bootlegging and organized crime

1930s



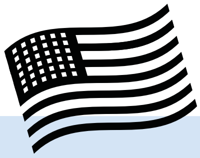
Escapism in radio serials

Golden age of movies

1940s

Patriotism soars

GI Bill



1920s

U.S. Steel and Alcoa withstand antitrust accusations

Personal and corporate tax rates cut

Airmail service starts

1930s

The New Deal

Commercial and investment banking separated

SEC established

Federal regulations prohibit false advertising

1940s

Military spending explodes

Graduated income tax, Victory Tax adopted to fund war effort

Rationing

1920s

Union membership declines sharply

Minimum wage and maximum working hour legislation overturned

1930s

Unemployment peaks at 25%

Unions surge, adding 7 million members in a single year

CIO union created

NLRB created

Fair Labor Standards Act sets minimum wage

1940s

Rosie the Riveter

Postwar strikes

Government backlash against postwar union movement

1920s

Isolationism

U.S. restores high tariffs

U.S. pushes for debt recovery

Allied nations seek war reparations from Axis powers

1930s

Increased tariff protection through Smoot-Hawley Tariff Act

Continued isolationism

1940s

War Production Board readies nation for WWII

U.S. becomes a global power

Marshall Plan

Cold war begins

r Theater

1950s

Baby boom; business growth unfettered by regulations; conservative social norms; labor progress; technology commercialization; Korean War, cold war

E Ray Kroc masters the franchise operation with McDonald's. **M** Howard Morgens forms P&G Productions to produce TV soap operas. **L** Malcolm McLean (above), SeaLand Industries, revitalizes the shipping business by creating the containerized cargo system.

1960s

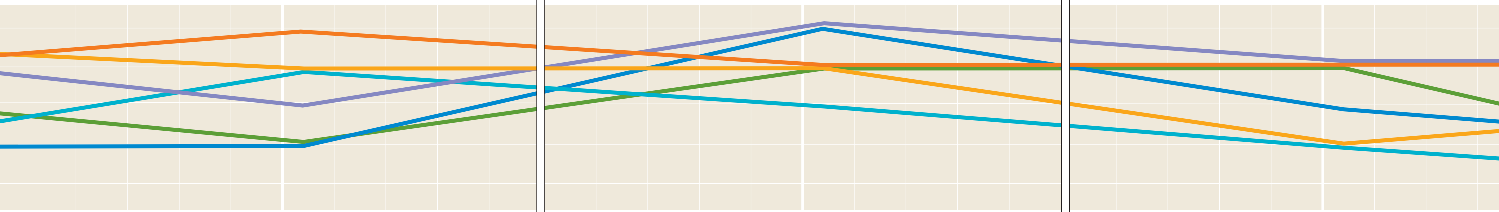
Social discord; antitrust legislation; conglomerates; bulging population; space race; booming economy

E Sam Walton refines discount retailing at Wal-Mart. **M** Henry Singleton capitalizes on the conglomerate business model to build Teledyne. **L** Kenneth Iverson, Nucor, uses minimills to revolutionize steelmaking in the United States.

1970s

Oil embargo; stagflation; computer technol commercialized; weakening labor; moderat government intervention; massive internat competition

E Dee Ward Hock, Visa International, fores an interconnected world of electronic inter change long before the technology become ality. **M** Edmund Pratt, Jr., invests heavily in to make Pfizer a global player. **L** Charles (M Harper transforms struggling ConAgra into of the largest food processors in the world.

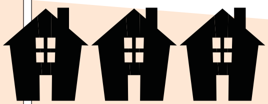


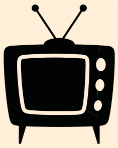
1950s

Medical advances extend life expectancy

More people now live in suburbs than cities

Population soars to 179 million – largest ten-year increase





Television sales expand dramatically

Transistors used in portable radios and calculators

Social conformity

McCarthyism

Brown v. Board of Education desegregated public schools

Military spending shifts to nuclear deterrents

Small Business Administration created

The Organization Man

Union membership peaks

The AFL merges with the CIO: 15 million members

Cold war escalates

Korean War forces another mobilization effort

1960s

Baby boom tapers off

Emigration from Asia and Latin America surges

Man walks on the moon

Color TV market grows

Microchips expand possibilities in electronics industry

Integrated circuit boards replace transistor technology

First ATM installed

Civil rights movements gain strength

Antiwar sentiment divides electorate

FDA approves oral contraceptive pill

Great Society

Consumer and environmental protection movements strengthen

Closing merger loophole opens door for conglomerate business model

Factory automation slashes jobs

Civil Rights Act

Equal Pay Act

Unions concentrated in big businesses

Formation of United Farm Workers union

Cold war continues to build

Bay of Pigs invasion; Cuban Missile Crisis

Vietnam War escalates

1970s

Urban blight

Rust Belt

Beginning of biotech industry

Fiber-optic wire

Pong (first video game)

UPC bar code

Supercomputer

National Organization for Women mobilizes for Equal Rights Amendment

Roe v. Wade legalizes abortion

Social discord con ues over Vietnam and civil rights

Watergate scanda undermines faith authority

Deregulation of o and airline indust

New energy polic and programs

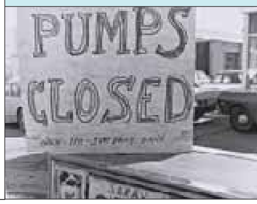
Price controls

Wage controls

OSHA created

Service economy expands

Women enter the workforce in large numbers



OPEC oil crisis

Vietnam War ends

Iran hostage crisis

Imports outpace exports

THE 20TH CENTURY Zeitgeist

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1980s

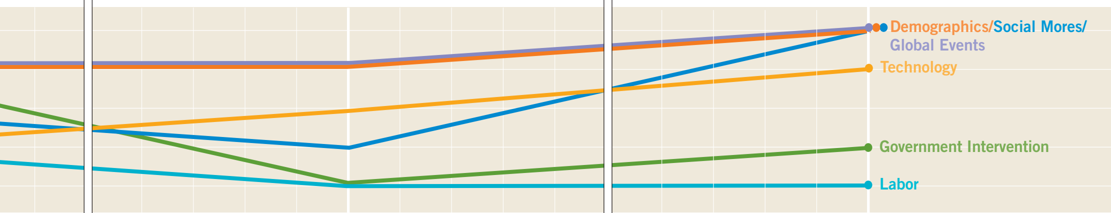
Global competition; deregulation; TQM; growing national debt; social conservatism; decline of labor; continued shift to service economy; streamlined business processes

E Reginald Lewis (above), TLC Group, buys Beatrice Foods in the largest ever leveraged buyout of an offshore company. **M** Max De Pree restructures Herman Miller with a unique focus on creative design. **L** Lee Iacocca, with massive government assistance, pulls off the turnaround of Chrysler.

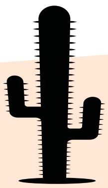
1990s

Globalization; diversity in workforce; reengineering; booming economy; massive immigration; Internet opportunities

E Meg Whitman (above), eBay, builds the fledgling Internet retail model into a vibrant and passionately loyal community. **M** Alfred Zeien guides Gillette through large-scale product development efforts and targeted acquisitions. **L** Lou Gerstner oversees IBM's turnaround from a manufacturer to a systems integrator and e-business innovator.



Population migrates to West and Southwest



Immigration tops 9 million (largest number since first decade)

Baby boomers age

Hispanics become fastest-growing minority

Pop: 250–281 million

Software industry booms

PC use expands in scale and scope

Space shuttle

Boom in connectivity

Cloning, stem cell research

DVDs

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Moral Majority

"Me" generation

Income gap widens dramatically

AIDS

Internet "irrational exuberance"

Antigovernment sentiment: Waco standoff; Oklahoma City bombing

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Reaganomics

Heavy defense and deficit spending

Savings and Loan bailout

Breakup of AT&T

Family and Medical Leave Act

Americans with Disabilities Act

Welfare reform

Antitrust action initiated against Microsoft

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Air traffic controllers' union dismantled

Union representation drops

Information technology redistributes job functions

Reengineering

Record high employment

Service sector outpaces manufacturing in new job creation

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Berlin wall falls

End of cold war

Iran-Contra Affair

USSR dismantled; ethnic conflicts exposed

Gulf War: real-time TV coverage

Asian financial crisis

NAFTA enacted

European Union forms

A NEW Century

How will business leadership emerge in the new millennium? What challenges will we face for the rest of the decade? The last five years have provided some insight into the complexities, challenges, and opportunities for emerging entrepreneurs, managers, and leaders.

Much has changed since the 1990s. Celebrity and hype have been replaced with an emphasis on competence and results. Execution has dethroned vision. And consumer skepticism has overshadowed awe and unfiltered acceptance. In the post-1990s, more attention is being paid to board governance, CEO compensation, reported financial results, and stock option grants. Business schools are reevaluating their curricula, adding new courses on corporate accountability, ethical decision making, law, and board governance.

Not since the scandals of the 1980s have business executives come under so much legal and public scrutiny. Still, Sarbanes-Oxley notwithstanding, the probusiness George W. Bush administration has generally resisted the urge to introduce and enforce greater levels of oversight, leaving it to the business community to self-regulate in many areas and deal with its own mess. Corporations have a short window of opportunity to rise to the occasion. History has shown that if business executives do not take any tangible and meaningful action voluntarily, regulation is likely to snap back with thunderous force and dramatically alter the opportunity structure for business.

While the federal government may be disposed to monitor business somewhat less aggressively than it has in the past, the country has been anything but reticent on the world stage. The war on terror, nuclear proliferation in developing countries, and the festering civil conflicts throughout the Middle East and Africa have heightened the already sensitive and precarious position of the United States in the world. Business executives trying to operate on the global stage must contend with increasing levels of uncertainty and instability. Nevertheless, the long-anticipated opening of the Chinese market might very well provide a new base for American business growth and prosperity.

Computer technology, which was the basis for much of the innovation over the past two decades, will undoubtedly continue to be refined, particularly as advances in wireless communications, data integration, and graphics transfer come to market. Though investments in technology have fallen off precipitously since the Internet implosion, there has been a renewed focus on productive technology – technology with a clear purpose and bottom-line rationale. Technology in the new century will most likely become the domain of managers and leaders rather than entrepreneurs, and their ability to harness its power and capitalize on the latent opportunity of the Internet will set them apart from their peers.

As the baby boom generation moves into its golden years, even greater importance and emphasis will be placed on medical science. Biotechnology, which has yet to deliver on its oft-heralded promises, may be on the cusp of new breakthroughs. Still, the road to discovery will be arduous; social mores have become more conservative, and the new century has already borne witness to contentious debates over research involving stem cells, frozen embryos, and cloning. It may be that, for now, opportunities in this field, too, are best suited to managers and leaders rather than to the entrepreneurs who have done the initial work, as navigating the controversy will require vision and a deft negotiator's touch.

Labor continues to struggle as companies try to grapple with the recession that followed the collapse of the Internet bubble and the devastation brought forth in the wake of September 11. The airline, travel, and hospitality industries have suffered considerably, causing a ripple effect through a host of other businesses – especially in the manufacturing sector – that is swelling the ranks of both multiple-job holders and the underemployed. Outsourcing, which has displaced thousands of jobs, has become the new strategic mantra for companies attempting to retain or regain their competitiveness on the global stage. And of course the workplace is facing a dramatic shift as baby boomers approach retirement age and companies risk losing vast reserves of knowledge and experience.

opportunities for many large companies to, like Caterpillar, gain in scale by capitalizing on the European recovery and expanding globally. Institutions like the World Bank and the International Monetary Fund created some financial stability, and the cold war kept the global political environment stable, if rigid. Expats enjoyed status in their host countries, perceived as bringing American prosperity and products to the old world. Because the United States controlled such a large portion of the world's GDP, it was a comfortable time for American businesses. But manufacturers were dealt a blow in the 1970s, with the oil crisis and the rise of the Japanese automobile and electronics industries. Companies were forced to focus more closely on processes and quality even as they searched for alternative forms of fuel. As the century drew to a close, communications technologies made truly global competition a reality, and many businesses were jarred out of their complacency and into an international mind-set. For some businesses, though, the process was painfully slow – it took the recession that followed the 1987 stock market drop, and a loss of both global and domestic market share, to stimulate action.

The 1920s saw a return to laissez-faire governing, as a nation newly out of war wanted freedom and adventure.

Demographics

For most of the twentieth century, the U.S. population grew apace, driven by periodic spikes in both domestic family expansion and immigration.

During the population explosion that started in the late 1940s and continued through the early 1960s, families began to spread out, and the first suburbs were born, creating a host of opportunities for new businesses, for those perceptive enough to recognize them. Despite the ongoing population migration, for instance, the accepted wisdom of the time was that shopping centers couldn't survive outside city limits. Edward J. DeBartolo, Sr., a founder in the entrepreneur mold, challenged the theory when he built a 23-store plaza – what today is called a strip mall – in a suburb of his hometown, Youngstown, Ohio, in the late 1940s. Onlookers were skeptical, but it was an almost instant success. Moreover, it wasn't long before his "country" shopping center was joined by medical offices and other service businesses. DeBartolo, who had served in the war evaluating terrain for troop maneuvers and other military actions, put his topography skills to use to grow the business rapidly, flying over the highways and byways of the Midwest to choose his next retail locations. (Sears nimbly followed Americans from farms to cities to suburbs as DeBartolo had done but subsequently failed utterly to catch the migration of economic activity to the exurban Sunbelt in the 1980s and 1990s, leaving Wal-Mart with open territory in which to grow.)

Alonzo G. Decker, Jr., son of one of the founders of Black & Decker, was one leader who took advantage of wartime and postwar demographic shifts to breathe new life into a seemingly mature product. The tool of choice for Rosie the Riveter, the Black & Decker drill proved popular with women on the factory line – so much so that many drills were going home in lunch baskets, and defense contractors had to keep reordering them. At war's end, the company added a consumer products line, an enormously profitable move as the suburban revolution brought with it a new do-it-yourself spirit.

Demographic shifts affect not just the market but the workplace. Over the century, employers had to learn to contend with an ever more diverse employee population, as well as totally new demands for work/family balance. During the 1970s, the face of American business began to change dramatically as, once again, droves of women entered the labor force and businesses became more racially integrated. The growing diversity of the workforce in the 1980s and 1990s reflected the changing mix of immigration. As a result of the huge waves of emigration from Latin America during that period, Hispanics now represent the fastest-growing and largest minority population segment in the United States.

The aging baby boom generation is also adding a new level of complexity and opportunity for businesses, especially as many individuals choose to forgo early retirement to pursue a second (or third or fourth) career. Tapping into this wellspring of knowledge and experience may very well prove to be a competitive advantage for savvy executives in this new decade.

Social Mores

Of all the contextual factors, social mores are the most cyclical, and the swings can be dramatic. To manage this factor, therefore, business executives need to be at their most adaptable and flexible.

When social mores become more liberal, a host of business opportunities emerge to fulfill new needs and desires. This occurred on a large scale in the Roaring Twenties when, with the burden of war past, people shed their inhibitions and pursued indulgences at all costs. It was a time of irrationality, excess, and unprecedented freedom. The stock market was exploding, business opportunities seemed limitless, and credit was both cheap and readily accessible. The fads of the times reflected the carefree mood: nudist colonies, dance marathons, flagpole sitting. Having contracted through the war effort, consumer spending flourished in the 1920s, and business executives were all too ready to provide outlets for the public's desires. The products and services they introduced–from customizable automobiles (no longer just the black Ford Model T) to branded linens (Cannon towels) to talking movies (Warner Bros.'

Our Methodology

Each of the candidates included in our pool of 1,000 business executives had to have been a founder or CEO of a U.S.-based company for at least five years between 1900 and 2000. As such, any CEO whose tenure began after 1996 was excluded from this survey. (In the earlier decades, when "CEO" was not a common term, we chose to use business historian Richard Tedlow's approach to identifying the key executive by designating as such the primary, or perhaps the sole, individual in a firm who was responsible for setting direction, allocating resources, and monitoring company progress.)

Beyond the five-year tenure requirement, business executives had to have demonstrated at least four consecutive years of top financial performance, or they had to have led a company whose product or service changed the way Americans lived, worked, or interacted with one another in the twentieth century. In view of the lack of easily accessible and complete financial information spanning the entire century (especially before 1925), we used a multitiered financial analysis approach to judging top performance–one or the other of Tobin's Q (that is, the ratio of a company's market to book value); return-on-asset ratios; and market value appreciation.

Though dominated by *Fortune* 100–type company executives, the list endeavors to capture the impact of factors other than company size. As such, it includes people outside the traditional business realm. But from the thousands and thousands of individuals who headed large public and small private enterprises alike during the last 100 years, we have sought to identify only that small fraction that sits at the pinnacle of success–leaders whose legacies have truly stood the test of time.

The process of classifying each of the 1,000 business executives into one of the three archetypes (entrepreneur, manager, or leader) involved a review of data from a number of sources, including historical biographies, company documents, press coverage, and other archival material. In reviewing these materials, we focused specifically on how business executives approached their organization at the beginning of their tenure as founder or CEO. Did they forge something new? Did they derive maximum potential from a defined business opportunity? Or did they transform a business? While we have tried to minimize the inevitable subjectivity of this process, we recognize that the classifications are based on our personal judgment and our interpretation of the available secondary-source information.

A full listing of the 1,000 business leaders in our study can be found on the Web site of the Leadership Initiative of Harvard Business School at www.hbs.edu/leadership.

The Jazz Singer) to frozen foods (courtesy of Clarence Birdseye) – were designed to ease the way Americans lived.

The Depression, which followed, ushered in an almost complete reversal of social mores – a harkening back to traditions and conservative values. People passed their time in less whimsical ways: collecting stamps, listening to radio soap operas, and playing board games like Monopoly. Small, affordable luxuries replaced automobiles and other large purchases.

Of all the contextual factors, social mores are the most cyclical, and the swings can be dramatic.

The social freedom of the 1920s reemerged on a much larger scale in the 1960s and 1970s, creating myriad new opportunities – particularly within the fashion, music, and media industries – for those willing to address the changing social conditions.

And in the 1990s, the opportunities for business were virtually limitless: The free flow of capital and the irrational exuberance of a get-rich-quick society fueled a sensibility that made a $10,000 backyard grill seem like as good an idea as a cure for homotosis did in the 1920s.

Technology

Technology has had a strong influence on business executives and the companies they launched and led in every decade of the twentieth century.

The interconnection of the U.S. railways, for example, gave rise in the 1900s to the first large corporations, which could now expand to a national scale. The first national brands began to emerge, as products could be more efficiently delivered across great distances. At the same time, a national advertising industry was born, as newspapers and magazines such as Cyrus Curtis's *Ladies' Home Journal* and *Saturday Evening Post* could reach farther afield. Subsequent commercialization of technologies developed during World War II also created an enormous set of opportunities for business. The 1940s saw the greatest leaps in productivity of any decade. Almost overnight, under the banner of service to country, companies were transformed from low-volume, inefficient entities into highly efficient, standardized production facilities.

Yet technology's impact was not always immediate or obvious; it often took a visionary business executive to understand and then fulfill the potential of a specific development. In many cases, those individuals were entrepreneurs rather than leaders or managers. But they were not necessarily the same people who could then take a resultant business forward and manage it in a sustainable way. Juan Trippe, for instance, an entrepreneur who pioneered international commercial air travel and turned Pan American World Airways into a powerhouse in the 1920s, undermined the long-term success of his airline with his arrogance and heavy-handed approach to management.

Visa International's Dee Ward Hock, another entrepreneur, was an exception, although he was somewhat disdainful of corporate America and several times in his career found himself out of a job for his failure to play by the rules. While at the National Bank of Commerce, Hock had a vision that the newly emerging digital technology would transform the banking business. Long before that became reality, he imagined paperless and instantaneous transactions, 24 hours a day, seven days a week. He was responsible for the first computerized system for the electronic transfer of data between banks, and he pioneered the international magnetic strip, building bridges between domestic and foreign banking operations. He also persuaded a reluctant Bank of America to cede control over the BankAmericard program to a new independent membership organization, National

BankAmericard Incorporated (the international equivalent of which was later renamed Visa), and convinced all 2,700 banks licensed to issue cards to join him. In the end, his tyrannical management style was counterbalanced by great personal charisma and the strength of his technological vision.

Labor

Through much of the twentieth century, the role and influence of labor grew steadily, if in fits and starts. Much like government intervention, the labor movement cycled through periods of progress and retrenchment that were tied to the country's overall levels of economic prosperity and opportunity.

In the first three decades, power was weighted heavily on the side of business, though employees gained some bargaining power during World War I. The business executives of the first decade were driven, opportunistic, and innovative. They built companies that often had a far-reaching impact on the way people lived, but they were, for the most part, less concerned about the way people worked. And during the Red Scare of the 1910s and 1920s–which was fueled by wartime anxieties and the Russian Revolution–unions were viewed as havens for radical foreign-born residents and communists. As such, they were viciously attacked as anti-American.

Labor's first real test and opportunity came in the 1930s, during the Depression. Buttressed by a prolabor government, unions began to win victories such as the first federal minimum wage, despite a double-digit unemployment rate. The strength of the union movement would reach its second apex in the 1950s, in tandem with the public's interest in equal opportunity and improved working conditions. So critical was the ability to deal with unions in the 1960s that Harvard Business School made a labor relations course mandatory for all students.

But the rate of union organization has been on a steady decline since its heyday in the 1950s and early 1960s, as manufacturing sectors have increasingly automated and American industry has moved rapidly into a service-based economy. During the last two decades of the century, almost all new job growth was concentrated in the service sector–and Harvard no longer even teaches the subject.

Though relatively few business executives in the twentieth century stood out for their treatment of workers, the ones who did were a breed apart – not just for their concern for employees but for the fact that, in many cases, there was no mandate for it. Instead, they chose to manage this contextual factor before it managed them. Henry Ford caused an uproar when, in 1914, he reduced the workweek and doubled wages, becoming the first employer to give workers a reasonable share of revenues. That was not an altruistic gesture; well before his time, Ford reasoned that a highly motivated workforce would be more productive and that turnover would be drastically reduced. People in the labor movement were actually suspicious of the move, largely because they feared that other organizations would shorten the workweek as well, effectively decreasing hourly workers' pay.

The few business executives who stood out for their treatment of workers were a breed apart. They chose to manage this contextual factor before it managed them.

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What does all this mean for the executives of today? The central lesson we can take from business history is that context matters. The ability to understand the zeitgeist and pursue the unique opportunities it presents for each company is what separates the truly great from the merely competent.

Executives at the beginning of the new millennium face the potential for increased regulation, reticent consumers, constant global uncertainty, and vast demographic changes. The euphoria and delirium of the 1990s have been replaced with caution, pragmatism, and conservatism. Given these challenges, it is tempting to try to find the next iconic CEO – the next Walt Disney, say, or Henry Ford. But that impulse causes us to overlook the role that context played in creating Disney's and Ford's successes. There's no knowing how Disney would have dealt with today's hypermedia environment or whether Ford's steadfast and uncompromising focus on productivity would resonate with today's more empowered labor force. Even Jack Welch would find that the business world has changed since he left GE: Heady growth has given way to recession, a halting recovery, and (despite a probusiness administration) a tighter regulatory climate in the wake of corporate scandals.

So if your organization is seeking to fill a key leadership position, you need to move past a candidate's record of success and understand the contextual environment behind that record–and how that influences the context your company currently faces. Consider global events and impending regulations and the role technology may play in future success. And bear your company's goals in mind. If the business is attempting to maximize growth, a manager may be the best choice for CEO. In times of crisis or decline, a leader may be needed. Boards should refrain from recruiting a celebrity CEO if that person's strengths are not properly aligned with the direction in which the company is going or needs to go. Instead, we can learn from our predecessors the value of appreciating and understanding the conditions that influence the business landscape, which in turn can help us choose the right people for the time.

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In companies where leadership development really works, it is not a stand-alone activity. It is a core process of the business, dyed into its very fabric.

LEIGH WELLS

Growing Talent as if Your Business Depended on It

by Jeffrey M. Cohn, Rakesh Khurana, and Laura Reeves

In the thirteenth century, it took the College of Cardinals almost three years to anoint a successor to Pope Clement IV. To break the stalemate, one of history's most bitter organizational deadlocks, church officials began limiting the food and drink they provided the voting cardinals, eventually giving them just bread and water. Fortunately, today's cardinals don't seem to need such harsh incentives: It took them less than a week to choose Benedict XVI.

When it comes to succession planning (and, by extension, leadership development) in the business world, corporate boards could do with a similar sense of urgency – though we wouldn't necessarily advocate starving them into it. Traditionally, boards have left these tasks very much up to their CEOs and human resources departments. There's a simple reason why directors pay so little attention to these activities: They don't perceive that a lack of leadership development in a company poses the same kind of threat that accounting blunders or missed earnings do.

That's a shortsighted view. Companies whose boards and senior executives fail to prioritize succession planning and leadership development end up either experiencing a steady attrition in talent or retaining people with outdated skills. Such firms become extremely vulnerable when they have to cope with inevitable organizational upheavals – integrating an acquired company with a different operating style and culture, for instance, or reexamining basic operating assumptions when a competitor with a leaner cost structure emerges. In situations like these, businesses need to have the right people in the right roles to survive. But if leadership development has not been a primary focus for CEOs, senior management teams, and boards, their organizations will be more likely to make wrong decisions. Firms may be forced to promote untested, possibly unqualified, junior managers. Or they might have to look outside for executives, who could then find it difficult to adjust to their new companies and cultures.

Some companies, however, have not only recognized the importance of including succession planning and leadership development on the board's agenda but have also taken steps to ensure that those items get on the docket. Over the past three years, we have undertaken extensive fieldwork with many of these companies, conducting multiple interviews and analyzing their varied approaches to successful leadership planning and development. We have found that the best of their programs all share some common attributes. They are not stand-alone, ad hoc activities coordinated by the human resources department; their development initiatives are embedded in the very fabric of the business. From the board of directors on down, senior executives are deeply involved, and line managers are evaluated and promoted expressly for their contributions to the organizationwide effort.

By engaging managers and the board in this way, a company can align its leadership development processes with its strategic priorities. The company can also build a clear and attractive identity; its employees perceive that leadership development processes are what they are declared to be. Such coherence, identity, and authenticity, in turn, make it easier for the company to attract the future leaders it needs.

In the following pages, we'll describe what some of the companies we've been observing are doing to create strong, effective succession-planning and leadership development programs. First, let's take a closer look at where many companies go wrong when they set out to grow great managers.

Every Which Way

Tyson Foods, a family-controlled company based in Springdale, Arkansas, provides a good example of where companies can fall short in leadership development. Every time CEO John Tyson, grandson of the company founder with the same name, picked up a journal, newspaper, or business magazine, he saw yet another story of how iconic companies like General Electric set the standard in churning out future leaders, and he was frustrated in his ambition to leave a similar legacy.

It was a big ambition. Despite Tyson's size after its merger with IBP in 2001 – the company's market cap was around $25 billion, putting it well into the *Fortune* 100 – it had, in its 70 years, invested very little in leadership development. And the organization had no ingrained systems, tools, or processes to ensure a steady supply of qualified talent. When he took the reins in 2000, Tyson had made it his goal to change all that, and the company, over the next two years, experimented with several leadership development initiatives.

These experiments all followed a similar course. Typically, Tyson or a member of his senior management team would read an article or hear about an interesting initiative at another company, such as a mentoring program. Then he or one of his colleagues would chat with Ken Kimbro, the senior vice president of corporate HR, about the possibility of implementing a comparable program at Tyson (the Tyson Mentor Program, for instance). A few weeks later, a Tyson version of the initiative would be discussed in internal focus groups, and pilots would be developed.

One time, John Tyson was invited by the CEO of a prominent company to see how that organization monitored its emerging leaders' progress. When he returned to the offices, he cleared out an entire conference room and plas-

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tered on its walls pictures of Tyson's rising-star managers, with descriptions of their job experiences, educational backgrounds, strengths and weaknesses, and development paths. Another time, Tyson personally approved a budget to send the company's high-potential managers to leadership retreats on a remote Rio Grande ranch. The managers worked to solve actual business challenges facing the company, reflected on their personal leadership styles, and broadened their spheres of influence by meeting other high-potentials within the company. For its part, Tyson's HR group found it hard to keep up with the rush of programs.

Despite John Tyson's efforts and the popularity of many of his initiatives, the company's talent pipeline was still not producing enough quality leaders, and by the summer of 2002, the CEO realized that his ad hoc approach to leadership development was not working. He formed a senior executive task force to look into the problem. The team included himself, his direct reports, and a small group of external succession-planning experts, who were there to ensure objectivity and high standards and to help facilitate buy in.

The task force members took nothing for granted. They sat down with a blank sheet of paper and mapped out their ideal leadership development system for Tyson. The blueprint they came up with integrated succession planning and leadership development, made sure that promising leaders would be well versed in all aspects of the company's business, and put the accountability for succession planning and leadership development squarely on the shoulders of John Tyson's direct reports. "Leaders at all levels were either in or out," Tyson recalled. They couldn't waffle about contributing their time and effort to the new talent development system; they couldn't "protect" talent, hoard resources, or declare themselves immune from succession planning, he said.

An Integrated Approach

Succession planning was the critical starting point for Tyson's new program – as it was for all the leading-edge companies we observed. Succession planning should drive leadership development at a company; that sounds reasonable enough but is hard for many managers to accept. That's because many people, from the CEO on down, consider the word "succession" taboo. Planning your exit is like scheduling your own funeral; it evokes fears and emotions long hidden under layers of defense mechanisms and imperceptible habits. Perversely, the desire to avoid this issue is strongest in the most successful CEOs. Their standard operating procedure is to always look for the next mountain to climb, not to step down from the mountain and look for a replacement.

We recently conducted a leadership and talent management survey with 20 CEOs in large corporations, representing a variety of industries and locations. Although all 20 executives agreed that having the right talent in the right roles was critical for their companies' success and that a talent management program was important for developing effective leaders, almost half had no succession plans for VPs and above. Only one-fourth of the CEOs had talent pipelines that extended at least three managerial levels below them.

Many executives believe that leadership development is a job for the HR department. This may be the single biggest misconception they can have.

Meanwhile, those CEOs who are effective at building strong leadership teams tend not to have any reservations about succession; they embrace succession planning and integrate it closely with the company's management-training and development programs. When Orin Smith became president and CEO of Starbucks in 2000, for instance, he made it a top priority to plan his own succession. He established an exit date – in 2005, at age 62 – which helped him push his business agenda. Ultimately, Smith's actions focused attention on emerging leaders throughout the company.

Two years into the job, Smith knew that the internal contenders would still be too unseasoned for the CEO position by his exit date. Starbucks was under pressure to grow its leaders as fast as the business was expanding, from approximately 8,500 global retail locations to about 30,000 sites, half of them outside the United States. Because of his early commitment to succession planning, Smith knew enough about the internal CEO candidates – and decided on an outsider, Jim Donald, as a promising successor. Donald had an established record in supermarket expansion as chairman, president, and CEO of Pathmark, a 143-unit regional grocery chain. He was recruited to Starbucks specifically to become the next CEO.

Starbucks gave Donald 90 days of dedicated immersion. He worked in the stores to understand the customer experience, and he observed firsthand the operations in the coffee-roasting plants. Then Donald was made responsible for North American operations, Starbucks's largest business. Progressively, he became accountable for more pieces of the company. One of his first major tests was to develop his own succession plan and to execute against it in order to move to a larger role himself. Smith and Starbucks's board members paid close attention to Donald's ability to assess and develop a talented leader who could take over Donald's assignments and provide the right fit with the leadership team.

As Starbucks's experience shows, CEOs need to embrace succession planning to achieve their own legacies and the financial success of the organizations they leave behind. By integrating succession planning and talent development, CEOs can alert the rising stars in their companies to potential leadership opportunities well in advance; and they and their boards can more accurately assess their bench strength. When the process runs smoothly, boards have a strong sense of whether a company's incumbent leadership team will be able to execute important strategic initiatives in the future. The company also gains because of minimal disruption to the business, shareholder confidence and positive analyst ratings, and reduced costs of external hiring for senior executive positions.

The consumer products company S.C. Johnson & Son also uses an integrated approach. Its performance appraisal program identifies the rising stars in the company's hard-to-fill management and technical positions, evaluates them through 360-degree feedback, and determines potential leaders' readiness for promotions. The well-oiled program also includes processes to identify "safe positions" – crucial jobs with reinforced retention strategies and ready replacements. The tight integration of succession planning with talent development has paid off: The typical manager at S.C. Johnson has been on the job for nearly 15 years, and nine out of every ten positions are filled internally.

At Tyson, just a few years after the formation of the initial senior management task force on leadership development, all of John Tyson's direct reports are fully committed to the succession-planning process. In what they call the "talent alignment and optimization" initiative, or TAO, leaders from across the organization try to strike a balance between the supply of talent (rising stars) and the demand for talent (critical positions). Right after Tyson's strategic review process, which is held semiannually, the company's senior management team holds open and constructive discussions about the company's high-potential managers to ensure that the organization nurtures in them the skills necessary to execute current strategy while also preparing them to take on larger, more complex roles. And to make sure that rising stars are challenged and achieve long-term success at Tyson, the senior leaders work closely with HR to devise development paths that consider multiple career possibilities for high-potentials, three to five years out.

A Line and Board Responsibility

Many executives believe that leadership development is a job for the HR department. This may be the single biggest misconception they can have. As corporations have broken down work into manageable activities and then consolidated capabilities into areas of expertise, employee-related activities have typically fallen into HR's domain. The prevailing wisdom has been that if HR took care of those often intangible "soft" issues, line managers and executives would be free to focus on "hard" business issues and client interaction.

But at companies that are good at growing leaders, operating managers, not HR executives, are at the front line of planning and development. In fact, many senior executives now hold their line managers directly responsible for these activities. In this worldview, it is part of the line manager's job to recognize his subordinates' developmental needs, to help them cultivate new skills, and to provide them opportunities for professional development and personal growth. Managers must do this even if it means nudging their rising stars into new functional areas or business units. They must mentor emerging leaders, from their own and other departments, passing on important knowledge and providing helpful evaluations and feedback. The operating managers' own evaluations, development plans, and promotions, in turn, depend on how successfully they nurture their subordinates.

Line managers are held accountable not only for aiding in the development of individual star managers but also for helping senior executives and HR experts define and create a balanced leadership development system for the entire company. They must tackle questions such as "How will we balance the need to nurture future leaders with the pressures to eliminate redundant activities?" and "How should we encourage burgeoning leaders to take risks and innovate while maintaining our focus on short-term operations and profit goals?" (Firms shouldn't have to forgo their quarterly targets for the sake of developing high-potential managers.) Practical solutions to these and other challenges don't magically appear in HR conference rooms; they come from the line managers.

If line managers are held responsible for executing the talent development initiatives, the board should assume high-level ownership of the overall system. Traditionally, however, most boards have focused on CEO succession, giving short shrift to systematic leadership development. After all, there was little risk of a calamity occurring if the board *didn't* monitor the leadership pipeline. There was also little chance that the board members would be held personally accountable for the resulting weak talent pool. In A.T. Kearney's 2004 survey on the effectiveness of corporate governance, participating board directors universally acknowledged the importance of leadership development and succession planning. Yet only one in four respondents believed the board of directors was very good at these activities.

The CEOs of savvy companies realize that their boards are well placed to help them plan for new leadership to take the reins. Detached from day-to-day operations and biases, board directors can objectively look at the company's leadership development systems and bench strength. At Starbucks, for example, the board oversees a formalized succession-planning process for 2,500 positions. Its goal is to make sure the company always has the right people with the right values in the right places at the right times. As Orin Smith explains: "The values and behaviors of the individuals you choose go through the organization like a rifle shot; they can be felt at the line level within months. We can't afford to hire or promote people with the wrong values. It's a path to mediocrity."

A Leadership Development Checklist

To grow great leaders, companies should do the following:

- ❑ Launch a formal, high-level succession-planning conference for senior executives facilitated by corporate HR and outside experts; outline the leadership development process; and cascade it through the company.
- ❑ Create leadership development programs that fill holes in your company's talent portfolio to ensure a deep bench for critical positions in the firm.
- ❑ Let HR create tools and facilitate their use, but require the business units to own the leadership development activities.
- ❑ Have the board oversee all leadership development initiatives, and insist on continual communication by CEOs and other senior managers on their commitment to leadership development.
- ❑ Reshuffle rising stars throughout the company, taking care that A players are exchanged for other A players.
- ❑ Make sure that your leadership development program is aligned with your strategy, reinforces your company's brand, and has support from your employees.

Some boards are becoming aggressive in getting to know their companies' rising stars. Pittsburgh-based Mellon Financial, a 136-year-old financial institution, had long required the heads of its major business units to give presentations to the board. But in 2002, CEO Marty McGuinn saw potential value in having the company's rising stars make these presentations. Now, Mellon's unit managers accompany the rising stars to the board meetings. They answer questions when absolutely necessary, but the future leaders get the floor. As a result, the board can assess for itself the efficacy of the company's leadership pipeline and hear about corporate initiatives from the people who are actually "doing things." Meanwhile, the rising stars gain direct access to the board, gleaning new perspectives and wisdom as a result.

A Shared Resource

No leadership development program can be effective unless it provides mechanisms for exposing future leaders to the full range of the company's operations. By introducing their rising stars to new business units, geographies, and business challenges (managing a turnaround, for instance, or launching a new product in a foreign market), companies can help these executive-track employees broaden their power bases and spheres of influence while giving them a sense of how the different parts of the organization work together to execute the overall corporate strategy.

It's a reasonable goal but hard to accomplish. Why would the supervisor of a brilliant junior manager share that talent with another unit, knowing that productivity and profitability in his own unit might suffer? And what if the rising star misinterprets the transfer to another business unit (with perhaps fewer people and less revenue) as a negative gesture and considers leaving the company?

Tyson Foods faced just such challenges. Under the company's revamped leadership development program, business unit heads were obliged to share their highest-performing managers with other business units so these rising stars could gain cross-functional experience. Initially, it was hard for the unit leaders to do so, after years of hoarding talent and building personal fiefdoms.

To encourage sharing, John Tyson holds the business unit and functional leaders personally accountable for rotating emerging leaders through different parts of the company. Cross-functional development plans–essentially, the road maps for high-potentials' assignments to Tyson's different businesses–are clearly articulated at the succession conferences described earlier. These plans are monitored by Tyson and the vice president of corporate HR. Moreover, the CEO assures unit leaders that they will receive equally qualified managers in exchange for their outgoing ones. The company's talent-assessment practices have been refined so that the right qualities and skills are being measured across all businesses and functions. That is, Tyson realized that a manager's success in one area of the business was by no means a guarantee of success in another. So the company carefully retrofitted its performance assessment tools to measure the competencies, values, and skills that would be necessary for any future positions that a manager might pursue. The results are objective, so business unit leaders are exchanging "apples for apples," not simply sending B players to other units and keeping their fingers crossed for a star in return. Tyson has also adopted formal performance-management review policies that link senior executive compensation to the movement and development of emerging leaders.

Mellon's Marty McGuinn has a similar philosophy. His strikingly simple but powerful mantra is "Connect the dots." That is, for Mellon to create a leadership development system that competitors cannot match, all its managers must map their discrete leadership development activities and processes to a coherent, companywide system. Managers in dramatically different functions, locations, and operating units are expected to share knowledge and talent that they think would enhance the whole system. (The sidebar "A Crash Course" describes how Mellon built its integrated leadership development system.)

Aligned, Attractive, and Authentic

As Tyson learned, an effective talent development program is more than just a portfolio of off-the-shelf components such as competency-profiling tools, 360-degree feedback, and online training. It is a carefully thought-out system that you have to develop for yourself.

As a CEO assessing a new program, the first question you need to ask yourself is whether the constituent parts of your program combine to enable the company to compete more effectively. A company that operates in a highly innovative environment, for example, needs to know whether its leadership development system actually enables it to produce better innovations more quickly than its competitors. If the system rewards individuals who produce the most predictable rather than the most innovative results, it is misaligned.

Misalignment usually occurs when companies have developed, tested, and rolled out initiatives ad hoc, without any high-level planning or a defined time horizon. The first iteration of Tyson's mentoring program, for instance, was barely linked to the company's existing leadership development activities and strategic goals. Little thought went into the matching process; rising stars weren't necessarily assigned mentors in the businesses and functions that could have helped them the most, so significant developmental opportunities were lost.

Misalignment can also occur when a company's 360-degree feedback and performance-management instruments measure (and reward) behaviors that are inconsistent with the company's values and culture. It may be counterproductive, for instance, to reward managers for their skills in acquiring new customers if the company's overall strategy is to focus on existing customers by cross selling and offering bundled products and services.

The second question you need to ask is whether your leadership development system reinforces the perceptions you want people to have about the company. We've found that there is a direct relationship between a strongly defined leadership development program at a company and the types of job candidates the company attracts, external stakeholders' perceptions of the business, and employees' understanding of the firm's values and strategies. For example, Starbucks employees, all of whom are called "partners," are attracted to the job in part because of the company's talent identity. They want to be that cheerful, smiling-to-the-music person behind the counter who helps customers start the day out right with a *venti*

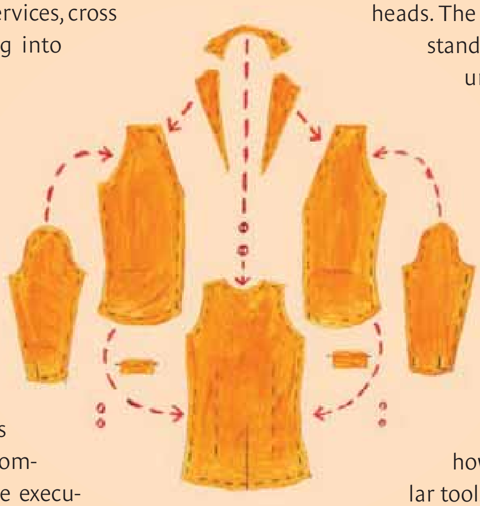
A Crash Course

Most of the companies we studied developed their leadership programs over time or at least were under relatively little pressure in terms of talent management. Mellon Financial, however, had to build a new system under extreme pressure to support senior management's efforts to transform the company.

By the late 1990s, the venerable organization comprised a wide range of businesses. The senior management team had articulated a business strategy that focused on high-growth opportunities and global expansion. Through the disposition of specific units, and through strategic acquisitions to build its asset management and corporate and institutional services businesses, senior management effectively transformed Mellon from a traditional commercial bank to a more focused financial services institution.

But CEO Marty McGuinn realized that the next generation of leaders would not be able to execute the new strategy without an enhanced set of competencies and a broader, more entrepreneurial mind-set, one that could include bundling products and services, cross selling to clients, and expanding into unproven global markets.

To meet this challenge, Mellon's HR department created an extensive leadership development program that was rolled out to the whole company. Mellon's senior management team was involved from the start. McGuinn and his team met frequently (in person and via e-mail) and conducted one-on-one discussions with emerging leaders at the company. Armed with these data, the executives helped Mellon's rising stars understand the competencies they would need and developed plans for them to acquire those skills.



But McGuinn and Mellon's human resources director knew that HR's tools for leadership development would not gain traction among managers if they were not owned and implemented by the business units. Mellon's managers had a reputation for being results driven and focused on achieving day-to-day goals. An HR-mandated mentoring program or 360-degree feedback assessment initiative, no matter how shiny and slick, might seem like a distraction to these people–and would ultimately be futile.

McGuinn, therefore, instituted a policy that leadership development tools would be created in formal centers of excellence consisting of three to six resident experts. The tools would then be offered to the business units through a specialized distribution network of human resources business partners (HRBP) – liaisons between the centers of excellence and the business unit heads. The HRBPs were charged with understanding the strategies of the business units and the competencies they wanted to develop and execute. The HRBPs would use that information to determine, in collaboration with the unit leaders, which leadership development tools to use. Because the units' strategies varied considerably across Mellon, McGuinn and HR granted the HRBPs wide latitude in their decisions about how, when, and why to use particular tools.

or a *grande.* The company's leadership development program reinforces this identity: Its hiring and promotion processes put equal weight on an employee's functional capabilities and his or her ability to fit in with the company's values and beliefs system. And to preserve the company's culture in this time of rapid growth, Starbucks has added a component to the program, called Leading from the Heart, which helps existing managers transmit Starbucks's customer-friendly (and brand-centric) ethos to new hires.

The third question you have to ask is whether your employees think the company's leadership programs are legitimate. They will take the program seriously only if they know these talent management elements will affect actual business decisions instead of just padding personnel folders. They must also believe that those individuals whom the system recruits, selects, and promotes are truly qualified for their positions and aren't just being rewarded for their political allegiances.

Companies need to address the issue of authenticity head-on. Senior executives at Mellon realized that some people might be skeptical about the company's new talent development initiatives: Many managers felt they were too busy dealing with day-to-day operations and client relations to take time off to attend the company's mentoring program. Recognizing this skepticism, HR included in the sessions case studies of mentoring relationships and how they helped to improve results on the job. (The sessions themselves are data driven and led by senior operating executives.) Specifically, the sessions demonstrate the positive correlation between the productive relationships a manager can have with his or her team members and the economic effectiveness of that group or division. Most executives find it a compelling proposition that, with help from the mentoring program, they can actively improve their employees' skills, increase people's commitment to work, boost information sharing, and create better-trained employees who are willing to accept greater responsibility.

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The companies that shared their stories and knowledge with us highlighted several critical aspects of leadership development – in particular, CEOs' awareness and acknowledgment of the importance of succession planning; boards' increased activity in system oversight; managers' refocused attention on people issues and processes; and HR's role in facilitating the entire organization's ownership of leadership development. As their experiences demonstrate, a leadership development program need not be a ragbag of training programs and benefits. Properly thought through, it can be a major part of a company's value proposition–one that competitors can't even understand, much less copy.

Our colleague Gianni Montezemolo passed away just before this article was published. We'd like to thank him for his contributions to this research.

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To order, see page 159.

"Sure it's expensive for a tow, but I'm the only tow truck in the living room."

P.C. VEY

Strategy at many companies is almost completely disconnected from execution. Establishing a dedicated unit to orchestrate both will help to bridge the divide.

THE OFFICE OF STRATEGY MANAGEMENT

by Robert S. Kaplan and David P. Norton

MOST COMPANIES HAVE AMBITIOUS PLANS for growth. Few ever realize them. In their book *Profit from the Core,* Chris Zook and James Allen report that between 1988 and 1998, seven out of eight companies in a global sample of 1,854 large corporations failed to achieve profitable growth. That is, these companies were unable to deliver 5.5% annual real growth in revenues and earnings while earning their cost of capital (a rather modest hurdle). Yet 90% of the companies in the study had developed detailed strategic plans with much higher targets.

Why is there such a persistent gap between ambition and performance? The gap arises, we believe, from a disconnect in most companies between strategy formulation and strategy execution. Our research reveals that, on average, 95% of a company's employees are unaware of, or do not understand, its strategy. If the employees who are closest to customers and who operate processes that create value are unaware of the strategy, they surely cannot help the organization implement it effectively.

It doesn't have to be like this. For the past 15 years, we have studied companies that have achieved performance breakthroughs by adopting the Balanced Scorecard and its associated tools to help them better communicate strategy to their employees and to guide and monitor the execution of that strategy. (For background on the Balanced Scorecard, see our book *The Strategy-Focused Organization,* Harvard Business School Press, 2000.)

Some companies, of course, have achieved better and longer-lasting improvements than others. The organizations that have managed to sustain their strategy focus have typically established a new unit at the corporate level to oversee all strategy related activities, an *office of strategy management* (OSM), as we call it.

This might appear to be nothing more than a new name for the familiar strategic planning unit. But the two are quite different. The typical planning function facilitates the annual strategic planning process but takes little or no leadership role in seeing that the strategy gets executed. The companies we studied, however, recognize that effective strategy execution requires communicating corporate strategy; ensuring that enterprise-level plans are translated into the plans of the various units and departments; executing strategic initiatives to deliver on the grand plan; and aligning employees' competency development plans, and their personal goals and incentives, with strategic objectives. What's more, they recognize that the

IAN WHADCOCK

company's strategy must be tested and adapted to stay abreast of the changing competition. The OSM becomes the central point for coordinating all these tasks. It does not do all the work, but it facilitates the processes so that strategy execution gets accomplished in an integrated fashion across the enterprise.

In the following pages, we will describe how the concept of the office of strategy management came into being and how it has helped companies align key management processes to strategy. Although the companies we have studied use the Balanced Scorecard as the framework for their strategy management systems, we believe that the lessons we draw are also applicable to companies that do not use the Balanced Scorecard.

Strategy Management: The New Support Function

The exhibit "The Old Strategy Calendar" depicts the strategy management schedule at a typical large company. The process starts about midway through the fiscal year, when the CEO and the executive team get together to clarify their strategic vision and update the strategy. Sometime afterward, similar processes take place at the business and functional units, led by unit heads and other senior executives. Toward the end of the third quarter, the finance function takes the baton, finalizing corporate and unit budgets. At the end of the year, the HR function conducts employees' annual performance reviews and orchestrates the setting of professional goals and development programs. Throughout the year, meanwhile, different teams and units have engaged in performance reviews, corporate communication, and knowledge sharing.

The problem with this approach is that the activities are carried out largely in isolation and without guidance from the enterprise strategy. This partition of responsibilities creates the gulf between an organization's strategy and its processes, systems, and people. Surveys that we conducted of HR and IT managers reveal that the strategies of fully 67% of those organizations are not aligned with business unit and corporate strategies; nor do HR and IT departmental plans support corporate or business-unit strategic initiatives. Budgeting is similarly disconnected: Some 60% of organizations do not link their financial budgets to strategic priorities. Incentives aren't aligned, either: The compensation packages of 70% of middle managers and more than 90% of frontline employees have no link to the success or failure of strategy implementation. Periodic management meetings, corporate communication, and knowledge management are similarly not focused on strategy execution.

What can companies do to change this state of affairs? The experience of the Chrysler Group first suggested to us that the answer lies in bringing all strategy-related activities into a single functional unit. After a string of innovative successes in the early 1990s, Chrysler had hit a dry spell. Performance problems were exacerbated by an economic downturn, rising costs, and encroaching imports, and by 2000, the company was staring at a projected deficit of more than $5 billion for the coming year. At this point, the parent company, DaimlerChrysler, appointed a new CEO, Dieter Zetsche, who introduced the Balanced Scorecard as part of a major change in strategy. The project was spearheaded by Bill Russo, vice president of business strategy, whose unit worked with Chrysler's executive team to translate the company's new strategy into a Balanced Scorecard. Russo's unit also served as trainer and consultant to help Chrysler's business and support units create local scorecards that were aligned with corporate objectives and customized to local operations. Once the design phase had been completed and scorecards had been cascaded throughout the company, the strategy group maintained responsibility for the data collection and reporting processes for the scorecards.

Up to this point, Chrysler's Balanced Scorecard project had followed a traditional course. Where Chrysler broke new ground was in the roles assumed by the strategy group. The group took the lead in preparing scorecard-related materials to communicate the strategy to the more than 90,000 employees. Russo began to brief Zetsche before each management meeting about issues that had been revealed through the scorecard reporting and that required management attention and action. In his capacity as a member of the executive team, Russo followed up after each meeting to make sure that the required items were communicated and acted upon. As a result of this proactive involvement in agenda setting and follow-up, the responsibilities of the business strategy function expanded to incorporate many new cross-enterprise strategy execution processes. Thus was born Chrysler's Office of Strategy Management – a unit currently employing some 13 full-time people who not only manage the company's strategy but also assist the business units in developing new products. Chrysler's new approach to strategy execution appears to have paid off handsomely. In 2004, despite a weak domestic automobile market, Chrysler successfully launched a series of exciting new cars and generated $1.2 billion in earnings.

The U.S. Army's Balanced Scorecard project produced an office of strategy management in much the same way. A central project team at the Pentagon headquarters, under the leadership of the Army chief of staff, developed

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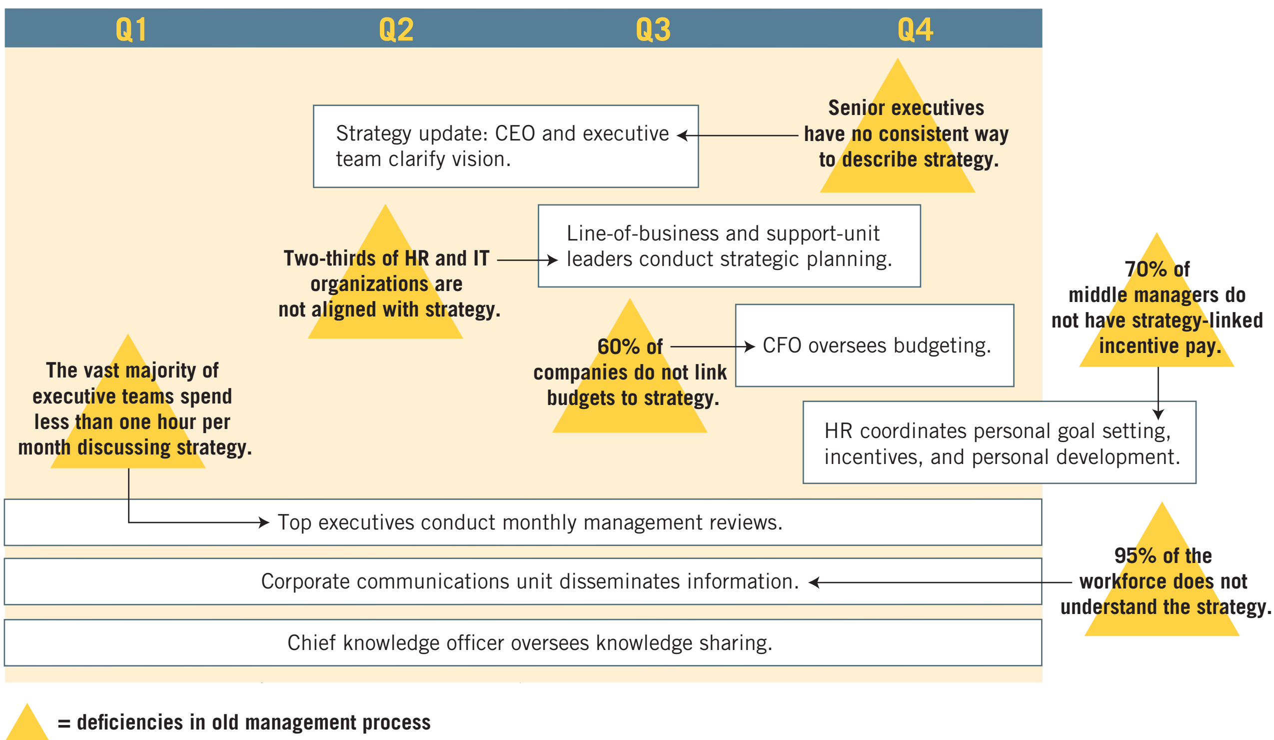
the initial scorecard, which the Army called the Strategic Readiness System (SRS). The project team also selected the software to be used for scorecard reporting and established systems and processes so that the scorecard would be regularly populated with valid, timely data. In the next phase, the team helped to cascade scorecards to 13 major subcommands and subsequently to more than 300 subsidiary commands throughout the world. The centralized project team provided training, consulting, software, and online support for the dispersed project teams. The central team also reviewed the scorecards produced by local project teams to ensure that their goals were aligned with those articulated on the chief of staff's scorecard.

The Army's project team, like its counterpart at Chrysler, soon took on more than the traditional roles of scorecard custodian and consultant. It established and took ownership of a strategy communication program. The Army team created a Web site that was accessible from around the world in both classified and unclassified versions, developed an online portal and library containing information about the SRS, wrote articles about the initiative, published a bimonthly newsletter, conducted an annual conference, led periodic conference calls with SRS leaders at each command level, and conducted scorecard training, both in person and on the Web. This extensive communication process was critical for educating soldiers and civilian employees and gaining their support for the new strategy. And the Army project team, much as Chrysler's did, began to facilitate the monthly discussions at headquarters about the readiness status of units around the world. Once again, an ad hoc project team had turned into a sustainable part of the organization's structure (the team and the SRS survived the appointment of a new chief of staff in June 2004).

The creation of a central office for strategy execution may appear to risk reinforcing top-down decision making and inhibiting local initiative, but it does just the opposite. A unit with responsibility for the implementation of strategy becomes a convenient focal point for ideas that percolate up through the organization. These emerging ideas can then be put on the agendas of quarterly and annual strategy reviews, with the best concepts being adopted and embedded in enterprise and business unit strategies. The OSM is a facilitating organization, not a dictating one.

The Old Strategy Calendar

Strategy management at most companies consists of processes carried out in isolation by different groups with different reporting lines. That's why strategy becomes disconnected from the units responsible for executing it.



What Good OSMs Do

Most of the organizations we have studied follow the path Chrysler and the Army took: The Balanced Scorecard project team incrementally and organically assumes more and more responsibilities on its own initiative. But that's not the only way to institute an OSM. From these cases, we have learned what functions an effective OSM must perform and how an OSM must relate to other functions within the organization. As a consequence, a few organizations we advise have recently opted to make the creation of an OSM an early and integral part of their scorecard initiatives. Canadian Blood Services, the main provider of blood services in Canada with an annual budget of Can$900 million, more than 4,000 employees, and 17,000 volunteers, is an excellent example of an organization that created an OSM at the *beginning* of its journey to becoming more strategy focused. (See the sidebar "How to Wield Influence and Stay Informed," by CEO Graham Sher.)

A unit with responsibility for the implementation of strategy becomes a convenient focal point for ideas that PERCOLATE UP THROUGH THE ORGANIZATION.

What should people designing an OSM bear in mind as they embark on the project? Through research into Balanced Scorecard best practices, we've identified the activities that should be directly managed by or coordinated with an OSM. Some of these activities – specifically those involved in creating and managing the scorecard, aligning the organization, and setting the agenda for monthly strategy reviews – are the natural turf of an OSM. They did not exist prior to the introduction of the Balanced Scorecard, so they can be given to a new unit without infringing on the current responsibilities of any other department. But many other activities – strategic planning, budget supervision, or HR training, for instance – are already the territory of other units. In these cases, the company needs to be explicit about the allocation of responsibilities between the OSM and other functional units. We have identified the following basic OSM tasks:

Create and manage the scorecard. As the owner of the scorecard process, the OSM must ensure that any changes made at the annual strategy-planning meeting get translated into the company's strategy map and Balanced Scorecard. Once the executive team has approved the objectives and measures for the subsequent year, the OSM coaches the team in selecting performance targets on the scorecard measures and identifying the strategic initiatives required to achieve them. As guardian of the scorecard, the OSM also standardizes the terminology and measurement definitions across the organization, selects and manages the scorecard reporting system, and ensures the integrity of the scorecard data. The OSM need not be the primary data collector for the scorecard, but it should oversee the processes by which data are collected, reported, and validated. Finally, the OSM serves as the central scorecard resource, consulting with units on their scorecard development projects and conducting training and education.

Align the organization. A company can execute its strategy well only if it aligns the strategies of its business units, support functions, and external partners with its broad enterprise strategy. Alignment creates focus and coordination across even the most complex organizations, making it easier to identify and realize synergies. At present, few companies actively manage the process of alignment; in many cases, unit strategies have only rhetorical links with corporate strategy. The OSMs we've studied help the entire enterprise to have a consistent view of strategy and to systematically manage organizational alignment. The OSM oversees the process of developing scorecards and cascading them through the levels of the organization. It defines the synergies to be created through cross-business behavior at lower organization levels and ensures that individual business unit and support unit strategies and scorecards are linked to each other and to the corporate strategy.

Review strategy. For all their professed commitment to strategy, senior managers spend remarkably little time reviewing it. Our research suggests that 85% of executive leadership teams spend less than one hour per month discussing their unit's strategy, with 50% spending no time at all. Companies that manage strategy well behave differently. Top managers usually meet once a month for four to eight hours. This meeting provides the opportunity to review performance and to make adjustments to the strategy and its execution. The underlying hypotheses of the company's strategy can be tested and new actions initiated. Managing this meeting is a core function of the

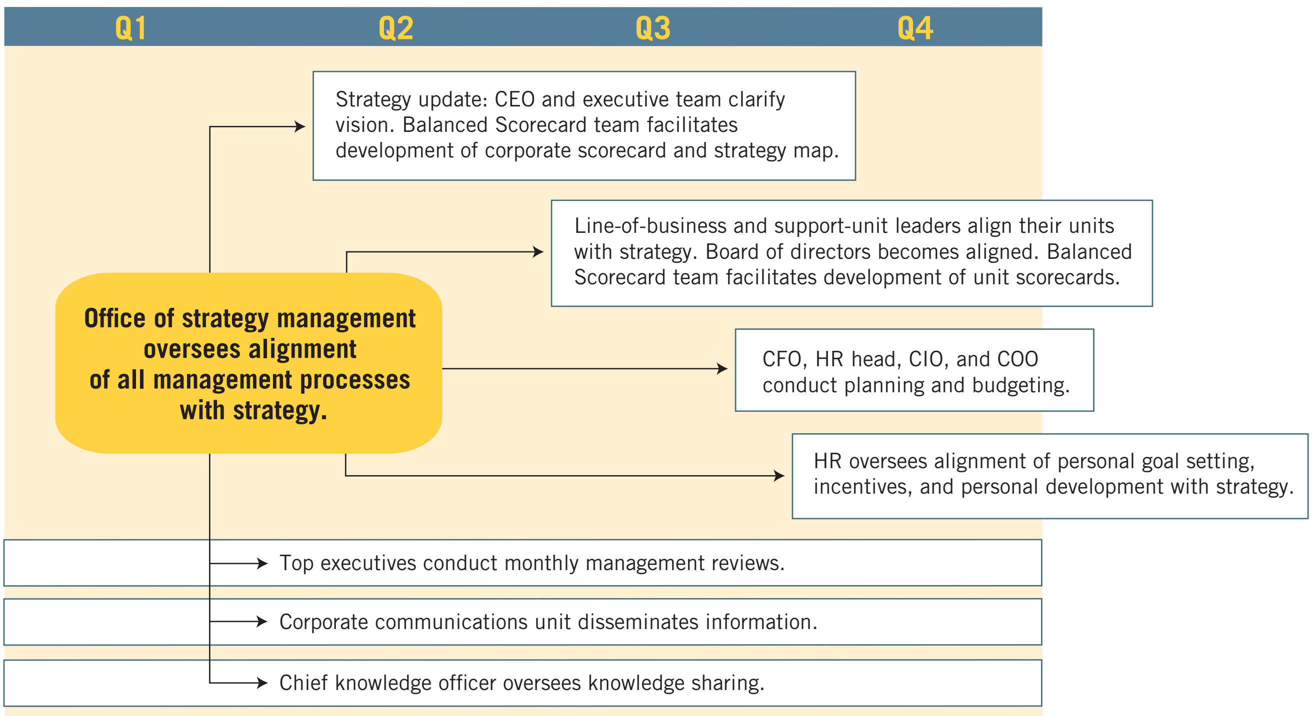
OSM. It briefs the CEO in advance about the strategic issues identified in the most recent scorecard so that the agenda can focus on strategy review and learning, rather than just a short-term financial performance review and crisis management. The OSM then monitors the meeting to determine action plans and follows up to ensure that the plans are carried out. Since the board of directors also plays an important role in reviewing and guiding strategy, the OSM helps the chief financial officer prepare the board packet and agenda for board meetings.

Develop strategy. Typically, strategy formulation is the responsibility of the existing strategic planning unit. The unit performs external and internal competitive analysis, conducts scenario planning, organizes and runs an annual strategy meeting, and coaches the executive team on strategic options. But developing strategy should not be a onetime annual event. After all, performance measures, such as those supplied by the Balanced Scorecard, provide continual evidence about the validity of the assumptions underlying a company's strategy. Those assumptions can be discussed periodically by the executive team, which can update the strategy if appropriate. And strategy development should not be done only by senior managers. The OSM or strategic planning unit can act as a filter for new ideas that come from within the organization. We've found that most planning units adapt fairly quickly to the continual strategy development process we observe at scorecard-driven companies. The additional processes represent a natural extension of, and complement to, their traditional work. Problems arise when a scorecard project is managed by a group from outside planning (such as HR, quality, or an ad hoc team). As the scorecard acquires strategic importance, conflicts over strategy development can arise between the planning unit and the scorecard team. If this occurs, top management should quickly merge the two groups.

Communicate strategy. Effective communication to employees about strategy, targets, and initiatives is vital if employees are to contribute to the strategy. Canon U.S.A., a scorecard user, describes its internal communication process as "democratizing strategy," and it actively promotes understanding of the company's strategy and the scorecard in all business units and support functions. Strategy communication, therefore, is a natural turf for an

The New Strategy Calendar

At scorecard-driven companies, the strategic processes are carried out or supervised by the office of strategy management in coordination with the appropriate management teams or executives. This ensures that the strategy is fully reflected in all strategy-related activities at all levels of the company.



How to Wield Influence and Stay Informed

by Graham Sher

As the chief executive of the nonprofit that manages the supply of blood products for all of Canada except the province of Quebec, I instituted an office of strategy management to help me cope with three big challenges in implementing a strategic agenda. First, I spend a great deal of time dealing with external demands and constituents. In addition to reporting to the board of directors of my organization, Canadian Blood Services (CBS), I must also focus on the 12 Canadian provincial and territorial governments that provide its funding. So I have limited time and information with which to manage internal issues.

Also, while many people believe that chief executives wield direct and easy influence, the reality is that any CEO has a difficult time influencing his or her organization. A CEO's attempts to command and control undermine the authority of senior executives. I want to exert my influence indirectly and in a way that empowers my executives and creates an environment in which they can lead and manage their parts of the organization. I set the tone, and I define the strategic agenda, communicate it, and ensure that it gets undertaken, but I don't command any parts of the organization.

My third challenge is staying informed. Information, particularly bad news, is filtered before it gets to me. I typically do not see the most timely, valid information about CBS's current performance. Before our OSM was implemented, we were spending way too much time debating the quality of our information – obviously an unwieldy way of executing strategy and a very time-intensive way of conducting management meetings.

I see the Balanced Scorecard, managed by an office of strategy management, as a way of overcoming these three barriers to success. The Balanced Scorecard empowers executives, as opposed to invading their territory and undermining their authority. It gives me performance management information that is aligned at all executive levels and appropriately validated before it comes to my attention. Much of management is a search for the truth. The Balanced Scorecard provides me with easy access to timely, unfiltered information about our strategy implementation.

Because of my urgent need to accomplish change, I followed the unconventional route of establishing an office of strategy management at the outset of our Balanced Scorecard project. I also wanted the OSM to report directly to me – that was a way to highlight the importance of this office to my strategic agenda. But the OSM needed other clearly defined linkages or relationships, too; I want change at CBS to come from within, not to be imposed from above. To that end, I created a dotted-line reporting relationship between the OSM and two other key executives at CBS, the CFO and the COO, who ultimately are going to help execute the change agenda. I did not create the new corporate-level OSM unit lightly. Its positioning in the organization enables me to fulfill my internal duties as a change leader but doesn't affect my ability to meet the many external obligations I have as the CEO of a rapidly evolving public-sector organization emerging from crisis – Canada's blood-supply system was completely revamped after thousands of people received contaminated blood in the 1980s and 1990s.

As for the OSM's responsibilities, I see strategy management as being made up of three high-level processes: *strategy formulation,* leading to *strategy execution,* leading in turn to *strategy learning,* which then cycles back to strategy formulation. The exhibit "The Processes of Strategy" shows the activities within the categories. The OSM has primary responsibility for most of these processes, but not all. For example, in 2004, the OSM led the project team that developed the strategy maps and scorecards for the enterprise, our three operating divisions, and two support units – human resources and information technology. For some processes, however, the OSM's role is more integrative and facilitative than direct. For example, the chief financial officer has primary responsibility for budgeting, with the OSM playing a coordinating role.

We launched the OSM with three full-time individuals. The OSM leader is a vice president and a member of the executive management team; her position in the organization is consistent with the importance we give this function. She leads and facilitates the integration of strategy into all our core processes. In addition, we have two individuals reporting to the OSM leader to provide day-to-day management of the office; to manage the multiple work streams and cross-functional teams; to lead and facilitate meetings; to educate people on the Balanced Scorecard and other strategy-focused practices and tools; and to perform analyses of problems, performance, and metrics. This should be the right complement of individuals to help support the leader of the OSM, and ultimately the rest of the executive team, in undertaking our ambitious change agenda for this year.

The Processes of Strategy

The Canadian Blood Services' Office of Strategy Management has direct or indirect (shaded items) responsibility for strategic processes, which fall into three categories.

STRATEGY FORMULATION	STRATEGY EXECUTION	STRATEGY LEARNING
Environmental assessments	Balanced Scorecard performance reporting	Benchmarking
Strategic planning	Initiative management	Best-practice sharing
Budgeting	Communicating strategy	Internal coaching and change management
	Personal scorecards	

Graham Sher is the CEO of Canadian Blood Services, based in Ottawa.

OSM. But as with strategy planning, internal communication is sometimes another unit's existing responsibility. In these situations, the OSM has tended to take an editorial role, reviewing the messages to see that they communicate the strategy correctly. In cases where the corporate communications group has little knowledge of or focus on strategy, such as at Chrysler and the U.S. Army, the OSM takes on primary responsibility for communicating both the scorecard and strategy to employees. In either situation, the OSM should always take the lead in crafting strategy messages delivered by the CEO, because one of the most effective communication channels is having each employee hear about strategy directly from the CEO. Finally, as part of its communication responsibilities, the OSM must cooperate with HR to ensure that education about the scorecard and its role is included in employee training programs.

Manage strategic initiatives. Strategic initiatives – such as a TQM program or the implementation of CRM software – are discretionary programs that help companies accomplish strategic objectives. The executive team typically identifies these initiatives as part of its annual planning process, although new initiatives may arise throughout the year. Ideally, the entire portfolio of such initiatives should be assessed and reprioritized several times annually. The screening, selection, and management of strategic initiatives are what drive change in the company and produce results. Our experience suggests that such initiatives should be managed separately from routine operations. Typically, they are managed by the units most closely associated with them (a CRM project, for instance, is best managed by customer service) or by an ad hoc team drawn from the functions or units affected. Responsibility for managing initiatives that already have a natural home should remain with the associated unit or function. The OSM intervenes only when an initiative falls behind schedule, is over budget, or is not delivering expected results. But the OSM should manage initiatives that cross unit and functional lines – it can thus make sure that they get the resources and attention they need. In all cases, the OSM retains responsibility for monitoring the progress of strategic initiatives and reporting on them to top management.

Integrate strategic priorities with other support functions. Existing functional departments retain prime responsibility for three other key processes necessary for successful strategy implementation: planning and budgeting, human resource alignment, and knowledge management. These processes are critical for effective strategy execution, and the OSM should play a consultative and integrative role with the respective functional departments.

Planning and Budgeting. At most corporations, the various functional departments are responsible for planning how the corporation will allocate resources over the year. The finance department oversees budgeting and the allocation of cash to the units and cross-functional initiatives; IT makes recommendations about investments in databases, infrastructure, and application programs; and HR makes plans for hiring, training, and leadership development. For a strategy to be effective, all the functional plans must be aligned with the strategy. The budgets prepared by the finance department, for example, should reflect those established in the strategic planning process and should incorporate funding and personnel resources for cross-functional strategic initiatives. To ensure this alignment, the OSM must work closely with all these functional units.

Human Resource Alignment. No strategy can be effective unless the people who have to carry it out are motivated and trained to do so. Motivation and training is, of course, the natural domain of HR, which typically carries out annual performance reviews and personal goal setting and manages employee incentive and competency development programs. It is the responsibility of the OSM to ensure that HR performs these activities in a manner consistent with corporate and business unit strategic objectives. The goal is to make strategy everyone's job.

Knowledge Management. Finally, the OSM needs to ensure that knowledge management focuses on sharing the best practices most critical for the strategy. If managers use the wrong benchmarks, the company's strategy will fall short of its potential. At some companies, learning and knowledge sharing are already the responsibility of a chief knowledge or learning officer; in those cases, the OSM needs to coordinate with that person's office. But if such a function does not already exist, the OSM must take

> **It's simplest to place the office of strategy management on a par with functions that report directly to the CEO.**
> **THE OFFICE SERVES, IN EFFECT, AS THE CEO'S CHIEF OF STAFF.**

the lead in transferring ideas and best practices throughout the organization.

The exhibit "The New Strategy Calendar" illustrates the activities that a properly constituted OSM will be engaged in during the year. The strategy cycle launches at the beginning of the second quarter, when the OSM starts to plan strategy and update the enterprise scorecard. After the enterprise strategy meeting, the OSM starts the process of aligning the organization with the enterprise goals. Before the end of the third quarter, it will be coordinating with finance to bring unit-level plans and budgets in line with strategy, and by the beginning of the fourth quarter, it will be working with HR on aligning the competency development and incentives of employees with scorecard objectives. While these calendar-driven processes are going on, the unit continually engages in control and learning: reviewing and communicating strategy, managing initiatives, and sharing best practices.

Positioning and Staffing the OSM

Executing strategy usually involves making changes that only a CEO can empower, and the OSM will be most effective when it has direct access to the CEO. Barbara Bossin, the director of strategic alignment at St. Mary's Duluth Clinic, told us she was able to overcome resistance to her initiatives because managers knew she had a direct reporting line to the company's chief operating and chief executive officers. An OSM buried deep in the finance or planning department may find it difficult to command similar respect and attention from senior executives for strategy management priorities.

The simplest solution, therefore, is to place the OSM on a par with major functions, such as finance and marketing, that report directly to the CEO. The OSM serves, in effect, as the CEO's chief of staff. But if the OSM has originated within a powerful function, such a positioning may not be feasible. In that case, the OSM will usually report to the chief of the function in which it is nested – such as the CFO or vice president of strategic planning – but with occasional direct access to the CEO. At the Mexican insurance company Grupo Nacional Provincial (GNP), for example, the OSM reports both to the chief executive and to the chief financial officer. The OSM sets the agenda for a weekly meeting with the CEO and CFO and for a broader weekly meeting with the six top company executives. The office of strategy management at GNP also has a matrixed relationship with 20 Balanced Scorecard managers in the two major business units and nine support units and with the owners of the major strategic initiatives. The relationship enables the OSM to coordinate the strategic planning done in the business and support units.

The OSM may be an important functional unit, but it doesn't have to be large; it is certainly not our goal to encourage companies to build a new bureaucracy. Although Chrysler employs 13 full-time people in its OSM, reflecting the unit's involvement in product development, our experience suggests that firms with sales of $500 million to $5 billion and 1,000 to 10,000 employees can get by with fewer than ten people. In principle, as the exhibit on this page shows, a fully functioning OSM should not need more than six to eight full-time-equivalent positions to cope with its activities.

We have observed that establishing an OSM does not usually involve hiring expensive new talent. The OSM is typically staffed with people who led the Balanced Scorecard project – they often come from the planning and finance functions, but some come from other staff groups such as quality, HR, and IT. Several organizations we studied have reported that the people assigned to their OSMs do not constitute a net increase in the organization's head count. In many cases, the evolution of a well-functioning OSM actually helps reduce overall head count, thanks to the OSM's role in streamlining and focusing management processes and helping managers eliminate layers of staff engaged in data gathering and reporting. The OSM, however, should be assessed by the value it creates through successful strategy execution, not by whether it can reduce head count.

To fulfill its responsibilities successfully, an office of strategy management at a large company typically needs only six to eight full-time people.

STRATEGY MANAGEMENT PROCESS	TYPICAL # OF FTE
Scorecard management	1.0
Organization alignment	1.0 – 1.5
Strategy reviews	0.5 – 1.0
Strategic planning	0.5
Strategy communication	0.5 – 1.0
Initiative management	1.0 – 1.5
Planning and budgeting	0.5
Workforce alignment	0.5
Best-practice sharing	0.5 – 1.0
TOTAL FTE POSITIONS	6.0 – 8.5

• • •

Many organizations have achieved dramatic performance improvements by sustaining a focus on implementation of strategy. We have captured and codified a body of knowledge from these successful organizations that provides the foundation for an emerging professional function focusing on the management of strategy. An office of strategy management that is positioned at the level of other senior corporate staff offices and has responsibility for managing and coordinating all the key strategy management processes can help companies realize the benefits from this body of knowledge.

Reprint R0510D; HBR OnPoint 1894
To order, see page 159.

DAVID PLUNKERT

It's a place where more energy is put into thwarting things than starting them, but in the nicest way. A startling percentage of companies, especially large, established ones, display the symptoms.

by Gary L. Neilson, Bruce A. Pasternack, and Karen E. Van Nuys

The PASSIVE-AGGRESSIVE Organization

HEALTHY COMPANIES ARE HARD TO MISTAKE. Their managers have access to good, timely information, the authority to make informed decisions, and the incentives to make them on behalf of the organization, which promptly and capably carries them out. A good term for the healthiest of such organizations is "resilient," since they can react nimbly to challenges and recover quickly from those they cannot dodge. Unfortunately, most companies are not resilient. In fact, fewer than one in five of the approximately 30,000 individuals who responded to a global online survey Booz Allen Hamilton conducted describe their organizations that way.[1] The largest number – over one-quarter – say they suffer from the cluster of pathologies we place under the label "passive-aggressive." The category takes its name from the organization's quiet but tenacious resistance, in every way but openly, to corporate directives.

In passive-aggressive organizations, people pay those directives lip service, putting in only enough effort to appear compliant. Employees feel free to do as they see fit because there are hardly ever unpleasant consequences, and the directives themselves are often misguided and thus seem worthy of defiance. Making matters worse, senior management has left unclear where accountability actually lies, in effect absolving managers of final responsibility for anything they do. Those with initiative must wait interminably for a go-ahead, and their actions when finally taken are accompanied by a chorus of second-guessing, a poor but understandable substitute for the satisfaction of accomplishing the task at hand. (See the exhibit "What Kind of Company Is Yours?")

When employees' healthy impulses – to learn, to share, to achieve – are not encouraged, other harmful but adaptive conduct gradually takes over. It is no wonder that action of any kind becomes scarce and that erstwhile doers find safety in resisting unpromising efforts. The absence of confrontation at such places is only a disguise for intransigence.

When employees' healthy impulses – to learn, to share, to achieve – are not encouraged, other harmful but adaptive conduct gradually takes over.

As a general rule, companies that are not healthy suffer from either too much control at the top or not enough. Either can cripple performance: in the former case, by failing to devolve authority, share information, and reward constructive decision making; in the latter, by allowing individuals and business units to work at cross-purposes or do little. The passive-aggressive corporation, due to the peculiarities of its evolution, can exhibit the drawbacks of both too much control and not enough.

In such organizations, people with authority lack the information to exercise it wisely or the incentives to serve the company's strategy and interests or the personnel that will carry out their directives. Conversely, people with the incentives and information necessary to make good decisions lack the authority to execute them or oversee their execution by others. As a result, many in senior positions operate under the false impression that they control things they actually do not. At the same time, many think they cannot control what they actually can.

Of course, there is no such thing as a pure exemplar of the passive-aggressive corporation, any more than there is a firm somewhere that has never suffered from the syndrome. Even high-performing organizations harbor pockets of resistance, while semiautonomous pockets of excellence lift up poorly performing ones. These areas of excellence can be the levers by which good managers show to the rest of the firm that action is possible. Nonetheless, we've found that the passive-aggressive organization is the hardest to change of the seven types we studied because such companies have generally had more time than the others to accumulate and institutionalize dysfunctions, and their people are the most cynical about reform attempts.

Before bursting into full flower, passive-aggressive organizations are dotted with frustrated world-beaters who cannot understand why their most promising projects can't gain traction. After a couple of years, such individuals either quit or become demoralized into ineffectuality by the thanklessness and futility of effort. Still, it would be wrong to say that organizations displaying passive-aggressive behavior must have lots of passive-aggressive people in them. The passive-aggressive organization is not one where bad outcomes can be attributed to the hostile or perverse intentions individuals bring to the job. It is, in fact, a place where mostly well-intentioned people are the victims of flawed processes and policies.

To some venerable observers, the employees of such companies bear a passing resemblance to the "organization man" of 1950s sociology and literary fiction. In the postwar era, when U.S. corporations dominated their domestic markets and enjoyed stable market shares, personal initiative and risk taking were understandably seen as disruptive rather than opportunity seeking. But what may have been innocuous and even suitable behavior for its time can, in today's world of global markets and unfettered competition, bring a company to the brink of failure. Indeed, some of the companies today that find security and comfort in inertia are the very ones that dominated markets 50 years ago.

Our conception of the passive-aggressive company and the other six organizational types in our seven-part schema grew out of our decades of experience advising firms in a wide variety of industries and locations on organizational issues. Over and over, we saw certain classic

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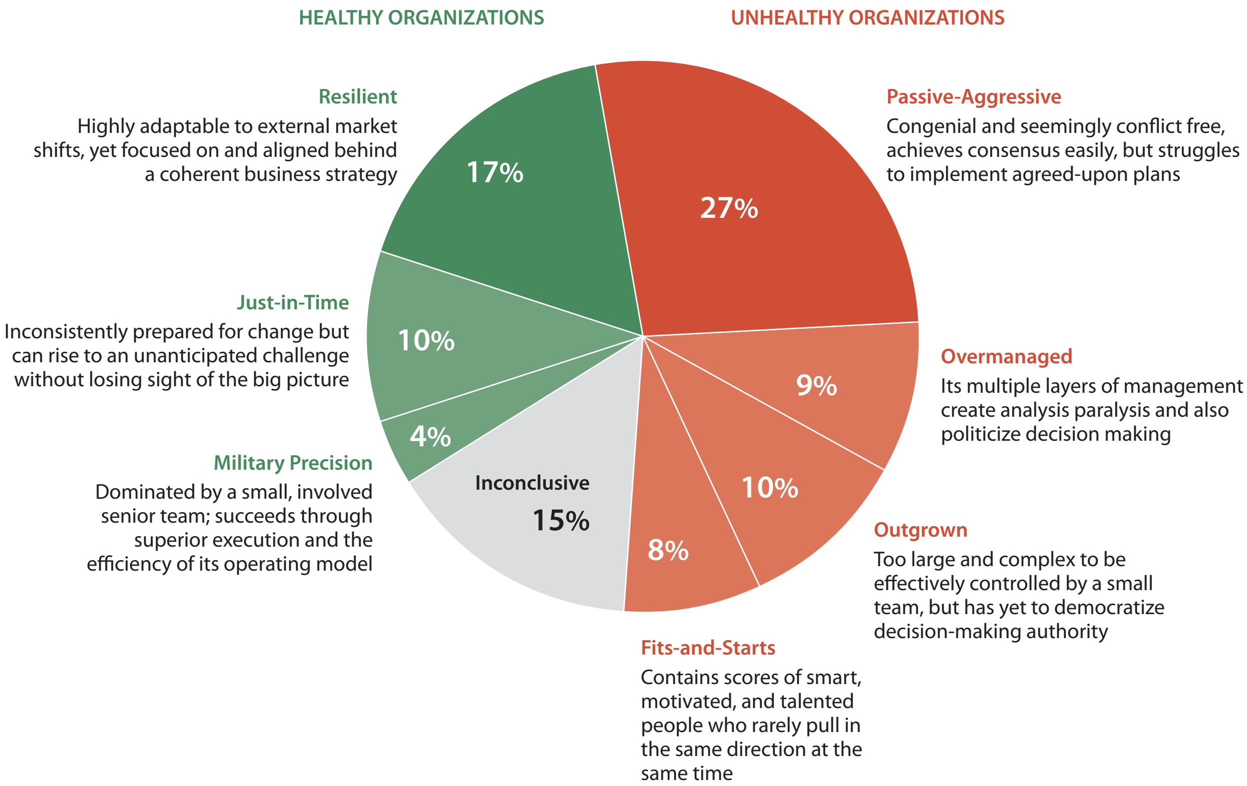
What Kind of Company Is Yours?

Of the seven major organizational types we've observed, the healthiest is the resilient organization, which as its name implies is the most flexible and adaptable. Our online survey shows, unfortunately, that the most common is the far-from-healthy passive-aggressive type, in which lines of authority are unclear, merit is not rewarded, and people have learned to smile, nod, and do just enough to get by.

The type of organization respondents' answers most closely describe



Source: Org DNA data set, 30,000 observations; Booz Allen analysis

behavioral patterns occur, which, we began to notice, correlated with certain objective features of those companies, such as size and age. To explain the emergence of these patterns, we postulated the existence of a limited number of underlying forces in every organization. After isolating what we determined to be the four most basic ones, we studied how each operated and interacted with the others to shape the seven organizational types. As we came to understand what made each type of organization function well or poorly, we were able to refine our definitions. When we tested the soundness of our schema in the online survey, we found that the organizational portraits the responses painted corresponded closely to the seven types we had identified.

The Slide into Passive-Aggressiveness

Most passive-aggressive organizations don't start out full of entrenched resistance. Problems develop gradually as a company grows, through a series of well-intended but badly implemented organizational changes layered one upon another. Passive-aggressive organizations are, therefore, most commonly large, complex enterprises whose seeds of resistance were often sown when they were much smaller.

While each organization takes a unique path, we have seen a particular development pattern recur. A company is founded on a healthy core business. The large amount of cash it throws off finances a series of acquisitions, increasing organizational complexity and confusion. As it grows beyond about $1 billion in revenues, the firm becomes too large and complex to be run effectively by a small, hands-on senior team. So it begins to experiment with decentralization in ways that are ill planned, because it is inexperienced at integration or growing too quickly, and halfhearted, because the founders have trouble genuinely letting go. To regain control, the founders add layers of managers to oversee the line managers whose performance has disappointed them. The additional layers make it difficult for people in the organization to understand who bears responsibility for specific results. Some managers become reluctant to make decisions, and others won't own up to the ones they've made, inviting colleagues to second-guess or overturn them. An already passive-aggressive organization grows increasingly so as its people become more certain of the acceptability of such conduct. Resistance becomes entrenched, and failure to deliver on commitments becomes chronic.

More specifically, we've seen organizations descend into the passive-aggressive state through one or another of three classic failings, as the following examples demonstrate:

Unclear Scope of Authority. One consumer products company we studied was founded by a California entrepreneur who began by selling a single snack food throughout the western United States. That product became the company's first national brand. The founder made virtually every major decision not only about strategy but also about marketing, sales, and operations. When a couple of companies in Latin America became available for purchase, the company pounced. The founder put a vice president in charge of overseeing both acquisitions, assuring the VP that his door would always be open.

The VP believed that product development should be tailored to local markets and kept close to home. The founder reluctantly agreed to a pilot program in which a formulation of the snack food modified for the Latin American market would be developed in Brazil, with "periodic" oversight from headquarters. But as development progressed, the founder became increasingly involved, flying to Brazil almost weekly. More often than not, he overrode the local development team's recommendations. The final product, representing the founder's wishes, met with lukewarm demand.

Not wanting to thwart regional initiative, the founder turned the pilot process into established practice. All the people involved in regional product development, however, recognized that they really weren't calling the shots. Nevertheless, they continued to pretend to be in control while never insisting on actually having it.

Misunderstandings and misrepresentations concerning who really has control over which decisions are often the first signs that an organization is slipping into passive-aggressive territory. Instead of vesting authority in the units and holding them accountable for results, management teams like the one in this company tighten the reins. Weakened divisional managers who are already unclear about the boundaries of their own authority, and fearful of losing what is left of it, come to take little personal responsibility for the success of the enterprise.

Misleading Goals. A new CEO of an American housewares company decided that empowering people further down in the organization would enhance initiative and boost profits. Worldwide, salespeople were given more authority to respond to customers' wishes while being measured on revenues. Country-based marketing teams were given the authority to develop local campaigns and were measured on the basis of market share. Plant managers were given the authority to make operating decisions and were held accountable for their costs.

The program had an impact, but not the one the CEO had intended. Salespeople increased volume through heavy discounting, so margins fell. The increased volume taxed the plants' capacity, so quality problems emerged. On-time delivery rates plummeted, but since plant managers were being judged on costs, they declined to introduce expensive overtime shifts. Regional management found itself telling plant managers, "You were supposed to lower costs by 7% this year, but we'll make an exception when reviewing your year-end results because making on-time deliveries is more important right now."

The legacy of this initial failure to properly align the incentives and goals of the organization was an unmistakable signal that metrics and plans weren't really binding. Failing to deliver on commitments became acceptable as long as one had a reasonable excuse.

Agreement Without Cooperation. A decade later at that same company, headquarters had become focused on delivering profits by reducing the cost of both operations and staff. The managers of the European division, however, believed that the future of the business lay in gaining market share.

Shortly after his appointment, a new CEO launched a complexity reduction program. In his view, a lack of standardization in machinery and processes was creating unnecessary costs. At one of the company's quarterly meetings, the CEO, the regional VPs, and the function heads discussed the problem. The CEO invited an executive from another firm to come and tell the story of how such a program had succeeded at his company. As the CEO went around the table, every individual endorsed the program, including the head of Europe, though he warned against eliminating complexity that served big customers having special requirements and the willingness to pay for them. Everyone agreed that this advice was sensible.

European management understood the program to be something corporate cared about, but it fell somewhere around tenth place on the division's strategic agenda. The Europe VP appointed a middle manager who had been working on special projects for the previous two years to take the lead. At the CEO's next quarterly review, the VP reported on Europe's progress: The division had appointed a leader, staffed the team, sent out a communication, and started a project. It all sounded fine. But for all intents and purposes, Europe was ignoring the initiative. Its VP never talked about the program or asked how it was going when he brought his regional team together or visited the plants. He didn't add it to any management meeting agendas and never put his name to it; instead, he let all communications concerning the project come from the project manager. The implicit message in Europe was that the program didn't really matter. But by leaving an impression of compliance with headquarters, European management made it much harder for corporate to see the program's lack of progress and its even dimmer prospects.

Misunderstandings and misrepresentations concerning who really has control over which decisions are often the first signs that an organization is slipping into passive-aggressive territory.

Regardless of how they arrived where they are, passive-aggressive organizations are usually the sum of a series of ad hoc decisions or events that made sense in the moment but have the effect of gradually blurring decision rights. Over time such shotgun arrangements outlive their individual rationales, and the organization loses all vestiges of a coherent overall plan.

The Anatomy of the Organization

In all unhealthy organizations, dysfunction is rooted in a fundamental misalignment of four basic building blocks of the organization: incentives or, more broadly speaking, motivators; decision rights; information; and organizational structure. In passive-aggressive organizations, the misalignments generally involve complicated interactions among all four, which together conspire to freeze initiative.

Ineffective Motivators. We define "motivators" to include not just financial compensation but all the factors, explicit and implicit, that affect anything an employee cares about: whether her office has a window, whether he is promoted to a position with greater visibility or a larger number of direct reports, whether she receives a company car or is invited to important meetings or foreign off-sites. Far surpassing these in influence is some tangible evidence of the impact of one's efforts.

Passive-aggressive organizations are exceptionally poor at providing that evidence, often failing to judge and reward individuals according to their business value to the organization – or even to distinguish better performance from worse. Fifty-seven percent of respondents working at passive-aggressive companies agreed that in their organizations the individual appraisal process fails to differentiate among high, adequate, and low performers. Yet only 15% of respondents from resilient companies agreed with that statement. (See the exhibit "Diagnosing the Passive-Aggressive Organization.") In some cases, the rewards given to certain job titles seem incommensurate with those functions' overall contribution to the firm. People who expect their efforts to go unrecognized or to be inadequately valued put in just enough effort to stay out of trouble, since they have no reason to believe that any extra effort or initiative will lead to additional rewards or superior results.

What's more, incentive systems communicate to the organization as a whole what really matters to upper management. Corporate may send out countless memos about its strategy, mission, and goals, but its true values are embodied in what it is willing to pay for and otherwise recognize, which is one reason that the annual e-mail describing how bonuses will be calculated is the one everybody not only reads but remembers.

Within passive-aggressive firms, privileges and pecking order often loom larger than the realities of the marketplace. Such firms' very size and wealth can insulate employees from competitive pressures, which register as mere symbols – the share price or numbers on a P&L statement – not as forces that will affect the company's success. So, for example, a manager may be rewarded for the number of market studies his department prepared in the past fiscal year, regardless of how many of those studies served as the basis for marketing campaigns that actually enhanced sales. The job of senior management is to remind everyone else of the reality behind those symbols by connecting each manager's standing within the firm – size of office, size of bonus, access to superiors – to the firm's standing within the marketplace.

Still, as profoundly in need of proper motivation as a passive-aggressive organization is, it would be a mistake to think that tinkering with incentives alone, without regard to the other forces at play, will coax such a company out of its doldrums.

Unclear Decision Rights. As in the California snack food company described earlier, nearly everyone in a passive-aggressive organization is unsure about where the limits of his or her own responsibilities end and those of other colleagues begin. In our online survey, only 27% of respondents from passive-aggressive organizations agreed that "everyone has a good idea of what decisions/actions he or she is responsible for," compared with 93% at resilient organizations.

Vaguely defined roles give their occupants "plausible deniability" when things go badly. The problem can always be said to be the responsibility of the next person, who can likewise shift blame elsewhere. Meanwhile, conscientious employees may hang back for fear of intruding on someone else's turf.

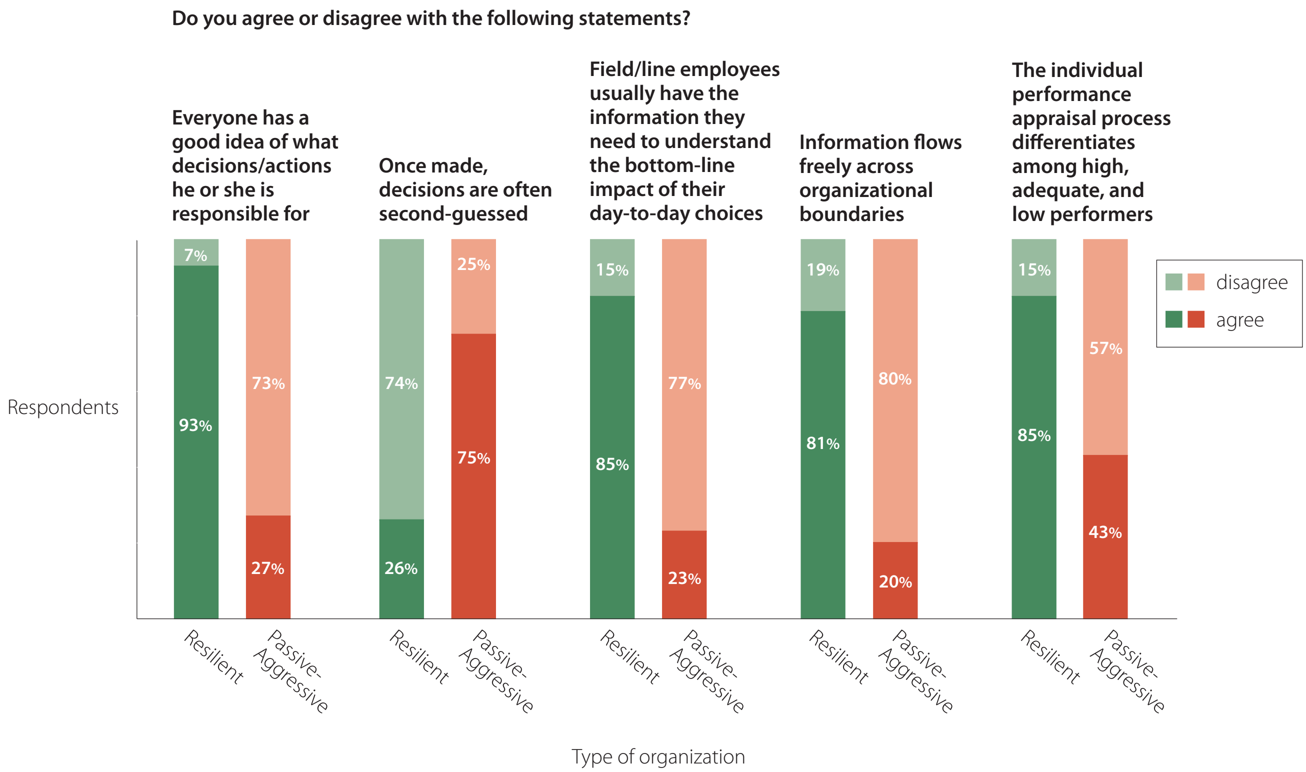
As a consequence, authority becomes fragmented. When everyone has a say in making a decision, everyone thinks he has the right to stymie or reverse it after it has been made. In passive-aggressive organizations, 75% of respondents believe that "once made, decisions are often second-guessed," versus just 26% in resilient organizations. And second-guessing that occurs in the middle of the decision-making process can bring it to a halt.

In one company that we analyzed, for instance, a seemingly routine decision to renew the annual contract of a longtime supplier of aluminum fasteners had to run nine hurdles before it could be made. The matter was initially taken up by central purchasing, which negotiated the contract according to standard sourcing guidelines. But business-unit operations objected because it wanted parts with a lower defect rate, which were going to cost more. Purchasing, feeling it had been ignored, withheld its approval. After several weeks of gridlock, the business unit identified an alternative supplier, and its sourcing manager approved a purchase order at a higher price.

But central purchasing still refused to release the order because the new supplier was not on purchasing's pre-approved list. So the new supplier faced having to go through the entire approval procedure all over again. Ultimately, the issue had to be presented to senior management for a final decision. The whole process took

Diagnosing the Passive-Aggressive Organization

People working in passive-aggressive organizations feel strongly that they don't know which decisions they're responsible for, that no decision is ever final, that good information is hard to obtain, and that the quality of their work is not being accurately appraised. People in resilient organizations feel the opposite.



Source: Org DNA data set, 30,000 observations; Booz Allen analysis months rather than the few weeks it should have. If decision rights had not been fragmented – if either central purchasing or the business unit had been charged with getting both the right goods and the right price – the process wouldn't have created so much frustration. As it was, the lesson for purchasing managers was: Deadlines didn't matter; neither did either unit's internal guidelines, since each could be overridden by the other.

Of course, it is never possible to specify every decision right a priori. Opportunities and challenges will appear as matters unfold, and any attempt to give a complete accounting of all decisions that can be foreseen would take too long and be too complex to be useful. But in healthy organizations, decisions do not go unmade because no one has been designated to make them. Most of the time, someone will jump in and get the job done. In such places, people take the initiative because they know their efforts will be rewarded.

Quest Diagnostics, for one, designates a decision maker for each of its 50 most important decisions. Below that level, the company is less explicit in its approach but just as effective in assuring that decisions get made. It does so by creating incentives. To each of its 15 most important cross-functional processes, ranging from acquiring specimens to billing, it assigns a process owner, who is responsible for the performance of the company as a whole, not just the parts he or she directly controls. Because the owner of the specimen-collection process, for instance, can obtain information that billing can use to improve its own collection rates, the firm rewards the specimen-collection process owner as well as the billing process owner when the bad-debt rate declines.

Within passive-aggressive firms, privileges and pecking order often loom larger than the realities of the marketplace.

The Wrong Information. Employees of a passive-aggressive organization are often more interested in learning about what goes on inside their company than about the competitive realities that affect the firm's long-term survival. For example, though never officially, brand managers at one software company were judged on the elaborateness of their forecast presentations. However, forecasts and results differed on average by as much as 25% in that volatile industry, suggesting that spending so much time on documents intended for internal consumption was diverting brand managers from more productive pursuits.

In another case, employees noticed that executives who received frequent promotions spent a lot of their time in meetings at headquarters. Wanting to get ahead, they started seeking invitations to those meetings themselves, whether or not they had anything to contribute. They failed to realize that the high performers were called into meetings because they had important market insights others sought. In a passive-aggressive organization, rituals and routines, even modes of dress, become fetishized, as though they contain the secret to the firm's past successes.

When in possession of information or knowledge of genuine value, employees of passive-aggressive organizations are reluctant to share it, since doing so frequently benefits the recipient more than the sharer. For example, many departments use acronyms and terms of art to abbreviate the information they use internally. When sharing that information with a new department, they neglect to explain what their shorthand means, if not out of a desire to hoard the information for their own benefit then because spending the time required to translate it will not be rewarded.

Finally, in an organization already rife with meddling, many managers find that providing information gives the recipients a pretext to interfere. All these factors explain why only 20% of surveyed individuals in passive-aggressive organizations agree that "information flows freely across organizational boundaries." By contrast, that figure is 81% at resilient organizations.

Misleading Structure. Because individuals in passive-aggressive companies often lack clear measures of how they add value, they may instead rely on the organization chart as a map of relative status – focusing on how many direct reports they have, how many levels away from the CEO they are, or whether their immediate supervisor is a favorite. Ironically, the org chart rarely conveys much information about how work gets done in these firms because decision rights are unclear or often reside in unexpected places.

Curing the Patient

Passive-aggressive organizations are, by definition, uniquely resistant to change and are therefore uniquely difficult to rehabilitate. To begin with, it's hard to discern their actual condition from beneath the accretions of earlier failed fixes. What's more, the remedy is bound to be complicated and taxing. Analysis may reveal the need for greater centralization in some areas (to support products that rely on the same basic technology or production process, for instance) and greater decentralization in others (perhaps to serve a market requiring significant product tailoring).

The first order of business is the greatest challenge of all: getting a passive-aggressive organization's attention. A long history of seeing corporate initiatives ignored and then fade away makes employees almost hopelessly jaded. Many people have become so hard-bitten that only a significant business threat can rouse them to action. But because such organizations are also so inward gazing, such a threat remains invisible until it's almost too late.

For example, an insurance company we worked with suffered a downgrading of its debt just when its competitors were demutualizing and it needed to appeal to investors who were not policyholders. Managers there had long had the attitude that "this too shall pass" when presented with a change program – and always they'd been right. To emphasize that this time was different, senior management pulled 30 managers out of their regular jobs to focus full-time on the turnaround. Among those 30 were the seven most visible, up-and-coming figures in the company, each of whom was put in charge of one of the seven elements of the turnaround. The senior managers had limited experience working with teams, but they formed seven cross-functional ones and met with them every other week. Soon senior management was modeling its behavior on that of the teams it had organized – it cooperated, set explicit goals, made hard decisions, and stuck with them.

This time, the whole organization woke up to the seriousness of what was happening, and the turnaround more than fulfilled its near-term goals. Years later, the company in its turn demutualized, and today it is thriving. The transformation is still remembered as much for its impact on the organization's culture as its earnings.

In addition to these catalysts, elements of successful programs to fix passive-aggressive organizations include the following:

Bring in new blood. Outsiders often lead the change in passive-aggressive organizations, for several reasons. First, they send an unmistakable signal to the troops that "things are so badly broken we can't fix them ourselves anymore." Second, outsiders bring new standards they expect the organization to meet; they haven't been worn down by the old habit of making excuses. And third, they often find it easier than incumbents to treat the organization more like a business than a family.

John Thompson was one such outsider when he became CEO of software security firm Symantec in April 1999 after 28 years at IBM. He says of Symantec: "This was a company that had lost its way, and it needed somebody who was not connected to the people or processes or strategy to ask the tough questions and be prepared to act on the answers. The former CEO, Gordon Eubanks, did a terrific job of building the company from nothing. The raw material, the raw attributes, were there. I just brought a different set of eyes, a different set of lenses."

Nevertheless, outsiders like Thompson have certain handicaps. If they alienate middle management by going too fast, they can aggravate its natural tendency to display resistance in classic passive-aggressive fashion. Successful newcomers retain enough senior members of the old guard to enlist the organization's loyalty while purging those who are unlikely ever to get on board.

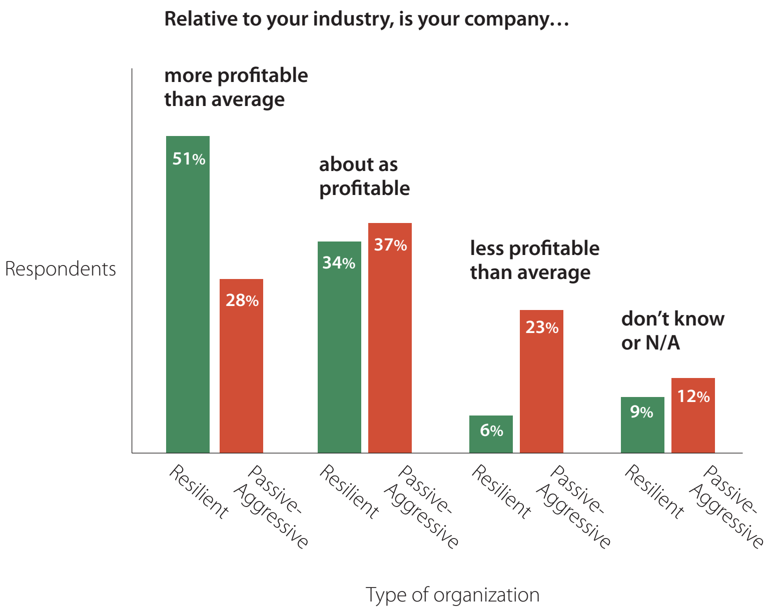
Because of these hazards, a homegrown CEO who is capable of grasping the urgency of the situation can sometimes be the safer choice. But the message he or she sends that a new day has arrived must be unequivocal.

Leave no building block unturned. Passive-aggressive organizations are so fundamentally misaligned that the best way to get their attention is by changing everything at once, so that the magnitude of the problem, and of the effort that will be required to fix it, cannot be denied.

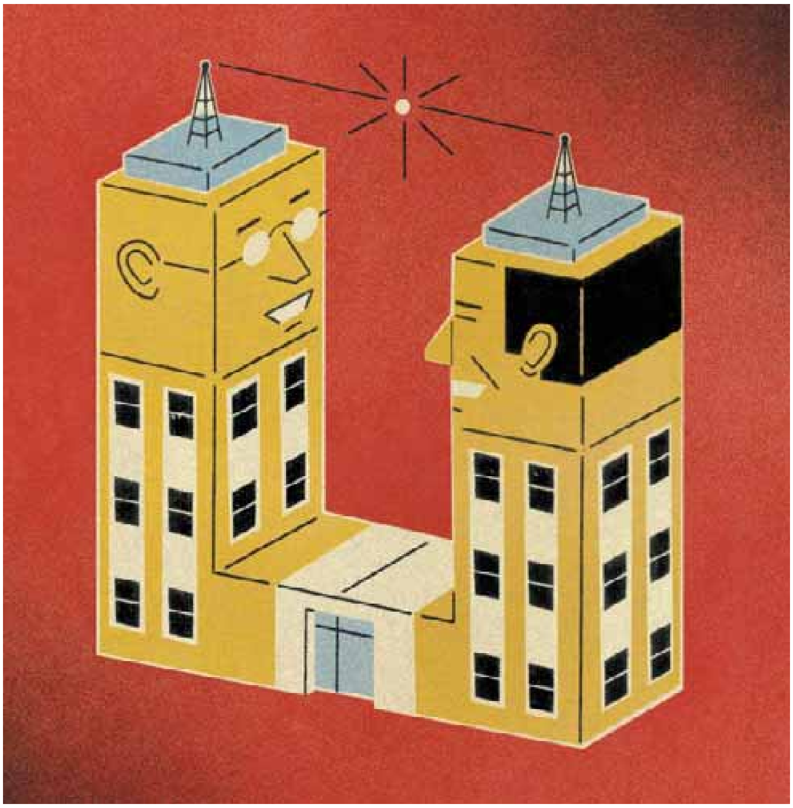
Soon after he arrived at Symantec, Thompson spun off several businesses and product lines, changed the management team, reassigned decision rights,

Where There's Health, There Are Profits

In our survey, more than half the respondents from resilient organizations characterized their companies as being more profitable than the average for their industry. But less than a third of the people from passive-aggressive companies said theirs was.



Source: Org DNA data set, 30,000 observations; Booz Allen analysis



and revised all the incentive systems – in short, "changed almost everything about the company." Thompson explains: "We chopped up all of the old signal paths. It's like what goes on in Florida when the hurricanes hit, one after another. The power lines are down; they're just crackling there on the ground. And somebody's got to reconnect them. We decided to seize the opportunity to reconnect them a different way."

Make decisions, and make them stick. Clarifying and articulating decision rights is often the first order of business in fixing a passive-aggressive organization, where decisions have been made, unmade, overturned, and second-guessed so many times that no one really knows who truly decides what any more. In many cases, decision-making authority has become lodged where it doesn't belong. When Thompson took over at Symantec, "the product manager was king. And the regional managers were even more autonomous." Regions were known to redesign packaging and sit on inventory they didn't want to sell.

"We had many people who could say no, but few people who could say yes and make it stick," Thompson explains. So one of the first things he did when he arrived was firmly establish, once and for all, what the respective roles of the regional and product managers should be. "We told the regions, 'Your job is execution. You're going to do what you're told to do. You're not a business unit. You are the sales engine of the company. Your job is to sell what we build, not to decide whether or not you want to sell it and then design your own company campaign around it.'"

Once decision rights are clarified, they must be respected. If they are, people in the organization begin to count on one another and to trust that what is planned will be done.

Early in his tenure, Thompson realized the company could save money by providing computer cables free only to customers who requested them instead of putting them in every box of software. At a meeting on cost reduction, everyone, including the executive responsible, agreed it should be done. But weeks later, the boxes still contained the cables. "We don't make decisions but once," Thompson told the executive. "If you've got a disagreement or a point of view, bring it up when we're going through the discussion. Don't hold back and give me this smiley kind of benign agreement. Go back and get it fixed. We're not shipping cables any more. And if you can't communicate that, I will.

"That was the shot heard around the world," Thompson says. "There was this epiphany, 'Wow, this guy's serious.'"

Spread the word – and the data. No organization can make good decisions without having access to the relevant information. But to know what's relevant, people must be clear about which issues deserve the highest priority. This is not just a matter of sending out a memo or two.

At 7-Eleven, for example, bright and early every Monday morning, the eight members of the executive committee and invited guests convene to discuss strategic issues and survey the week that was and the week coming up. They arrive knowing which of the 2,500 products in the 7-Eleven inventory are moving and which are not in its 5,800 stores across the United States and Canada. By 11 AM the senior executive team has determined the week's priorities and begins relaying them to all executives down to the vice president level. During the first half of this two-hour national videoconference, division VPs go over the updated forecast for the month and the quarter. At noon, department heads, product directors, category managers, and sales and marketing managers discuss issues at the store level that need to be bumped up to headquarters.

On Tuesdays at 11:15 AM, 7-Eleven's nearly 800 field consultants – each of whom oversees a group of stores – are debriefed in another videoconference. The call covers case studies, new merchandising issues, featured products, findings in test markets – everything the field consultants need to educate store owners and associates about that week's priorities. When these consultants head into the field after the call, they know exactly what news to deliver to the stores because they've heard it directly from the top. Clearly, the care in setting and keeping to priorities is paying off: As of July 2005, 7-Eleven had reported 35 consecutive quarters of same-store sales growth.

Match motivators to contribution. When Thompson arrived at Symantec, any executive who was promoted to vice president automatically was given a BMW. Senior management's bonuses were paid quarterly and were heavily skewed toward cash rather than stock. "So if the stock didn't do well, they didn't care," Thompson explains. "We [now] have a stock option plan that is broad based but not universal. One of the things we recognized early on was that if we were going to grow at the rate that we were growing, we had to be more selective in who we gave options to so as not to dilute the value of our stock. And so the first thing we did was identify a range of employees who were valuable to the company but didn't need equity to come to work, and we focused their compensation around cash bonuses. Then we increased the equity we gave to the engineers and other people that were critical to our long-term success." By paying the two groups differently, the new compensation scheme recognizes their distinctive importance.

"We changed the alignment throughout the organization," says Thompson. "Now everyone gets paid based upon revenue production as well as profit generation. My view was, 'Most of you don't have anything to do with profit. But all of you have something to do with revenue, so let's rebalance our incentives to reflect that reality.'"

• • •

It's only a matter of time before the diseased elements of a passive-aggressive organization overwhelm the healthy ones and drive the organization into financial distress. In fact, our research confirms a link between organizational health and profitability. Respondents who identify their organizations as resilient report better than average profitability nearly twice as often as respondents in passive-aggressive organizations (see the exhibit "Where There's Health, There Are Profits").

A full transformation of a passive-aggressive organization is impossible without the engagement of senior management. But even those in the middle of the organization can make a difference within their own scope of influence. Large organizations are made up of many small overlapping units. Even if they are not entirely independent, most of us can make changes in ours. If you are a brand manager in a passive-aggressive company, for instance, you can make it clear to your team that delivering on promises matters. Then find an opportunity to prove it – not a public hanging, but some signal that things have changed. When, say, your market researchers report in the staff meeting that the focus groups have to be postponed for two weeks, express disappointment that the team contract hasn't been followed. Make the point in the staff meeting so that everyone gets the message.

When such a message is delivered clearly and consistently, it sinks in. Slowly, your division can become a source of initiative in a sea of lassitude. You may not change the whole company overnight, but you just might begin to set a new tone.

1. In addition to the approximately 30,000 responses to our Web site (orgdna.com), our research also includes about 20,000 responses to the same survey given in the course of client engagements.

Reprint R0510E
To order, see page 159.

"Around here, Falstaff, we always use the word 'remember,' instead of 'recall.'"

DAVID BROWN

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Uncensored

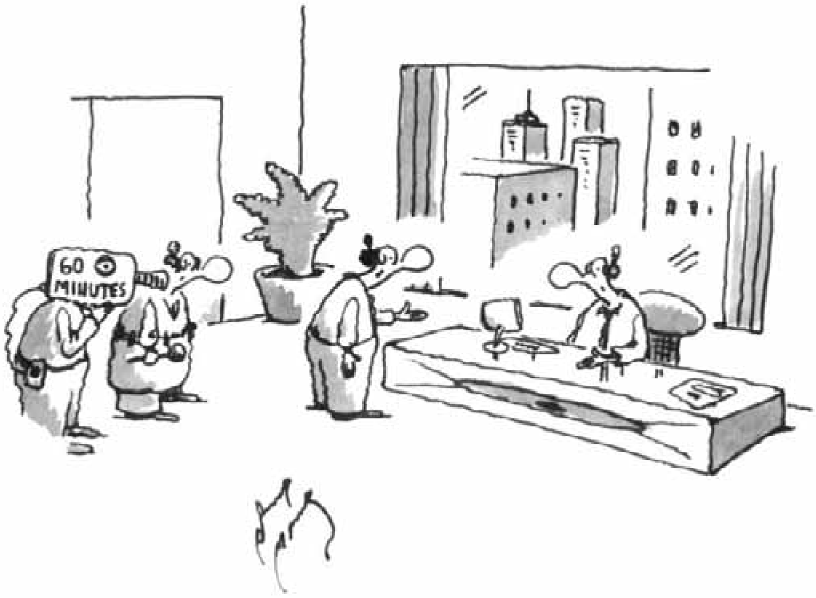
"Candor….is a willingness to speak the unspeakable, to expose unfulfilled commitments, to air the conflicts that undermine apparent consensus. Candor means that people express their real opinions."

Ram Charan
"Conquering a Culture of Indecision"
Harvard Business Review
April 2001

"I like it, but I don't think it will slide past the people in charge of quashing this kind of thing."

"Instead of relying on buzz, perhaps we should just go ahead and produce something."

MARK ANDERSON, SCOTT ARTHUR MASEAR, THOMAS RUNYAN, AND P.C. VEY



"Look at the bright side, sir. At least we've finally established brand recognition."

"I think I speak for all of us when I say what in God's name are you talking about?"

"What I lack in strategic thinking I more than make up for in my uncanny ability to know my limitations."

Board practices for monitoring technology investments vary widely and often wildly. As technology's cost, complexity, and consequences grow, directors need a framework to develop IT policies that fit the companies they oversee.

Information Technology and the Board of Directors

Ever since the Y2K scare, boards have grown increasingly nervous about corporate dependence on information technology. Since then, computer crashes, denial of service attacks, competitive pressures, and the need to automate compliance with government regulations have heightened board sensitivity to IT risk. Unfortunately, most boards remain largely in the dark when it comes to IT spending and strategy. Despite the fact that corporate information assets can account for more than 50% of capital spending, most boards fall into the default mode of applying a set of tacit or explicit rules cobbled together from the best practices of other firms. Few understand the full degree of their operational dependence on computer systems or the extent to which IT plays a role in shaping their firms' strategies.

by Richard Nolan and F. Warren McFarlan

ALEX NABAUM

This state of affairs may seem excusable because to date there have been no standards for IT governance. Certainly, board committees understand their roles with regard to other areas of corporate control. In the U.S., the audit committee's task, for example, is codified in a set of Generally Accepted Accounting Principles and processes and underscored by regulations such as those of the New York Stock Exchange and Securities and Exchange Commission. Likewise, the compensation committee acts according to generally understood principles, employing compensation consulting firms to verify its findings and help explain its decisions to shareholders. The governance committee, too, has a clear mission: to look at the composition of the board and recommend improvements to its processes. To be sure, boards often fail to reach set standards, but at least there are standards.

Because there has been no comparable body of knowledge and best practice, IT governance doesn't exist per se. Indeed, board members frequently lack the fundamental knowledge needed to ask intelligent questions about not only IT risk and expense but also competitive risk. This leaves the CIOs, who manage critical corporate information assets, pretty much on their own. A lack of board oversight for IT activities is dangerous; it puts the firm at risk in the same way that failing to audit its books would.

Understanding this, a small group of companies has taken matters into its own hands and established rigorous IT governance committees. Mellon Financial, Novell, Home Depot, Procter & Gamble, Wal-Mart, and FedEx, among others, have taken this step, creating board-level IT committees that are on a par with their audit, compensation, and governance committees. When the IT governance committee in one of these companies assists the CEO, the CIO, senior management, and the board in driving technology decisions, costly projects tend to remain under control, and the firm can carve out competitive advantage.

The question is no longer whether the board should be involved in IT decisions; the question is, how? Having observed the ever-changing IT strategies of hundreds of firms for over 40 years, we've found that there is no one-size-fits-all model for board supervision of a company's IT operations. The correct IT approach depends on a host of factors, including a company's history, industry, competitive situation, financial position, and quality of IT management. A strategy that works well for a clothing retailer is not appropriate for a large airline; the strategy that works for eBay can't work for a cement company. Creating a board-level committee is not, however, a best practice all companies should adopt. For many firms – consulting firms, small retailers, and book publishers, for instance – it would be a waste of time.

In this article, we show board members how to recognize their firms' positions and decide whether they should take a more aggressive stance. We illustrate the conditions under which boards should be less or more involved in IT decisions. We delineate what an IT governance committee should look like in terms of charter, membership, duties, and overall agenda. We offer recommendations for developing IT governance policies that take into account an organization's operational and strategic needs, as well as suggest what to do when those needs change. As we demonstrate in the following pages, appropriate board governance can go a long way toward helping a company avoid unnecessary risk and improve its competitive position.

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The Four Modes

We've found it helpful to define the board's involvement according to two strategic issues: The first is how much the company relies on cost-effective, uninterrupted, secure, smoothly operating technology systems (what we refer to as "defensive" IT). The second is how much the company relies on IT for its competitive edge through systems that provide new value-added services and products or high responsiveness to customers ("offensive" IT). Depending on where companies locate themselves on a matrix we call "The IT Strategic Impact Grid" (at right), technology governance may be a routine matter best handled by the existing audit committee or a vital asset that requires intense board-level scrutiny and assistance.

Defensive IT is about operational reliability. Keeping IT systems up and running is more important in the company's current incarnation than leapfrogging the competition through the clever use of emerging technology. One famously defensive firm is American Airlines, which developed the SABRE reservation system in the late 1960s. Once a source of innovation and strategic advantage, the SABRE system is now the absolute backbone of American's operations: When the system goes down, the airline grinds to a complete halt. Boards of firms like this need assurance that the technology systems are totally protected against potential operational disasters – computer bugs, power interruptions, hacking, and so on – and that costs remain under control.

Offensive IT places strategic issues either over, or on the same level as, reliability. Offensive IT projects tend to be ambitious and risky because they often involve substantial organizational change. An offensive stance is called for when a company needs to alter its technology strategy to compete more effectively or to raise the firm to a position of industry leadership. Because of the resources

The IT Strategic Impact Grid

How a board goes about governing IT activities generally depends on a company's size, industry, and competitive landscape. Companies in support mode are least dependent on IT; those in factory mode are much more dependent on it but are relatively unambitious when it comes to strategic use. Firms in turnaround mode expect that new systems will change their business; those in strategic mode require dependable systems as well as emerging technologies to hold or advance their competitive positions.

LOW TO HIGH NEED FOR RELIABLE INFORMATION TECHNOLOGY

DEFENSIVE

Factory Mode

- If systems fail for a minute or more, there's an immediate loss of business.
- Decrease in response time beyond one second has serious consequences for both internal and external users.
- Most core business activities are online.
- Systems work is mostly maintenance.
- Systems work provides little strategic differentiation or dramatic cost reduction.

Support Mode

- Even with repeated service interruptions of up to 12 hours, there are no serious consequences.
- User response time can take up to five seconds with online transactions.
- Internal systems are almost invisible to suppliers and customers. There's little need for extranet capability.
- Company can quickly revert to manual procedures for 80% of value transactions.
- Systems work is mostly maintenance.

OFFENSIVE

Strategic Mode

- If systems fail for a minute or more, there's an immediate loss of business.
- Decrease in response time beyond one second has serious consequences for both internal and external users.
- New systems promise major process and service transformations.
- New systems promise major cost reductions.
- New systems will close significant cost, service, or process performance gap with competitors.

Turnaround Mode

- New systems promise major process and service transformations.
- New systems promise major cost reductions.
- New systems will close significant cost, service, or process performance gap with competitors.
- IT constitutes more than 50% of capital spending.
- IT makes up more than 15% of total corporate expenses.

LOW TO HIGH NEED FOR NEW INFORMATION TECHNOLOGY

required to take an offensive position, financially and competitively strong companies usually have to be intensively involved in IT on all levels. Wal-Mart, for example, is replacing bar codes with radio frequency identification (RFID) technology, which effectively drives the supply chain directly from the supplier to the warehouse without the need for scanning by associates.

Firms can be either defensive or offensive in their strategic approach to IT – approaches we call "modes." Let's look at each mode in turn.

Support Mode (Defensive). Firms in this mode have both a relatively low need for reliability and a low need for strategic IT; technology fundamentally exists to support employees' activities. The Spanish clothier Zara, which began as a small retail shop, is a good example; the company keeps strict control over its supply chain operations by designing, producing, and distributing its own clothing. Though IT is used in these areas, the company won't suffer terribly if a system goes down. (For more on Zara, see Kasra Ferdows, Michael A. Lewis, and Jose A.D. Machuca, "Rapid-Fire Fulfillment," HBR November 2004.) Core business systems are generally run on a batch cycle; most error correction and backup work is done manually. Customers and suppliers don't have access to internal systems. Companies in support mode can suffer repeated service interruptions of up to 12 hours without serious bottom-line consequences, and high-speed Internet response time isn't critical.

For such firms, the audit committee can review IT operations. The most critical questions for members to ask are: "Should we remain in support mode, or should we change our IT strategy to keep up with or surpass the

Asking the Tough Questions

What board members need to know about IT depends on the company's strategic position. Firms in support and factory mode should have their audit committees, with the help of an IT expert, query management. Organizations in turnaround and strategic mode will want the assistance of a full-fledged IT committee in getting answers to their questions.

If your company is in **Support Mode,** ask the questions in set **A**.

If your company is in **Factory Mode,** ask the questions in sets **A** and **B**.

If your company is in **Turnaround Mode,** ask the questions in sets **A** and **C**.

If your company is in **Strategic Mode,** ask the questions in sets **A**, **B**, and **C**.

A

* Has the strategic importance of our IT changed?
* What are our current and potential competitors doing in the area of IT?
* Are we following best practices in asset management?
* Is the company getting adequate ROI from information resources?
* Do we have the appropriate IT infrastructure and applications to exploit the development of our intellectual assets?

B

* Has anything changed in disaster recovery and security that will affect our business's continuity planning?
* Do we have in place management practices that will prevent our hardware, software, and legacy applications from becoming obsolete?
* Do we have adequate protection against denial of service attacks and hackers?
* Are there fast-response processes in place in the event of an attack?
* Do we have management processes in place to ensure 24/7 service levels, including tested backup?
* Are we protected against possible intellectual-property-infringement lawsuits?
* Are there any possible IT-based surprises lurking out there?

C

* Are our strategic IT development plans proceeding as required?
* Is our applications portfolio sufficient to deal with a competitive threat or to meet a potential opportunity?
* Do we have processes in place that will enable us to discover and execute any strategic IT opportunities?
* Do we have processes in place to guard against IT risk?
* Do we regularly benchmark to maintain our competitive cost structure?

competition?" and "Are we spending money wisely and not just chasing after new technology fads?" (In this mode, the spending mantra is, "Don't waste money." For a list of questions appropriate to each mode, see the exhibit "Asking the Tough Questions.")

Factory Mode (Defensive). Companies in this mode need highly reliable systems but don't really require state-of-the-art computing. They resemble manufacturing plants; if the conveyor belts fail, production stops. (Airlines and other businesses that depend on fast, secure, real-time data response fall into this group.) These companies are much more dependent on the smooth operation of their technology, since most of their core business systems are online. They suffer an immediate loss of business if systems fail even for a minute; a reversion to manual procedures is difficult, if not impossible. Factory-mode firms generally depend on their extranets to communicate with customers and suppliers. Typically, factory-mode organizations are not interested in being the first to implement a new technology, but their top management and boards need to be aware of leading-edge practice and monitor the competitive landscape for any change that would require a more aggressive use of IT.

Because business continuity in IT operations is critical for these firms, the board needs to make sure that disaster recovery and security procedures are in place. The audit committee for a large East Coast medical center, for example, recently authorized a full disaster recovery, security, and operational environment review simply to ensure that appropriate safeguards were there. The study was expensive but completely necessary because, in the event of a failure, patients' lives would be at risk. (In this mode, the spending mantra is, "Don't cut corners.")

Turnaround Mode (Offensive). Companies in the midst of strategic transformation frequently bet the farm on new technology. In this mode, technology typically accounts for more than 50% of capital expenditures and more than 15% of corporate costs. New systems promise major process and service improvements, cost reductions, and a competitive edge. At the same time, companies in this mode have a comparatively low need for reliability when it comes to existing business systems; like companies in support mode, they can withstand repeated service interruptions of up to 12 hours without serious consequences, and core business activities remain on a batch cycle. Once the new systems are installed, however, there is no possible reversion to manual systems because all procedures have been captured into databases.

Companies usually enter turnaround mode with a major IT project that requires a big reengineering effort, often accompanied by the decision to outsource or move a substantial portion of their operations offshore. Most firms don't spend a long time in turnaround mode; once the change is made, they move into either factory mode or strategic mode. American Airlines functioned in turnaround mode when it created the SABRE system; now it lives in factory mode. Similarly, the Canadian company St. Marys Cement operated in support mode until it began equipping its trucks with GPS devices, which pushed it into temporary turnaround mode.

Board oversight is critical for companies in turnaround mode; strategic IT plans must proceed on schedule and on budget, particularly when competitive advantage is at stake. (Here, the spending mantra is, "Don't screw it up.")

Strategic Mode (Offensive). For some companies, total innovation is the name of the game. New technology informs not only the way they approach the marketplace but also the way they carry out daily operations. Strategic-mode firms need as much reliability as factory-mode firms do, but they also aggressively pursue process and service opportunities, cost reductions, and competitive advantages. Like turnaround firms, their IT expenditures are large.

Not every firm wants or needs to be in this mode; some are forced into it by competitive pressures. Consider Boeing, a company that dominated the commercial-airline-manufacturing industry until Airbus took the lead. Now convinced that its future rests on the successful design, marketing, and delivery of a new commercial plane, Boeing has embarked on an ambitious technology project that it hopes will return the company to industry dominance. Its new 787 plane, due in 2008, will be equipped with a new lightweight carbon composite skin. Since carbon composite skin is a relatively new material to be used so extensively in a commercial airplane, a neural network will be embedded in the fuselage and wings to constantly monitor load factors and make adjustments as changing conditions warrant. The 787 will be manufactured and assembled through the world's largest project management system, which will simultaneously coordinate thousands of computers and automate an integrated supply chain comprising hundreds of global partners. Each supplier will send components via specially equipped 747s to Boeing's site in Everett, Washington, where the 787 will be assembled in a mere three days, ensuring low costs and fast delivery. The 787 is like a jigsaw puzzle whose pieces must fall into perfect alignment at once, making Boeing both operationally and strategically dependent on IT.

As is the case for firms in turnaround mode, board-level IT governance is critical in strategic mode. Organizations require a fully formed IT oversight committee with at least one IT expert as a member. (The mantra for strategic-mode companies is, "Spend what it takes, and monitor results like crazy.")

As we said at the outset, the specific action a company should take with respect to IT oversight depends on which mode it's in. Regardless of its business, it behooves any company to take an in-depth look at its current business through the IT lens. In doing so, a company gains a much firmer grasp of what it needs to be successful.

How to Conduct IT Oversight

Having identified which mode they currently inhabit, companies then need to decide what kind of IT expertise they need on the board. Firms that require a high level of reliability need to focus on managing IT risk. The job of these boards is to assure the completeness, quality, security, reliability, and maintenance of existing IT investments that support day-to-day business processes. Rarely will such companies want a separate IT committee. Instead, the audit committee must do double duty as the IT governance team and delve deeply into the quality of the company's IT systems.

On the other hand, companies that need to go beyond defensive mode require an independent IT governance committee, rather than just having an IT expert serve on the audit committee. The IT governance committee's job is to keep the board apprised of what other organizations–particularly competitors – are doing with technology.

Below, we outline the general duties of boards according to their modes.

Inventory the assets (all modes). A board needs to understand the overall architecture of its company's IT applications portfolio as well as its asset management strategy. The first step is to find out what kinds of hardware, software, and information the company owns so as to determine whether it's getting adequate return from its IT investments.

Physical IT assets–counted as computer hardware–are relatively easy to inventory; intangible assets are not. Despite the fact that intangible assets have largely been ignored by the accounting field, most companies are increasingly reliant on them. Companies have huge investments in applications software, ranging from customer and HR databases to integrated supply chains. The board must ensure that management knows what information resources are out there, what condition they are in, and what role they play in generating revenue. One rule of thumb in determining intangible assets is to first measure the hardware inventory – including all mainframes, servers, and PCs–and then multiply that by ten. This renders a rough notion of what the software inventory will be (including off-the-shelf and proprietary software). The next step is to assure that the IT organization sorts the wheat from the chaff by determining the number and location of aging and legacy programs, and then decide which should be upgraded or maintained.

The board will also want to ensure that its company has the right IT infrastructure and applications in place to develop intellectual assets such as customer feedback about products and services. It needs to know how well employees can use IT systems to analyze customer feedback and develop or improve products and services.

Assure security and reliability (factory and strategic modes). Ideally, boards of companies in factory and strategic modes should conduct regular reviews of their security and reliability measures so that any interruption of service doesn't send a company into a tailspin. Unfortunately, and all too often, oversight takes place following a crisis.

With the development of highly integrated IT networks within and outside the company, proper security has become paramount. An attack by a hacker or a virus can reduce profits by millions of dollars. An attack on Amazon, for example, would cost the company $600,000 an hour in revenue. If Cisco's systems were down for a day, the company would lose $70 million in revenues. Thus, the board needs to ensure that management is continually evaluating the company's networks for security breaches. (Some companies actually work with would-be hackers to test vulnerability to threats.)

A board will also want to make sure that service outages don't occur in the case of power failures or natural disasters. IT services are analogous to electrical power; an outage of days can trigger the demise of a company, particularly one in defensive mode. For this reason, backup systems must be continually tested to make sure that they actually work. IT also needs to ensure that service continues even while maintenance is under way, so proper detours and backups need to be in place. Many companies use diesel generators to keep backup systems running, but as the gigantic power outage that struck the East Coast of the U.S. in August 2003 demonstrated, the diesel can run out if the backup systems are in continuous use. In such cases, companies must take special steps. (Following the 2003 blackout, Delta Air Lines arranged for generator fuel to arrive by helicopter in the event of another shortage.)

Avoid surprises (factory, turnaround, and strategic modes). No board wants to be taken unawares, and the most frequent source of IT-related surprises is from lax or ineffective project management. The larger the IT project, the higher the risk. Consider what happened to candy maker Hershey's when an expansion of its brand new ERP system blew up in the company's face. By the time Halloween rolled around, the company still could not keep track of orders, revenues, and inventory. Best estimates are that this cost the company $151 million.

Even companies that are supposed to be technology experts can botch a project, as EDS proved when it lost $2 billion on a contract to build an intranet for the U.S. Navy. Because EDS didn't fully understand the scope of the strategically important Navy initiative, the project suffered from unexpected delays and technical setbacks, costing EDS massive write-downs that ultimately drove

A LACK OF BOARD oversight for IT activities is dangerous; it puts the firm at risk in the same way that failing to audit its books would.

its debt to junk bond status. To avoid such unwanted surprises, boards must ensure that appropriate project management systems are in place and that key decision points along the way are elevated to the appropriate level so that management can decide whether the project is still worth doing.

Companies can also be caught unawares if they don't have adequate service level agreements (SLAs) with vendors or clients, particularly when they choose to outsource their IT activities. A solid, well-thought-out SLA that makes explicit specific terms, deliverables, and responsibilities can help firms avoid serious project management problems. The agreement should guarantee that the needs of all the diverse groups within the company – such as marketing, sales, call center operations, and bad debt collection – are met under the terms of the agreement.

Additionally, legacy systems can present unwanted surprises because companies are so dependent on them, as the Y2K problem demonstrated. Rather than replace those systems, companies tend to build on top of them. And firms running batch-oriented systems often overlay them with new online user interfaces. This can create serious problems for accounting departments: A user of an online query system, for example, may believe that the answer he or she receives is up-to-the-minute; but if, in fact, data files are updated in batch mode, the information could be many hours out of date. Having to sort through such misinformation might require accounting departments to hire additional staff to ensure that financial reporting is done on time. To avoid such problems, the governance committee needs to decide whether it is more economical to maintain legacy hardware, software, and applications or to replace them. It's relatively easy for IT departments to determine when computer hardware needs upgrading. But when it comes to intangible assets such as legacy databases, the question of maintenance versus replacement becomes trickier; it's not uncommon to find maintenance taking up 90% of IT programming expenditures.

An IT Governance Committee Calendar

To be successful, an IT oversight committee must ensure that its discussions with senior management are deep and ongoing. The committee can help management visualize IT's impact on the firm. We recommend that it develop a to-do calendar of the defensive, offensive, and administrative oversight tasks it needs to carry out over the year. Here's a sample calendar.

DEFENSIVE GOVERNANCE	Frequency
IT Projects/Architecture	
Receive update of strategic projects.	Quarterly
Receive update of technical architecture and critique it.	As Needed
Ensure update of applications architecture and critique it.	As Needed
Receive and review update of project investments.	Annual
IT Security	
Critique IT security practices.	Annual
Review and appraise IT disaster-recovery capabilities.	Annual
Review security-related audit findings.	As Needed
Review current developments in security practices, standards, and new security-related technology strategies.	Annual
Internal Controls	
Review IT internal control practices.	Annual
Review IT-related audit findings.	As Needed
Send reports to audit committee regarding IT systems and processes affecting internal controls.	Annual

OFFENSIVE GOVERNANCE	Frequency
Advisory Role	
Advise senior IT management team.	As Needed
Stay informed of, assess, and advise the company's senior IT management team about new technologies, applications, and systems that relate to or affect the company's IT strategy or programs.	As Needed
Receive update of IT strategy and critique it.	Annual
Review and critique business plan (annual and three-year).	Annual
Review internal IT assessment measurements and critique action plan.	Annual
Hold private session with CFO.	Quarterly
Strategic Technology Scanning	
Visit other companies to observe technology approaches and strategies.	Annual
Engage outside experts as required to provide third-party opinions about the company's technology strategy.	As Needed
Report to the board on matters within the scope of the committee, as well as on any special issues that merit the board's attention.	Quarterly
Perform other duties as appropriate to ensure that the company's IT programs effectively support the company's business objectives and strategies.	As Needed

ADMINISTRATIVE	Frequency
Review and assess the adequacy of the IT oversight charter and recommend proposed changes to the board.	As Needed
Evaluate IT oversight committee's effectiveness (self-assessment).	Annual
Approve minutes of prior meetings.	Quarterly
Present report to board regarding the IT oversight committee's activities.	Annual
Hold executive session with committee members.	As Needed
Approve IT committee meeting planner for the upcoming year, and approve mutual expectations with management.	Annual

Watch out for legal problems (turnaround and strategic modes). Companies can be subject to legal problems if they don't tread carefully around the intellectual property issues relating to IT. The advent of the Linux operating system, for example, has been a boon to many companies; at the same time, making free use of associated patented intellectual property has exposed them to legal risks. Consider SCO's $3 billion lawsuit against IBM, in which SCO alleges that IBM illegally incorporated SCO's intellectual property to the code base of the Linux operating system. Cases like this have made it clear that organizations need to stay alert for possible problems and avoid the expensive distraction of an intellectual property dispute involving IT. The board needs to watch out for such risks and be ready to bring in appropriate legal counsel when necessary to keep the senior management team from being distracted.

Keep an eye out for fresh threats and opportunities (turnaround and strategic modes). It's a good idea for committee members to interrogate the CIO and line management about new products they may have seen or heard about at technology trade shows or industry conferences. It is also good practice to monitor firms in other industries that have a reputation for making effective use of leading-edge technology applications.

The committee must be on the lookout for technology-based competitive threats that could place a company in what we call "strategic jeopardy," which occurs when executive management is asleep at the switch vis-à-vis the competition. For example, the board can hire, or ask management to hire, a consulting company to gather intelligence, do benchmarking, and develop a scenario of possible threats from competitors, as well as outline opportunities. IT committees should also be sure that management has created a good customer feedback system that allows customers to offer opinions about competitors' products and services. In addition, it's important to monitor companies that may have the means and inclination to become competitors. Had supermarket chains been apprised of what Wal-Mart was up to with RFID, they might not have found themselves blindsided by the retail giant's aggressive supply-chain advances in the grocery business.

Finally, boards of firms in offensive modes must constantly scan for opportunities as technologies advance and the cost of computing drops. Anything that has been performed manually, for example, presents an opportunity not only to automate but also to raise the bar for products or services. Otis Elevator, for instance, dramatically improved its product delivery cycle by intelligently using IT to replace a paper-based tracking and fulfillment system. Once a contract for an elevator, escalator, or walkway is signed, a program called eLogistics sends project information directly from the field via nearly 1,000 local area networks and 1,000 global wide-area networks to contract logistics centers. The result has been a huge drop in inventory and a fivefold improvement in delivery time.

The IT strategy that works for a clothing retailer is not appropriate for a large airline; THE STRATEGY that works for eBay can't work for a cement company.

Building the IT Governance Committee

How do you set up an IT governance committee? A company that decides it needs board-level IT oversight must do three things: select the appropriate members and the chairman, determine the group's relationship to the audit committee, and prepare the charter. The first two are especially important.

We recommend that the IT governance group be made up of independent directors, as is the case with audit and compensation committees. Chairmanship is also critical. For firms in support, factory, or turnaround modes, the chairperson need not be an IT expert but should certainly be a tough-minded, IT-savvy business executive – either a CEO or a top manager who has overseen the use of IT to gain strategic advantage in another organization.

In any case, at least one person on the committee should be an IT expert who should operate as a peer at the senior management and board level. The expert's job is to challenge entrenched in-house thinking. He or she should not think ill of technology-averse cultures and must be a skilled communicator who does not hide behind technology jargon or talk down to board members. The expert should help the committee avoid dwelling on the difficulties of the work and emphasize instead the opportunities. The focus should be on the big picture: Conversations about IT strategy are hard and can be discouraging if the committee gets dragged down in technical details. (In fact, when looking for someone who fits these criteria, boards may find that many talented CIOs and CTOs drop off the list of potential IT committee members.) The IT expert must have not only a solid grounding in the firm's overall business needs but also a holistic view of the organization and its systems architecture. This is particularly important if the firm chooses to outsource its functions and connect multiple vendors across a network. The expert must also thoroughly understand the underlying dynamics governing changes in technology and their potential to alter the business's economic outlook.

Generally speaking, the IT expert serves much the same function as the certified financial expert on an audit committee. A CIO or CTO with solid experience in the management of IT qualifies; for example, the IT oversight committee chairman for the Great Atlantic & Pacific Tea Company (A&P) was previously CEO of an extremely successful supermarket chain on the West Coast, where he achieved impressive business results through effective IT system implementation and management. As chair of the IT committee, he helps balance his company's short-term business needs with long-term IT investments.

Unfortunately, skilled, business-oriented technology strategists are in short supply. In the absence of such a person within a company, an IT consultant who can help sort out technology issues can fit the bill, as might a divisional CEO or COO who is actively managing IT. Alternatively, a manager who has served in an influential technology company such as Microsoft or Oracle can help a firm determine its place on the strategic impact grid, begin to embrace emerging technologies, and locate other experts who can serve on the committee.

Businesses in strategic mode should have an IT oversight committee chaired by an IT expert. In this mode, it's even more important to get the membership right. For example, the chairman of the IT committee for Novell – a company in strategic mode – founded a major IT-strategy-consulting company, sold it to one of the then Big Six accounting firms, and continued as a senior partner in that firm's IT consulting business. Two other members of Novell's IT committee previously served as CIOs in major *Fortune* 100 companies; they also serve on Novell's audit committee.

We recommend that the relationship of the IT governance committee to the audit committee be very close, because IT issues can affect economic and regulatory matters such as Sarbanes-Oxley compliance. For this reason, it's a good idea to have one audit committee member serve on the IT oversight committee. The charter of the IT committee should explicitly describe its relationship to the audit group, as well as its organization, purpose, oversight responsibilities, and meeting schedule (see the exhibit "An IT Governance Committee Calendar").

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Regardless of a company's position, top-level commitment is critical if the board is to engage in IT governance. Board members and senior managers must identify and carefully gauge their current positions on the IT impact grid and decide whether setting up an IT oversight committee is necessary, given the company's current situation. If the need is not clearly understood, or if general buy-in for establishing such a committee – which necessarily includes an IT expert among its members – doesn't exist, then the company shouldn't do it. Any effort to do so will be a waste of time, and failure will sour the chances of establishing such a committee later.

That said, it's clear that as more and more companies in support and factory modes change tactics, and as other firms choose to adopt new technologies to stay ahead of the game, board-level technology governance will become increasingly important. This is good news, for when top managers understand the degree to which they must be accountable for technology, for project expenditures, and for monitoring return on investment from IT, they will do a better job of ensuring that critical systems function as promised. One thing is certain: Given the dizzying pace of change in the world of technology, and the changes IT can force upon a business, there is no such thing as too much accountability.

> The IT expert's job is to challenge entrenched in-house thinking. He or she must be a SKILLED COMMUNICATOR who does not hide behind technology jargon or talk down to board members.

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Companies must pay as much attention to the hard side of change management as they do to the soft aspects. By rigorously focusing on four critical elements, they can stack the odds in favor of success.

by Harold L. Sirkin, Perry Keenan, and Alan Jackson

THE HARD SIDE OF CHANGE MANAGEMENT

WHEN FRENCH NOVELIST Jean-Baptiste Alphonse Karr wrote *"Plus ça change, plus c'est la même chose,"* he could have been penning an epigram about change management. For over three decades, academics, managers, and consultants, realizing that transforming organizations is difficult, have dissected the subject. They've sung the praises of leaders who communicate vision and walk the talk in order to make change efforts succeed. They've sanctified the importance of changing organizational culture and employees' attitudes. They've teased out the tensions between top-down transformation efforts and participatory approaches to change. And they've exhorted companies to launch campaigns that appeal

DANIEL BEJAR

to people's hearts and minds. Still, studies show that in most organizations, two out of three transformation initiatives fail. The more things change, the more they stay the same.

Managing change *is* tough, but part of the problem is that there is little agreement on what factors most influence transformation initiatives. Ask five executives to name the one factor critical for the success of these programs, and you'll probably get five different answers. That's because each manager looks at an initiative from his or her viewpoint and, based on personal experience, focuses on different success factors. The experts, too, offer different perspectives. A recent search on Amazon.com for books on "change and management" turned up 6,153 titles, each with a distinct take on the topic. Those ideas have a lot to offer, but taken together, they force companies to tackle many priorities simultaneously, which spreads resources and skills thin. Moreover, executives use different approaches in different parts of the organization, which compounds the turmoil that usually accompanies change.

In recent years, many change management gurus have focused on soft issues, such as culture, leadership, and motivation. Such elements are important for success, but managing these aspects alone isn't sufficient to implement transformation projects. Soft factors don't directly influence the outcomes of many change programs. For instance, visionary leadership is often vital for transformation projects, but not always. The same can be said about communication with employees. Moreover, it isn't easy to change attitudes or relationships; they're deeply ingrained in organizations and people. And although changes in, say, culture or motivation levels can be indirectly gauged through surveys and interviews, it's tough to get reliable data on soft factors.

What's missing, we believe, is a focus on the not-so-fashionable aspects of change management: the hard factors. These factors bear three distinct characteristics. First, companies are able to measure them in direct or indirect ways. Second, companies can easily communicate their importance, both within and outside organizations. Third, and perhaps most important, businesses are capable of influencing those elements quickly. Some of the hard factors that affect a transformation initiative are the time necessary to complete it, the number of people required to execute it, and the financial results that intended actions are expected to achieve. Our research shows that change projects fail to get off the ground when companies neglect the hard factors. That doesn't mean that executives can ignore the soft elements; that would be a grave mistake. However, if companies don't pay attention to the hard issues first, transformation programs will break down before the soft elements come into play.

That's a lesson we learned when we identified the common denominators of change. In 1992, we started with the contrarian hypothesis that organizations handle transformations in remarkably similar ways. We researched projects in a number of industries and countries to identify those common elements. Our initial 225-company study revealed a consistent correlation between the outcomes (success or failure) of change programs and four hard factors: project *duration,* particularly the time between project reviews; performance *integrity,* or the capabilities of project teams; the *commitment* of both senior executives and the staff whom the change will affect the most; and the additional *effort* that employees must make to cope with the change. We called these variables the DICE factors because we could load them in favor of projects' success.

We completed our study in 1994, and in the 11 years since then, the Boston Consulting Group has used those four factors to predict the outcomes, and guide the execution, of more than 1,000 change management initiatives worldwide. Not only has the correlation held, but no other factors (or combination of factors) have predicted outcomes as well.

The Four Key Factors

If you think about it, the different ways in which organizations combine the four factors create a continuum – from projects that are set up to succeed to those that are set up to fail. At one extreme, a short project led by a skilled, motivated, and cohesive team, championed by top management and implemented in a department that is receptive to the change and has to put in very little additional effort, is bound to succeed. At the other extreme, a long, drawn-out project executed by an inexpert, unenthusiastic, and disjointed team, without any top-level sponsors and targeted at a function that dislikes the change and has to do a lot of extra work, will fail. Businesses can easily identify change programs at either end of the spectrum, but most initiatives occupy the middle ground where the likelihood of success or failure is difficult to assess. Executives must study the four DICE factors carefully to figure out if their change programs will fly – or die.

Duration. Companies make the mistake of worrying mostly about the time it will take to implement change

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programs. They assume that the longer an initiative carries on, the more likely it is to fail – the early impetus will peter out, windows of opportunity will close, objectives will be forgotten, key supporters will leave or lose their enthusiasm, and problems will accumulate. However, contrary to popular perception, our studies show that a long project that is reviewed frequently is more likely to succeed than a short project that isn't reviewed frequently. Thus, the time between reviews is more critical for success than a project's life span.

Companies should formally review transformation projects at least bimonthly since, in our experience, the probability that change initiatives will run into trouble rises exponentially when the time between reviews exceeds eight weeks. Whether reviews should be scheduled even more frequently depends on how long executives feel the project can carry on without going off track. Complex projects should be reviewed fortnightly; more familiar or straightforward initiatives can be assessed every six to eight weeks.

Scheduling milestones and assessing their impact are the best way by which executives can review the execution of projects, identify gaps, and spot new risks. The most effective milestones are those that describe major actions or achievements rather than day-to-day activities. They must enable senior executives and project sponsors to confirm that the project has made progress since the last review took place. Good milestones encompass a number of tasks that teams must complete. For example, describing a particular milestone as "Consultations with Stakeholders Completed" is more effective than "Consult Stakeholders" because it represents an achievement and shows that the project has made headway. Moreover, it suggests that several activities were completed – identifying stakeholders, assessing their needs, and talking to them about the project. When a milestone looks as though it won't be reached on time, the project team must try to understand why, take corrective actions, and learn from the experience to prevent problems from recurring.

Review of such a milestone – what we refer to as a "learning milestone" – isn't an impromptu assessment of the Monday-morning kind. It should be a formal occasion during which senior-management sponsors and the project team evaluate the latter's performance on all the dimensions that have a bearing on success and failure. The team must provide a concise report of its progress, and members and sponsors must check if the team is on track to complete, or has finished all the tasks to deliver, the milestone. They should also determine whether achieving the milestone has had the desired effect on the company; discuss the problems the team faced in reaching the milestone; and determine how that accomplishment will affect the next phase of the project. Sponsors and team members must have the power to address weaknesses. When necessary, they should alter processes, agree to push for more or different resources, or suggest a new direction. At these meetings, senior executives must pay special attention to the dynamics within teams, changes in the organization's perceptions about the initiative, and communications from the top.

Integrity. By performance integrity, we mean the extent to which companies can rely on teams of managers, supervisors, and staff to execute change projects successfully. In a perfect world, every team would be flawless, but no business has enough great people to ensure that. Besides, senior executives are often reluctant to allow star performers to join change efforts because regular work can suffer. But since the success of change programs depends on the quality of teams, companies must free up the best staff while making sure that day-to-day operations don't falter. In companies that have succeeded in implementing change programs, we find that employees go the extra mile to ensure their day-to-day work gets done.

Since project teams handle a wide range of activities, resources, pressures, external stimuli, and unforeseen obstacles, they must be cohesive and well led. It's not enough for senior executives to ask people at the watercooler if a project team is doing well; they must clarify members' roles, commitments, and accountability. They must choose the team leader and, most important, work out the team's composition.

Smart executive sponsors, we find, are very inclusive when picking teams. They identify talent by soliciting

THE FOUR FACTORS

These factors determine the outcome of any transformation initiative.

D > The **duration** of time until the change program is completed if it has a short life span; if not short, the amount of time between reviews of milestones.

I > The project team's performance **integrity**; that is, its ability to complete the initiative on time. That depends on members' skills and traits relative to the project's requirements.

C > The **commitment** to change that top management (C1) and employees affected by the change (C2) display.

E > The **effort** over and above the usual work that the change initiative demands of employees.

names from key colleagues, including human resource managers; by circulating criteria they have drawn up; and by looking for top performers in all functions. While they accept volunteers, they take care not to choose only supporters of the change initiative. Senior executives personally interview people so that they can construct the right portfolio of skills, knowledge, and social networks. They also decide if potential team members should commit all their time to the project; if not, they must ask them to allocate specific days or times of the day to the initiative. Top management makes public the parameters on which it will judge the team's performance and how that evaluation fits into the company's regular appraisal process. Once the project gets under way, sponsors must measure the cohesion of teams by administering confidential surveys to solicit members' opinions.

Executives often make the mistake of assuming that because someone is a good, well-liked manager, he or she will also make a decent team leader. That sounds reasonable, but effective managers of the status quo aren't necessarily good at changing organizations. Usually, good team leaders have problem-solving skills, are results oriented, are methodical in their approach but tolerate ambiguity, are organizationally savvy, are willing to accept responsibility for decisions, and while being highly motivated, don't crave the limelight. A CEO who successfully led two major transformation projects in the past ten years used these six criteria to quiz senior executives about the caliber of nominees for project teams. The top management team rejected one in three candidates, on average, before finalizing the teams.

Commitment. Companies must boost the commitment of two different groups of people if they want change projects to take root: They must get visible backing from the most influential executives (what we call C1), who are not necessarily those with the top titles. And they must take into account the enthusiasm – or often, lack thereof – of the people who must deal with the new systems, processes, or ways of working (C2).

Top-level commitment is vital to engendering commitment from those at the coal face. If employees don't see that the company's leadership is backing a project, they're unlikely to change. No amount of top-level support is too much. In 1999, when we were working with the CEO of a consumer products company, he told us that he was doing much more than necessary to display his support for a nettlesome project. When we talked to line managers, they said that the CEO had extended very little backing for the project. They felt that if he wanted the project to succeed, he would have to support it more visibly! A rule of thumb: When you feel that you are talking up a change initiative at least three times more than you need to, your managers will feel that you are backing the transformation.

Sometimes, senior executives are reluctant to back initiatives. That's understandable; they're often bringing about changes that may negatively affect employees' jobs and lives. However, if senior executives do not communicate the need for change, and what it means for employees, they endanger their projects' success. In one financial services firm, top management's commitment to a program that would improve cycle times, reduce errors, and slash costs was low because it entailed layoffs. Senior executives found it gut-wrenching to talk about layoffs in an organization that had prided itself on being a place where good people could find lifetime employment. However, the CEO realized that he needed to tackle the thorny issues around the layoffs to get the project implemented on schedule. He tapped a senior company veteran to organize a series of speeches and meetings in order to provide consistent explanations for the layoffs, the timing, the consequences for job security, and so on. He also appointed a well-respected general manager to lead the change program. Those actions reassured employees that the organization would tackle the layoffs in a professional and humane fashion.

Companies often underestimate the role that managers and staff play in transformation efforts. By communicating with them too late or inconsistently, senior executives end up alienating the people who are most affected by the changes. It's surprising how often something senior executives believe is a good thing is seen by staff as a bad thing, or a message that senior executives think is perfectly clear is misunderstood. That usually happens when senior executives articulate subtly different versions of critical messages. For instance, in one company that applied the DICE framework, scores for a project showed a low degree of staff commitment. It turned out that these employees had become confused, even distrustful, because one senior manager had said,

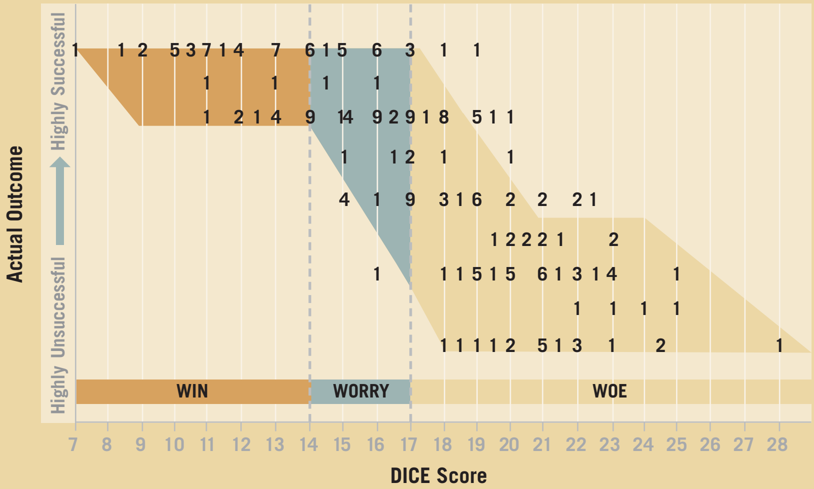
THE SIMPLICITY OF the DICE framework often proves to be its biggest problem; executives seem to desire more complex answers. By overlooking the obvious, however, they often end up making compromises that don't work.

“Layoffs will not occur,” while another had said, “They are not expected to occur.”

Organizations also underestimate their ability to build staff support. A simple effort to reach out to employees can turn them into champions of new ideas. For example, in the 1990s, a major American energy producer was unable to get the support of mid-level managers, supervisors, and workers for a productivity improvement program. After trying several times, the company’s senior executives decided to hold a series of one-on-one conversations with mid-level managers in a last-ditch effort to win them over. The conversations focused on the program’s objectives, its impact on employees, and why the organization might not be able to survive without the changes. Partly because of the straight talk, the initiative gained some momentum. This allowed a project team to demonstrate a series of quick wins, which gave the initiative a new lease on life.

DICE SCORES PREDICT PROJECT OUTCOMES

When we plotted the DICE scores of 225 change management initiatives on the horizontal axis, and the outcomes of those projects on the vertical axis, we found three sets of correlations. Projects with DICE scores between 7 and 14 were usually successful; those with scores over 14 and under 17 were unpredictable; and projects with scores over 17 were usually unsuccessful. We named the three zones Win, Worry, and Woe, respectively. (Each number plotted on the graph represents the number of projects, out of the 225 projects, having a particular DICE score.)



Effort. When companies launch transformation efforts, they frequently don’t realize, or know how to deal with the fact, that employees are already busy with their day-to-day responsibilities. According to staffing tables, people in many businesses work 80-plus-hour weeks. If, on top of existing responsibilities, line managers and staff have to deal with changes to their work or to the systems they use, they will resist.

Project teams must calculate how much work employees will have to do beyond their existing responsibilities to change over to new processes. Ideally, no one’s workload should increase more than 10%. Go beyond that, and the initiative will probably run into trouble. Resources will become overstretched and compromise either the change program or normal operations. Employee morale will fall, and conflict may arise between teams and line staff. To minimize the dangers, project managers should use a simple metric like the percentage increase in effort the employees who must cope with the new ways feel they must contribute. They should also check if the additional effort they have demanded comes on top of heavy workloads and if employees are likely to resist the project because it will demand more of their scarce time.

Companies must decide whether to take away some of the regular work of employees who will play key roles in the transformation project. Companies can start by ridding these employees of discretionary or nonessential responsibilities. In addition, firms should review all the other projects in the operating plan and assess which ones are critical for the change effort. At one company, the project steering committee delayed or restructured 120 out of 250 subprojects so that some line managers could focus on top-priority projects. Another way to relieve pressure is for the company to bring in temporary workers, like retired managers, to carry out routine activities or to outsource current processes until the changeover is complete. Handing off routine work or delaying projects is costly and time-consuming, so companies need to think through such issues before kicking off transformation efforts.

Creating the Framework

As we came to understand the four factors better, we created a framework that would help executives evaluate their transformation initiatives and shine a spotlight on interventions that would improve their chances of success. We developed a scoring system based on the variables

CALCULATING DICE SCORES

Companies can determine if their change programs will succeed by asking executives to calculate scores for each of the four factors of the DICE framework–duration, integrity, commitment, and effort. They must grade each factor on a scale from 1 to 4 (using fractions, if necessary); the lower the score, the better. Thus, a score of 1 suggests that the factor is highly likely to contribute to the program's success, and a score of 4 means that it is highly unlikely to contribute to success. We find that the following questions and scoring guidelines allow executives to rate transformation initiatives effectively:

DURATION [D]

Ask: Do formal project reviews occur regularly? If the project will take more than two months to complete, what is the average time between reviews?

Score: If the time between project reviews is less than two months, you should give the project 1 point. If the time is between two and four months, you should award the project 2 points; between four and eight months, 3 points; and if reviews are more than eight months apart, give the project 4 points.

INTEGRITY OF PERFORMANCE [I]

Ask: Is the team leader capable? How strong are team members' skills and motivations? Do they have sufficient time to spend on the change initiative?

Score: If the project team is led by a highly capable leader who is respected by peers, if the members have the skills and motivation to complete the project in the stipulated time frame, and if the company has assigned at least 50% of the team members' time to the project, you can give the project 1 point. If the team is lacking on all those dimensions, you should award the project 4 points. If the team's capabilities are somewhere in between, assign the project 2 or 3 points.

SENIOR MANAGEMENT COMMITMENT [C_1]

Ask: Do senior executives regularly communicate the reason for the change and the importance of its success? Is the message convincing? Is the message consistent, both across the top management team and over time? Has top management devoted enough resources to the change program?

Score: If senior management has, through actions and words, clearly communicated the need for change, you must give the project 1 point. If senior executives appear to be neutral, it gets 2 or 3 points. If managers perceive senior executives to be reluctant to support the change, award the project 4 points.

LOCAL-LEVEL COMMITMENT [C_2]

Ask: Do the employees most affected by the change understand the reason for it and believe it's worthwhile? Are they enthusiastic and supportive or worried and obstructive?

Score: If employees are eager to take on the change initiative, you can give the project 1 point, and if they are just willing, 2 points. If they're reluctant or strongly reluctant, you should award the project 3 or 4 points.

EFFORT [E]

Ask: What is the percentage of increased effort that employees must make to implement the change effort? Does the incremental effort come on top of a heavy workload? Have people strongly resisted the increased demands on them?

Score: If the project requires less than 10% extra work by employees, you can give it 1 point. If it's 10% to 20% extra, it should get 2 points. If it's 20% to 40%, it must be 3 points. And if it's more than 40% additional work, you should give the project 4 points.

Executives can combine the four elements into a project score. When we conducted a regression analysis of our database of change efforts, we found that the combination that correlates most closely with actual outcomes doubles the weight given to team performance (I) and senior management commitment (C1). That translates into the following formula:

DICE Score = $D + (2 \times I) + (2 \times C_1) + C_2 + E$

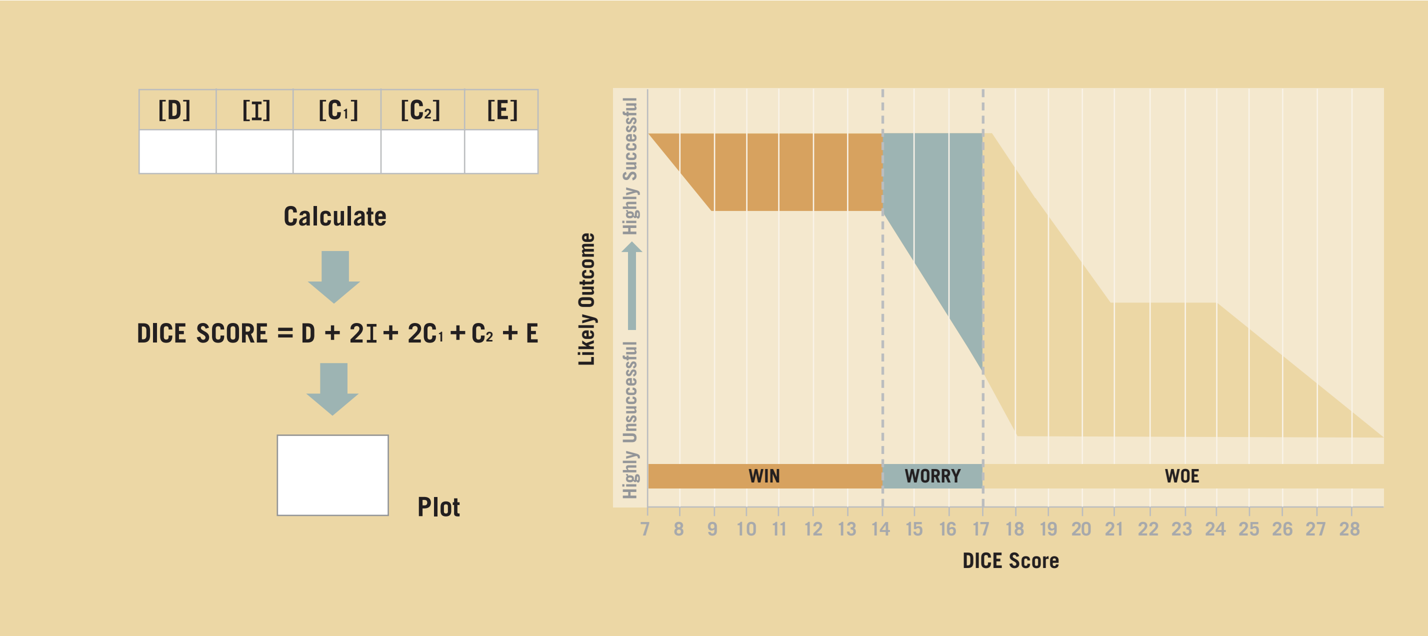
In the 1-to-4 scoring system, the formula generates overall scores that range from 7 to 28. Companies can compare a project's score with those of past projects and their outcomes to assess if the project is slated for success or failure. Our data show a clear distribution of scores:

Scores between 7 and 14: The project is very likely to succeed. We call this the Win Zone.

Scores higher than 14 but lower than 17: Risks to the project's success are rising, particularly as the score approaches 17. This is the Worry Zone.

Scores over 17: The project is extremely risky. If a project scores over 17 and under 19 points, the risks to success are very high. Beyond 19, the project is unlikely to succeed. That's why we call this the Woe Zone.

We have changed the boundaries of the zones over time. For instance, the Worry Zone was between 14 and 21 points at first, and the Woe Zone from 21 to 28 points. But we found that companies prefer to be alerted to trouble as soon as outcomes become unpredictable (17 to 20 points). We therefore compressed the Worry Zone and expanded the Woe Zone.



that affect each factor. Executives can assign scores to the DICE factors and combine them to arrive at a project score. (See the sidebar "Calculating DICE Scores.")

Although the assessments are subjective, the system gives companies an objective framework for making those decisions. Moreover, the scoring mechanism ensures that executives are evaluating projects and making trade-offs more consistently across projects.

A company can compare its DICE score on the day it kicks off a project with the scores of previous projects, as well as their outcomes, to check if the initiative has been set up for success. When we calculated the scores of the 225 change projects in our database and compared them with the outcomes, the analysis was compelling. Projects clearly fell into three categories, or zones: *Win,* which means that any project with a score in that range is statistically likely to succeed; *worry,* which suggests that the project's outcome is hard to predict; and *woe,* which implies that the project is totally unpredictable or fated for mediocrity or failure. (See the exhibit "DICE Scores Predict Project Outcomes.")

Companies can track how change projects are faring by calculating scores over time or before and after they have made changes to a project's structure. The four factors offer a litmus test that executives can use to assess the probability of success for a given project or set of projects. Consider the case of a large Australian bank that in 1994 wanted to restructure its back-office operations. Senior executives agreed on the rationale for the change but differed on whether the bank could achieve its objectives, since the transformation required major changes in processes and organizational structures. Bringing the team and the senior executives together long enough to sort out their differences proved impossible; people were just too busy. That's when the project team decided to analyze the initiative using the DICE framework.

Doing so condensed what could have been a free-flowing two-day debate into a sharp two-hour discussion. The focus on just four elements generated a clear picture of the project's strengths and weaknesses. For instance, managers learned that the restructuring would take eight months to implement but that it had poorly defined milestones and reviews. Although the project team was capable and senior management showed reasonable commitment to the effort, there was room for improvement in both areas. The back-office workforce was hostile to the proposed changes since more than 20% of these people would lose their jobs. Managers and employees agreed that the back-office staff would need to muster 10% to 20% more effort on top of its existing commitments during the implementation. On the DICE scale, the project was deep in the Woe Zone.

However, the assessment also led managers to take steps to increase the possibility of success before they started the project. The bank decided to split the project time line into two – one short-term and one long-term. Doing so allowed the bank to schedule review points more frequently and to maximize team members' ability to learn from experience before the transformation grew in complexity. To improve staff commitment, the bank decided to devote more time to explaining why the change was necessary and how the institution would support the staff during the implementation. The bank also took a closer look at the people who would be involved in the project and changed some of the team leaders when it realized that they lacked the necessary skills. Finally, senior managers made a concerted effort to show their backing for the initiative by holding a traveling road show to explain the project to people at all levels of the organization. Taken together, the bank's actions and plans shifted the project into the Win Zone. Fourteen months later, the bank completed the project – on time and below budget.

Applying the DICE Framework

The simplicity of the DICE framework often proves to be its biggest problem; executives seem to desire more complex answers. By overlooking the obvious, however, they often end up making compromises that don't work. Smart companies try to ensure that they don't fall into that trap by using the DICE framework in one of three ways.

Track Projects. Some companies train managers in how to use the DICE framework before they start transformation programs. Executives use spreadsheet-based versions of the tool to calculate the DICE scores of the various components of the program and to compare them with past scores. Over time, every score must be balanced against the trajectory of scores and, as we shall see next, the portfolio of scores.

He wasn't able to attribute his concerns to anything other than a bad feeling. However, when the general manager used the DICE framework, he was able to confirm his suspicions. After a 45-minute discussion with project managers and other key people, he established that three projects were in the Win Zone but two were in the Woe Zone and one was in the Worry Zone.

The strongest projects, the general manager found, consumed more than their fair share of resources. Senior hospital staff sensed that those projects would succeed and spent more time promoting them, attending meetings about them, and making sure they had sufficient resources. By contrast, no one enjoyed attending meetings on projects that were performing poorly. So the general manager stopped attending meetings for the projects that were on track; he attended only sessions that related to the three underperforming ones. He pulled some managers from the projects that were progressing smoothly and moved them to the riskier efforts. He added more milestones to the struggling enterprises, delayed their completion, and pushed hard for improvement. Those steps helped ensure that all six projects met their objectives.

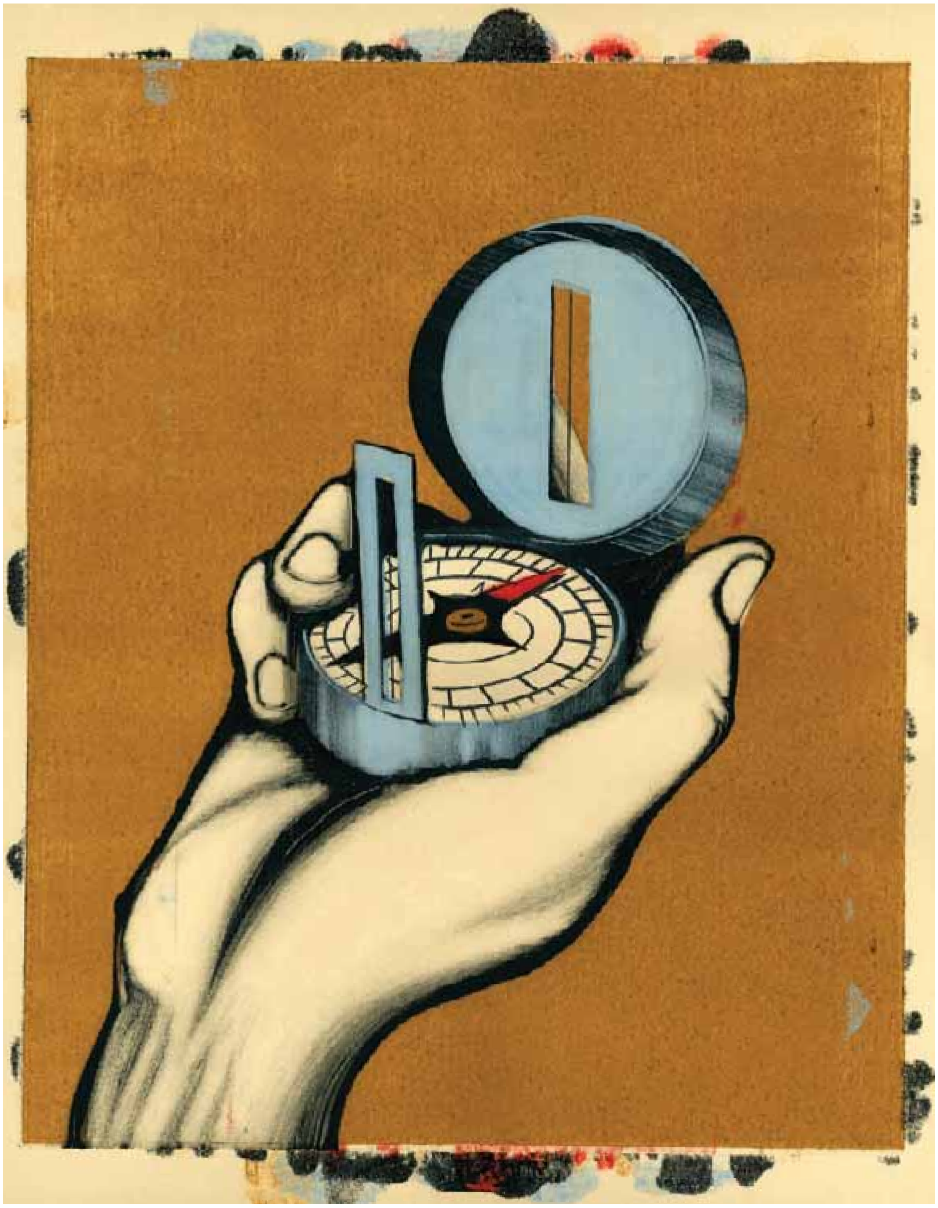
THE GENERAL MANAGER walked to a whiteboard and circled the five most important projects. "We're not going to start until these are well within the Win Zone. What do we have to do to achieve that?"

Senior executives often use DICE assessments as early warning indicators that transformation initiatives are in trouble. That's how Amgen, the $10.6 billion biotechnology company, used the DICE framework. In 2001, the company realigned its operations around some key processes, broadened its offerings, relaunched some mature products, allied with some firms and acquired others, and launched several innovations. To avoid implementation problems, Amgen's top management team used the DICE framework to gauge how effectively it had allocated people, senior management time, and other resources. As soon as projects reported troubling scores, designated executives paid attention to them. They reviewed the projects more often, reconfigured the teams, and allocated more resources to them. In one area of the change project, Amgen used DICE to track 300 initiatives and reconfigured 200 of them.

Both big and small organizations can put the tool to good use. Take the case of a hospital that kicked off six change projects in the late 1990s. Each initiative involved a lot of investment, had significant clinical implications, or both. The hospital's general manager felt that some projects were going well but was concerned about others.

Manage portfolios of projects. When companies launch large transformation programs, they kick off many projects to attain their objectives. But if executives don't manage the portfolio properly, those tasks end up competing for attention and resources. For instance, senior executives may choose the best employees for projects they have sponsored or lavish attention on pet projects rather than on those that need attention. By deploying our framework before they start transformation initiatives, companies can identify problem projects in portfolios, focus execution expertise and senior management attention where it is most needed, and defuse political issues.

Take, for example, the case of an Australasian manufacturing company that had planned a set of 40 projects as part of a program to improve profitability. Since some had greater financial implications than others, the company's general manager called for a meeting with all the project owners and senior managers. The group went through each project, debating its DICE score and identifying the problem areas. After listing all the scores and issues, the general manager walked to a whiteboard and circled the five most important projects. "I'm prepared to



accept that some projects will start off in the Worry Zone, though I won't accept anything outside the middle of this zone for more than a few weeks. For the top five, we're not going to start until these are well within the Win Zone. What do we have to do to achieve that?" he asked.

The group began thinking and acting right away. It moved people around on teams, reconfigured some projects, and identified those that senior managers should pay more attention to – all of which helped raise DICE scores before implementation began. The most important projects were set up for resounding success while most of the remaining ones managed to get into the Win Zone. The group left some projects in the Worry Zone, but it agreed to track them closely to ensure that their scores improved. In our experience, that's the right thing to do. When companies are trying to overhaul themselves, they shouldn't have all their projects in the Win Zone; if they do, they are not ambitious enough. Transformations should entail fundamental changes that stretch an organization.

Force conversation. When different executives calculate DICE scores for the same project, the results can vary widely. The difference in scores is particularly important in terms of the dialogue it triggers. It provokes participants and engages them in debate over questions like "Why do we see the project in these different ways?" and "What can we agree to do to ensure that the project will succeed?" That's critical, because even people within the same organization lack a common framework for discussing problems with change initiatives. Prejudices, differences in perspectives, and a reluctance or inability to speak up can block effective debates. By using the DICE framework, companies can create a common language and force the right discussions.

Sometimes, companies hold workshops to review floundering projects. At those two- to four-hour sessions, groups of eight to 15 senior and middle managers, along with the project team and the project sponsors, hold a candid dialogue. The debate usually moves beyond the project's scores to the underlying causes of problems and possible remedies. The workshops bring diverse opinions to light, which often can be combined into innovative solutions. Consider, for example, the manner in which DICE workshops helped a telecommunications service provider that had planned a major transformation effort. Consisting of five strategic initiatives and 50 subprojects that needed to be up and running quickly, the program confronted some serious obstacles. The projects' goals, time lines, and revenue objectives were unclear. There were delays in approving business cases, a dearth of rigor and focus in planning and identifying milestones, and a shortage of resources. There were leadership issues, too.

For example, executive-level shortcomings had resulted in poor coordination of projects and a misjudgment of risks.

To put the transformation program on track, the telecom company incorporated DICE into project managers' tool kits. The Project Management Office arranged a series of workshops to analyze issues and decide future steps. One workshop, for example, was devoted to three new product development projects, two of which had landed in the Woe Zone and one in the Worry Zone. Participants traced the problems to tension between managers and technology experts, underfunding, lack of manpower, and poor definition of the projects' scopes. They eventually agreed on three remedial actions: holding a conflict-resolution meeting between the directors in charge of technology and those responsible for the core business; making sure senior leadership paid immediate attention to the resource issues; and bringing together the project team and the line-of-business head to formalize project objectives. With the project sponsor committed to those actions, the three projects had improved their DICE scores and thus their chances of success at the time this article went to press.

Conversations about DICE scores are particularly useful for large-scale transformations that cut across business units, functions, and locations. In such change efforts, it is critical to find the right balance between centralized oversight, which ensures that everyone in the organization takes the effort seriously and understands the goals, and the autonomy that various initiatives need. Teams must have the flexibility and incentive to produce customized solutions for their markets, functions, and competitive environments. The balance is difficult to achieve without an explicit consideration of the DICE variables.

Take the case of a leading global beverage company that needed to increase operational efficiency and focus on the most promising brands and markets. The company also sought to make key processes such as consumer demand development and customer fulfillment more innovative. The CEO's goals were ambitious and required investing significant resources across the company. Top management faced enormous challenges in structuring the effort and in spawning projects that focused on the right issues. Executives knew that this was a multiyear effort, yet without tight schedules and oversight of individual projects, there was a risk that projects would take far too long to be completed and the results would taper off.

> CONVERSATIONS about DICE scores are particularly useful for large-scale transformations that cut across business units, functions, and locations.

To mitigate the risks, senior managers decided to analyze each project at several levels of the organization. Using the DICE framework, they reviewed each effort every month until they felt confident that it was on track. After that, reviews occurred when projects met major milestones. No more than two months elapsed between reviews, even in the later stages of the program. The time between reviews at the project-team level was even shorter: Team leaders reviewed progress biweekly throughout the transformation. Some of the best people joined the effort full time. The human resources department took an active role in recruiting team members, thereby creating a virtuous cycle in which the best people began to seek involvement in various initiatives. During the course of the transformation, the company promoted several team members to line- and functional leadership positions because of their performance.

The company's change program resulted in hundreds of millions of dollars of value creation. Its once-stagnant brands began to grow, it cracked open new markets such as China, and sales and promotion activities were aligned with the fastest-growing channels. There were many moments during the process when inertia in the organization threatened to derail the change efforts. However, senior management's belief in focusing on the four key variables helped move the company to a higher trajectory of performance.

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By providing a common language for change, the DICE framework allows companies to tap into the insight and experience of their employees. A great deal has been said about middle managers who want to block change. We find that most middle managers are prepared to support change efforts even if doing so involves additional work and uncertainty and puts their jobs at risk. However, they resist change because they don't have sufficient input in shaping those initiatives. Too often, they lack the tools, the language, and the forums in which to express legitimate concerns about the design and implementation of change projects. That's where a standard, quantitative, and simple framework comes in. By enabling frank conversations at all levels within organizations, the DICE framework helps people do the right thing by change.

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To order, see page 159.

The New York Times expects real business benefits from its new headquarters building because the company is taking an aggressively active role at every stage of its design and construction.

Master of the House

Why a Company Should Take Control of Its Building Projects

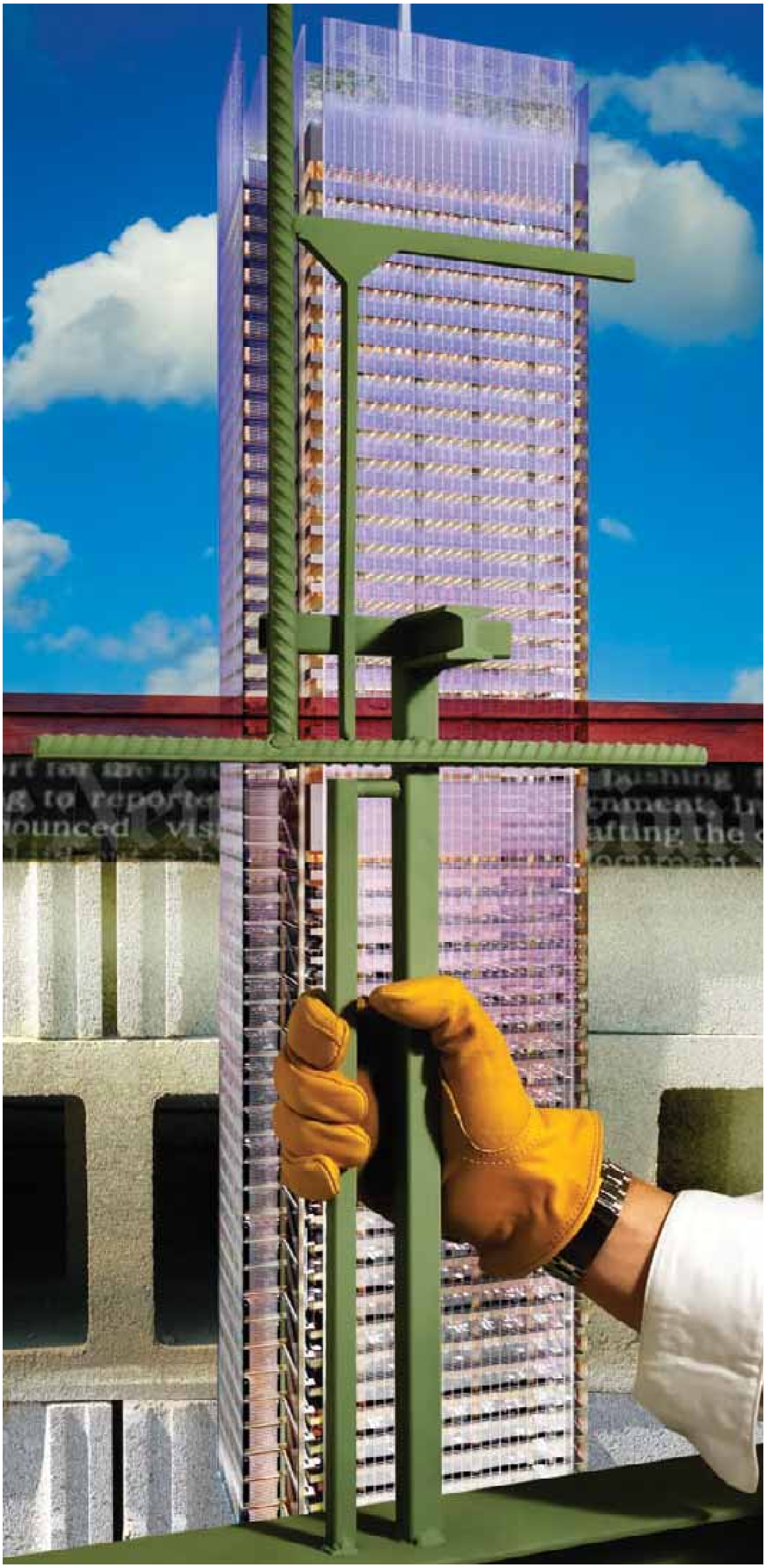
by David Thurm

COMING IN ON BUDGET and on time isn't good enough.

Granted, that's no small feat in itself: Take on a big building project, and virtually every construction professional you meet will kindly inform you that the large majority of people who run such projects are fired when their buildings are completed – usually late and over budget – if not before.

But if you want to avoid squandering what is probably your company's largest capital investment, keep in mind that meeting your schedule and your budget is just the starting point. It's important to create something that truly propels your business forward. A building that dynamically reflects your company's mission – brand instead of bland. A building with innovations that, combined, produce an energizing work environment instead of enervating clusters of cubicles.

And you won't get this kind of package – great design and innovative features that together further your business goals – unless you take an active role in the project's planning and construction. It isn't enough to simply write a check and then delegate project oversight to consultants, no matter how able they are. Unless your voice is in the mix, you will get, at best, well-intentioned guesses by others as to what you want. At worst, you'll get something that is incongruous with your goals. Actively assemble the right team, and then stay an integral part of the process, asking hard questions about things that are generally taken as givens. Articulate a



JOHN WEBER

vision of your future work space, and drive the search for ways to realize this vision. In short, be a builder, not merely an owner.

It's easy to understand why this approach is the exception rather than the rule. To most companies, design and construction seem foreign and forbidding, rife with pitfalls. Moreover, since this is one of the rare places in business where failures are memorialized in steel and concrete, to be painfully revisited day after day, companies are hesitant to make the bold moves that will yield true innovations. Because of the murkiness of the field and a lack of experience and confidence, most companies play a relatively minor role in their construction projects and ask very little of the team dragooned for the task: Basically, avoid the embarrassment of being over budget and behind schedule.

It's a giant mistake, though, to be a passive consumer when it comes to one of your most important assets. The deadening combination of a hidebound construction industry and risk-averse building owners has resulted in a shameful number of soulless, mediocre buildings that miss two tremendous opportunities – to say externally what the business is about and to say internally what the company aspires to be.

This is the story of how we have tried to seize those opportunities in building the New York Times' new headquarters, a 52-floor, 1.5-million-square-foot building in midtown Manhattan designed by Renzo Piano, in association with the architectural firms Fox & Fowle and Gensler, and scheduled to open in the summer of 2007. The Times will own and occupy the first 27 floors, and our development partner, Forest City Ratner, will own and operate the rest.

Clearly, we don't have all the answers. (In fact, writing this article as the steel is still going up undeniably risks inciting the wrath of the Construction Gods.) But in the course of multiple construction projects – not only our new headquarters but numerous offices and production facilities – we have learned a series of lessons that other companies may find useful as they consider their own projects. Implicit in all these lessons: You have to push yourself as hard as you push your contractors.

Insist on Great Design

An architect friend recently recounted a conversation he had with the head of a large financial services company. The firm had just built a satellite office on the outskirts of its main community. Because the building was simply back-room space for the company, it got treated as such architecturally – nice enough but nothing special. However modest its profile in the company's overall strategy, though, the facility is visible to the community, and people refer to the building by the bank's name. The result: A prestigious company is branded with a mediocre facility.

Like it or not, all your buildings reflect your identity. Because of that, they should be consistent with it. You don't wear Hush Puppies with an Armani suit, and you shouldn't build a Hush Puppies building – unless, of course, you're a Hush Puppies kind of company. At the same time, forget the conventional wisdom that a well-designed, well-conceived building that elegantly and distinctively conveys your company's image will cost significantly more than an ordinary structure. It needn't; in fact, it will increase the value of your investment.

But great design doesn't just materialize. Early on, think carefully about your vision for the business – both how you want it to be perceived and where you want to take it. This vision will act as a filter for selecting your designers and, as a result, will inform the building's design. If our experience is indicative, you will almost magically connect with the right architects, who will offer themes that resonate with your view of the company.

Our vision grows out of our core values: good corporate citizenship, a commitment to our employees, and the integrity and quality of our news and information. Thus, we wanted a building that would make a positive contribution to the city, create a superior work environment, and reflect our journalistic mission. An ostentatious, forbidding fortress would not express the transparency at the heart of this mission: our openness to our readers and our central function of providing news in an open and democratic society.

Renzo Piano's concept for the building perfectly meshed with this principle. After visiting the Times' newsroom during the election-night excitement of the 2000 U.S. presidential race and listening to our description of the company and its mission, Piano proposed a building in which the dynamic "factory" of the newsroom would be visible through floor-to-ceiling windows. The city would be able to see us at work – and we'd be able to see the city. The feeling of openness would extend to the lobby: Instead of the customary large and exclusionary security desk set in front of an impregnable wall of stone, the architects created an inviting space by separating the elevator banks so that visitors would be able to see almost 375 feet through the lobby to a central garden and, beyond that, to a glass-fronted auditorium.

But this grand vision of openness presented a tremendous challenge. One of the fundamental difficulties in skyscraper design is how to shed the heat load of the sun warming the glass of the tower. Conventional approaches include making small windows (think of the 1960s-vintage buildings lining upper Sixth Avenue in New York) or coating the windows with reflective film (think of any suburban office complex). The trouble with these solutions is that they result, in Piano's words, in "selfish buildings" that obscure their inner workings from the street and leave employees with a dimly lit, winter-in-Helsinki workplace.

Piano's unique fix: Add to the building a second skin, one created out of slender, horizontal ceramic rods that hang 18 inches off the glass, spaced to allow clear views but sufficient in number to block half the sun's energy. This approach gives occupants lots of natural light and the open feeling of floor-to-ceiling glass. And it offers people on the street a building animated by the movement of employees within. The view is further enlivened by the rods' glazed finish, which subtly assumes the colors of the day and season.

Shortly after we hired the architects, we assembled a broad group of leaders at the Times for a discussion about how the design could go beyond the building's facade to reinforce the company's vision and core values. These conversations informed a wide range of decisions, from the placement of private offices against the core of the building (letting people in the open-plan work spaces enjoy the windows and light) to our embracing Piano's proposal for stairways connecting the floors. Instead of making the fire stairs more inviting to encourage people to walk between floors, we will have an interconnecting series of stairways against the windows at the corners of the building with the best views. This refined version of the exterior escalators of Piano's Pompidou art museum in Paris doesn't only further our aim of bringing the interior of the building to life for passersby; placing the stairs in the location of the proverbial corner office physically expresses our dedication to breaking down barriers between departments.

Without an initial engaged effort to figure out just what you want your new

Since failures are memorialized in steel and concrete, companies are hesitant to make the bold moves that will yield true innovations.

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building to say to the world and to employees, you are unlikely to achieve this happy match between architect and project. Furthermore, absent a guiding design principle, it's easy to lose your bearings during the inevitable compromising and cost cutting that will take place as the project progresses. (For a discussion of the pressures of cost cutting on design principles, see the sidebar "The Art of Value Engineering.")

Demand Meaningful Innovation

Every project offers an opportunity to reexamine the technologies that help shape your work environment. Forget this fact, and you won't get the full value of your investment.

Although your architects, engineers, and contractors will play an important role, you'll need to provide leadership to counteract the surprisingly risk-averse nature of the construction industry. "I want to be the first one who does something for the second time" is the way one of our (quickly replaced) construction professionals articulated this prevailing sentiment.

That we, the building owners, needed to drive innovations became apparent to us only through long experience. Starting in the early 1970s, the New York Times built a series of offices and production facilities for newspapers it owned across the country. The buildings were largely cookie-cutter. They worked fine, looked OK, and were built within budget. But we never stepped back and asked what they said about the company, how they affected people's work, or how they might transform our business.

The epiphany came when we moved our printing operations from the basement of our midtown Manhattan building to two cutting-edge production facilities, one in Edison, New Jersey, and the other in Queens, New York. We found in planning those facilities that the printing equipment in the market simply didn't meet our needs for color quality, speed, and automation. So we worked with manufacturers to create new generations of equipment, a process that forced us to stretch ourselves and eventually to get comfortable with the idea of championing innovation.

That mind-set carried over to our new headquarters building, where we have made it a priority to enhance the quality of the work environment for employees. The innovations have ranged from the seemingly trivial (toilet stall doors that fit the frames without gaps and thus offer more privacy) to the obviously significant (improvements in lighting and ventilation). Experience has taught us a number of things about innovation.

Don't be afraid to think big: The lighting story. Lighting designers typically strive for an even light level – approximately 50 foot-candles, to use the technical term – throughout a building and throughout the day. Five years ago, when we built new offices for our Internet operation, we installed lighting

The Art of Value Engineering

The surest sign that a phrase has been overused and a concept distorted is a noun morphing into a verb. Things get even fuzzier when that verb is made into an acronym. This is the case with "value engineering." It is common to hear construction folk talk about "VEing" an item out of a project because preliminary cost estimates have come in above budget.

In its crudest form, value engineering simply involves cutting the quality or quantity of materials to be used in a construction project. At its most sophisticated, value engineering is about making the project less expensive and better. Wielding a hatchet is easy and, alas, often necessary; sculpting is harder but far more satisfying.

Whether reaching for the hatchet or the chisel, avoid compromising on the elements of the building that reflect your philosophy and design. If a large open stairway that physically and symbolically links departments is an essential complement to your company's mission, as it was designed to be in the New York Times' new headquarters, you shouldn't try to achieve the same effect with a gussied-up fire stairway painted in bright colors. However, through careful collaboration, you should be able to reduce costs and meet your aesthetic objectives – for example, by adjusting the size or materials of the stairs.

The challenge of value engineering is all the greater because the exercise is usually preceded by a heart-stopping preliminary cost estimate and a conversation suffused with the all too natural panic, depression, and dejection that follow a near-death business experience. Without the firm hand of a caring owner, there will be a rush to find the "VE" in "eViscErate."

Involve everyone. Draw on the collective talents of your team, and don't let anyone off the hook. Press the contractor to explain why the estimate is as high as it is and to seek materials and methods that could achieve the desired effect at a lower price – for example, bolting instead of welding steel connections. (If you dig, you will find cushions that have been built into the estimate as a hedge against the contractor's risk.) Press the engineer to identify instances where he's been too conservative in his design assumptions – for example, creating extra space above the ceiling to make it easier for contractors to fit in pipes, ducts, and wires. Press the architect to identify the design features that are nice but not essential – such as custom light fixtures that could be readily substituted with standard materials without compromising the aesthetic vision. And press your own organization to make choices – for instance, decreasing the floor loads versus preserving the option of high-density storage sometime in the future.

A word of caution: The voice that is likely to get drowned out in the process is the architect's. The bare-knuckle world of scrounging for savings is not particularly conducive to discussions of design philosophy. However, philosophy – and its execution in the details of a building – does affect the integrity and unity of the design, so the owner needs to ensure it is given due, but not absolute, weight.

Go where the money is. It sounds elementary, but start with the big issues. For example, reductions in square footage, more than anything else, will lower costs. Such changes, when you're working with expensive materials like steel, can yield huge savings. Many of these changes will be invisible. By contrast, going cheap on the lobby – which sets the tone for the entire building – hardly saves enough to be worth the dramatic cutback in design.

Plan rather than panic. Value engineering should not be reactive. It should be scheduled as an essential step, particularly in complex or difficult projects. Whether or not the preliminary estimate meets your budget, you will want to evaluate the project design in light of the estimate. Make systematic reviews part of the schedule, and require the architect to include as a basic service any redesign needed to stay within budget.

Hedge your bets. Estimating is an inexact science, and there is a risk that you will denude the building of special features in reaction to early estimates that later prove to be unduly conservative. When faced with difficult choices in preliminary estimates, work with your architect to create a list of building features that you want if money allows. Prioritize the list, and, more important, tie decisions to specific dates. The type of roof is an early, big-number decision, but you can wait to select bathroom tile. Working closely with your contractor, you can carefully preprice options as alternates and lock in no-penalty decision dates in the subcontracts.

that followed this textbook prescription. After people moved in, employees turned off the circuit breakers controlling all the lights in two large departments. Our people were asking us something that the industry, with its uniform lighting standards, clearly hadn't been hearing: Why can't we have flexible lighting levels? And then we wondered, Why can't the lights in our new headquarters automatically adjust to take advantage of the amount of daylight that will come through the floor-to-ceiling windows?

We took these questions to our architects and lighting designers, but there wasn't much practical precedent for them to draw from. So we began researching the issues ourselves – contacting people in the trade, talking to lighting experts at universities, reading everything we

You have to push yourself as hard as you push your contractors.

could on the subject. Our research led us to the Building Technologies Department at the Lawrence Berkeley National Laboratory at the University of California. We took a ten-person team – Times people, architects, electrical engineers, and lighting designers – to the lab, where we spent a day trying to understand the gap between what the market offered and what should be standard practice. This meeting led to further pursuit of a dynamic-lighting system that would allow departments to set their own light levels and would automatically adjust the artificial light to take advantage of sunlight – and would cost no more than a conventional lighting system.

One of our first steps, spurred by the discussion at Berkeley Lab, was to transform the furniture mock-up for our new headquarters building into a full-blown test lab for lighting and shade controls. We constructed a replica of the southwest corner of the new building, its sunniest aspect, and equipped it with an array of competing technologies and products: lighting fixtures, fluorescent lighting ballasts, automated window shades. With the financial support of the New York State Energy Research and Development Authority, scientists from Berkeley Lab used 107 sensors to collect minute-by-minute data, from the winter solstice to the summer solstice. We also had employees tour and work in the space in order to test the dynamic-lighting concept.

The testing convinced us of the value of dynamic lighting. But we could never afford a one-of-a-kind installation. So, to share information and generate interest, we invited more than 450 design professionals to come and see the mock-up. We spoke at lighting trade shows, challenging the industry to adjust its pricing to make dynamic lighting a standard product. Then we solicited bids for the lights, shades, and controls. The result is that two companies, Lutron and MechoShade, are creating a package of dynamic lighting and shades that is within the typical lighting budget for a Class A building.

The effect of this lighting is profound. For much of the day, the test space is lit with the soft glow of natural light instead of harsher artificial light. An important but unanticipated dividend is that the quality of the light and the feeling of the space change with the season and the time of day. A natural circadian rhythm replaces the time-frozen-in-aspic feel of standard offices. (If you're reading this article in your office, can you tell from the light what time of day it is? What season?)

By taking a risk on a new way of thinking and by tapping into the enormous interest and intellect of academics, engineers, government authorities, and manufacturers, we could end up helping to change the commercial lighting industry. But that's incidental to our central goal of enhancing the working environment for our employees.

Dare to challenge the experts: The underfloor-air story. Everyone knows how bad the air in office buildings can be. To address this problem, we've opted for a nascent technology that gently brings up air from under a raised floor instead of forcing it down from the ceiling. This will result not only in greatly improved air quality but also in reduced energy usage.

Look up at your office ceiling, and you will likely see two vents, one to bring in fresh air and the other to take out stale air. This conventional building practice makes little sense. To get the cool, fresh air to penetrate the warm, stuffy air that has risen to the ceiling, buildings chill the incoming air to around 55 degrees Fahrenheit and force it into the room at fairly high pressure. Sit under the vent and you freeze; sit ten feet away and you sweat. Moreover, since the return-air duct is usually placed a few yards away from the supply vent, a substantial amount of the chilled fresh air scoots across the ceiling and out the return, never coming near the people who are working in the space.

There is a better way: Leave the return vent in the ceiling but gently circulate the chilled air by pumping it through the space beneath a raised floor, the kind increasingly used by businesses to provide flexibility for future wiring needs. The cooler air naturally fills the lower, occupied area of the room; when it meets warm objects such as people and computers, convection sends it toward the ceiling vent, where the stale air is expelled. Since the system doesn't fight physics, incoming air can be chilled to a moderate 68 degrees and brought in at low pressure through adjustable floor vents placed in virtually every workstation. For added comfort, carbon dioxide sensors in the return-air ducts automatically increase the amount of fresh air when the vented air is stuffy. This approach saves energy because it requires less refrigeration and, given the higher temperature of the air pumped in, there are significantly more days when the space can be cooled at low cost with outside air. The work space is more evenly cooled, the fresh air actually circulates, less energy is used, and people have control over the local environments of their workstations.

As sensible as all this sounds – and although the concept is fairly well-known

in Europe and in parts of the United States – our building will be the first large installation of underfloor air in Manhattan. Why? People think it's prohibitively expensive. The CEO of a company building its own new headquarters took a tour of our lighting mock-up, in which we'd also installed an underfloor-air system. At one point, he turned to his construction adviser and asked why their new space was designed with traditional air-conditioning. The adviser, a seasoned and respected professional, replied that underfloor air had been rejected because it would have cost $9 a square foot.

His answer was authoritative and definitive – and wrong. The discussion-stopping estimate did not take into account the substantial savings a raised-floor system would provide – in ductwork, energy costs, and simplified workstation wiring. When you factor in those benefits, underfloor ventilation is only marginally more expensive than a ceiling system.

Challenging the cool calculus and conventional wisdom of consultants is an important step toward real innovation in your work space. Many construction professionals tend to reach for tools that are in their comfort zones. But if they are pushed to consider alternatives and to dig deeper into the true costs and benefits, they will often sharpen their cost calculations and get caught up in the excitement of doing something interesting and significant.

Of course, it's one thing to challenge conventional wisdom but quite another to rush into a faddish new design or let your contractor embark on a task when there is no solid body of knowledge about how to accomplish it. Indeed, we visited one underfloor-air installation in London at which the contractor was freelancing a solution that changed from floor to floor – an incredibly messy and inefficient approach. So we called together the 40 professionals working on the heating and ventilation for our headquarters building and another Times building in Sarasota, Florida, for an "underfloor summit" to develop a protocol for the construction of these two – and any future – underfloor-air projects.

We also hired a lab in Texas to test the headquarters' air design in a separate mock-up. We then hired a noted professor of fluid dynamics from the University of California, San Diego, to double-check the Texas lab's experiment. These extra steps have allowed us to continue to improve the design before we install the system throughout the new headquarters building. Similarly, we bid the fixtures and controls for our dynamic-lighting system a year and a half earlier than we normally would have and then equipped the mock-up with the winning design, giving the manufacturer the opportunity to fine-tune the system before it is actually installed. The more innovative you are, the more you have an obligation – or at least the dictate of self-preservation – to make sure that bright new theories will actually work.

Don't pay a fear premium: The ceramic rods story. One of the critical design features of our new headquarters building is the double facade: floor-to-ceiling glass and an outer screen of glazed ceramic rods. The challenge was finding a way to build this unique enclosure – and doing so within a tight budget.

The usual equation for new materials is simple: new design + fear = premium price. That is, subcontractors, because they are uncertain about a new design concept, build cushions into their bids to cover unforeseen problems. In our case, the risk was heightened because a skyscraper's exterior (called the curtain wall) usually represents around 20% of the cost of the building. Even small premiums for this part of the project would have resulted in substantial monetary pain.

So the Times and its development partner, Forest City Ratner, decided to experiment with a new purchasing paradigm. We hired four curtain wall manufacturers, all likely bidders for the job, to engineer and build a sample of the wall. Going through this exercise demystified the design and removed fear from the price formula. And by drawing on the insights of four manufacturers, our architects were able to identify and simplify unduly expensive elements of the design without compromising its integrity. Having tamed everyone's fears, we invited the manufacturers to bid on the wall. Their quotes were well below initial estimates and fell within our budget.

Even then, we had a long way to go. And because we were pioneering an innovative concept, it was important that we be open to serendipitous detours from the path we had laid out.

Since ceramic rods are not standard building items, the architects had to be creative in sourcing the material. Their detective work yielded a range of possible suppliers, from a company that makes tiles for the walls of the Paris Metro to a firm that makes ceramic sewer pipes. Then, to better understand how easily and uniformly rods could be manufactured, the Times and Forest City Ratner sent a team of architects and the construction manager to observe production runs at a ceramic-sewer-pipe factory in Leipzig, Germany.

There, our team watched clay being extruded, like sausage, into pipes that were then stood on end on pallets and sent on a weeklong journey through a kiln. While observing this process, one member of our team noticed that the conveyor belt for the kiln was made of uniformly sized ceramic rollers that were precisely manufactured in a diameter that was very close to what we wanted. The architects located the manufacturer of the conveyor rollers and included the company in the bidding process. This firm is now manufacturing the 170,000 rods that will grace our building.

Architects clearly have a critical role to play, but engineers also make all kinds of decisions – and compromises – that have an effect on the quality of the finished building.

As this story illustrates, the more you push the innovation envelope, the more time you will need to investigate possibilities and develop solutions. It doesn't take a lot of time to pursue a better layout. It does take time, however, to develop a different purchasing strategy, such as the one employed for the curtain wall of our new building. It takes even more time to get an entire industry to economically offer a new product, as we did with dynamic lighting.

Get Involved in the Details

As should be readily evident, innovation is a team sport. This makes it all the more important for the building's owner to take special care in assembling the team – the architect, the engineer, the contractor, the owner's representative, and, in the case of our new headquarters building, a particularly creative developer with deep construction expertise – and in setting the tone for its work. Each member has a unique perspective and skill set, and the power of all these independent voices will be greater if the owner has taken the effort to hire wisely and create the proper team dynamic.

Sounds logical, but it doesn't usually work this way. For one thing, owners typically don't hire a contractor until the design process is well along, so they usually lack a third party who can provide a reality check for the architect's ideas. Indeed, one of the key attributes of a good contractor is the ability to offer effective preconstruction advice. Although every firm will claim to have this skill, it is surprisingly rare. If you can find a company (or, more likely, a person within the firm) with the right mind-set and creativity, the value of the advice will be enormous.

Moreover, owners all too frequently talk primarily with the architects and not with the engineers who report to them. Architects clearly have a critical role to play, but engineers also make all kinds of decisions – and compromises – that have an effect on the quality of the finished building. For example, the underfloor-air system would not have been possible if we hadn't had a quality engineering firm like Flack and Kurtz that had already done pioneering work in this area.

In selecting your team, don't just focus on the top people. In our recent projects, we have participated in the interviews of everyone reporting directly to the architect, from the acoustician to the food service designer. Reserve the right to pick team members and to veto any person about whom you have the slightest doubt. This sort of deliberation can be difficult under the pressure to keep a project moving forward, but it's time well spent if you can avoid the consequences of getting the wrong people on your job.

Everyone on the team should conduct a detailed review of the plans and "walk the space," looking for elements that don't work.

Once the team is assembled, the owner must set a tone of collegiality and the expectation that people will exchange information freely and challenge one another. The contractor should be free to ask questions about the intent of the design. The architect should feel comfortable questioning the means and methods. The aim is to establish creative tension leavened with mutual respect (and, of course, held in check by the budget).

One crucial point: The spirit of collaboration you establish with the architect, the contractor, and the subcontractors must be extended to the people within your company. The worst mistake you can make is to build without involving employees, at all levels. The next worst thing you can do is to make the involvement fake. Don't ask people's opinions unless you are willing to listen. Clearly, you are not going to conduct a popular vote on every element of the project. If you did, you'd replace design and vision with homogenized shades of gray. But you can offer people a number of choices. For our new headquarters building, we narrowed down the options for workstation partition height to three and the number of potential furniture vendors from 12 to six. With the input – not a vote but meaningful input – of a broad range of employees, we decided on the height of the partitions and finalized our furniture choices.

It's also important that you pay careful attention to your relationship with the executive committee of your company. For instance, educate the committee about the avoidable evils of change orders, which can destroy your budget and wreak havoc on your schedule, and establish formal processes to preclude them. Given the complexity of our headquarters project and the cumulative nature of basic decisions about its design and construction, we created a request-for-guidance form. The RFG presents the company's executive committee with an issue to settle, includes the information necessary to do so, and records the committee's decision. By documenting such decisions and creating an institutional memory, the form not only prevents confusion but helps instill a discipline about keeping changes to a minimum.

Active involvement in the details of a project can reduce change orders in other ways. For example, everyone on the team should conduct a detailed review of the plans and "walk the space," looking for elements that don't work. Moving a line on a drawing is cheap; moving a wall is markedly more expensive. (If you and your people are new to reading architectural plans, make sure that everyone receives a complete primer on the symbols and other conventions.) Start at the front door, walk through what will become the corridors, stop at the bathroom, go to your office, pretend to hang up your coat and plug in your laptop, and so on. We typically do this as a team in all-day review sessions that we call our "Where's Waldo?" exercises because they involve searching for small but significant items – as in the Waldo children's books – amid a dizzying amount of detail. Knowing your new building inside and out before plans leave the drafting table prevents expensive change orders.

You'll want to remind the contractor and consultants that the price of their early admission to the process is participation in this detailed review. Otherwise, you won't take full advantage of the opportunity to identify problems early and fix them before the bidding begins. Additionally, review the contractor's standard specifications to make sure they accurately reflect your job and to anticipate issues that will likely arise. Elements free for the asking in the bid process are, again, very expensive once the project is under way.

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Even in this age of rampant outsourcing, a business doesn't cede control of its core marketing, sales, and strategic decisions. Similarly, there is no reason to divorce yourself from the process of creating the environment for your business. Buildings are simply too large an investment to ignore. Push your organization to articulate its values. Convey those guiding principles to your consultants. Then work to ensure that those values are translated into a wonderfully designed and innovative structure that is a productive place to work. Whether or not you make these efforts, the financial investment is the same; the effect on your company will be remarkably different.

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To order, see page 159.

If you're like many product-centric companies, you're scrambling to grow your revenues from services. The best ways begin with making the products themselves smarter.

Four Strategies for the Age of Smart Services

by Glen Allmendinger and Ralph Lombreglia

ANDY POTTS

Any industrial manufacturer that has not awakened to the fact that it must become a service business is in serious peril today. Sadly, there are many such businesses – companies that still think of themselves as builders of things and that state their gross margins, operating profits, and other measures of success solely in terms of "the product." But even their more enlightened competitors, the ones who've begun to wrap valuable services around their products and, in some cases, profit directly from those services, are enjoying only a temporary advantage. They may be improving their customer relationships by taking on various burdens such as maintenance and replenishment of supplies, but that will get them only so far. A select group of companies is already upping the ante. Soon, it will not be enough for a company to offer services; it will have to provide "smart services."

Smart services go beyond the kinds of upkeep and upgrades you may be bundling with your products, both in their value to customers and in their cost efficiency to you. To provide them, you must build intelligence – that is, awareness and connectivity – into the products themselves. And you must be prepared to act on what the products then reveal about their use.

Consider Heidelberger Druckmaschinen (commonly known as Heidelberg), a maker of high-end printing presses. Throughout its history, the company has offered repair services to its customers. Several years ago, when it developed the ability to monitor its equipment remotely, Heidelberg found that it could provide maintenance much more cost-effectively. Now with its machines communicating continuously over the Internet, relaying information about their status between the print shops and Heidelberg's regional and global technical support specialists, the company has the access and insight to optimize printing performance in customers' shops. The total product support that Heidelberg now offers – which extends even to removal and resale of the machines–represents a whole new level of value for buyers. The network context has made the difference for Heidelberg and has allowed the firm to achieve true intimacy with its customers.

The rewards of becoming a smart service provider are hard to deny. In our research, we've documented organic growth rates in double digits for many of the companies that are following this path. The leaders are establishing the new performance benchmarks for their industries, deriving more than 50% of their revenues and 60% of their margin contributions from services as opposed to product sales. For most management teams in product-centric companies, numbers like these sound like nirvana.

Joining the ranks of smart service organizations is not primarily a technical challenge. The necessary technologies, while critical to the task, are well-enough established by this point. Rather, in most companies, the biggest challenge is getting senior management to adopt a new perspective on the nature of the business. The companies in the vanguard of smart services think differently about their purpose and how they make their profits – but they have come to that new heading by degrees.

What Makes Service Smart?

Smart services are a wholly different animal from the service offerings of the past. To begin with, they are fundamentally preemptive rather than reactive or even proactive. Preemptive means your actions are based upon hard field intelligence; you launch a preemptive strike to head off an undesirable event when you have real-world evidence that the event is in the offing. Smart services are thus based upon actual evidence that a machine is about to fail, that a customer's supply of consumables is about to be depleted, that a shipment of materials has been delayed, and so on.

Smart services are based upon actual evidence that a machine is about to fail, that a customer's supply of consumables is about to be depleted, and so on.

For customers, smart services create an entirely new kind of value–the value of removing unpleasant surprises from their lives. Meanwhile, because the field intelligence makes product performance and customer behaviors visible as never before, manufacturers gain unprecedented R&D feedback and insight into customers' needs and can provide even greater ongoing value.

Finally, because it is impractical to deploy humans to gather and analyze the real-time field data required, smart services depend on "machine intelligence." In a smart services environment, reliable and blindingly fast microprocessors do what they are very good at doing: digesting billions of data points, talking to one another about the data, controlling one another based upon the state of the data – all in a matter of nanoseconds. Humans cannot do this, nor should they; this incessant stream of business information should be invisible to people. At the same time, all this background activity gives managers and decision makers much more visibility into a business's assets, costs, and liabilities–precisely when they need or want it. (See the sidebar "What a Connected Device Can Do.")

This is not dazzling futurespeak; for many companies, smart services are already reality. For many more, it's a matter of reaping the harvest of seeds sown. For decades, businesses have been steadily building electronic intelligence into manufactured objects by means of sensors, controllers, and microprocessors. Today, virtually all products that use electricity – whether you're talking about toys, coffeemakers, cars, or medical diagnostic machines – possess inherent data-processing capabilities. Each has a wealth of information to offer about its current status, usage history, and performance. So if a manufacturing machine, consumer product, or building is not presently monitoring every detail that its creator might wish to extract, it can easily and cheaply be made to do so.

Learning from the Vanguard

If some companies are further ahead than others in offering smart services, it's for good reason. Manufacturers such as Honeywell with its aerospace equipment, ABB with its power plant equipment, Siemens with its medical equipment, and GE with its jet engines and locomotives all produce assets so critical to customers' work that, for years already, they've been using various kinds of networking to perform remote monitoring and diagnostic work. Meanwhile, as the forces of competition and commoditization relentlessly assault their product lines, most of these manufacturers have made it an explicit goal to change their business mix and in-

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crease the margin contribution from their service activities. As a result, they have already pushed themselves further into the life cycles of the products they sell – beyond purchase and installation and into customers' ongoing use. A favorite example in the business press is the industrial gases business. Companies such as Air Products and Chemicals and Air Liquide, because they provide expensive components of critical processes, have traditionally needed to offer customers performance-based service contracts. Even when this meant having "human sensors" sitting at clients' sites 24/7 watching everything that went on, it was worth it: The companies naturally learned more about their customers' problems than the typical manufacturer could have, and they converted those issues into business opportunities.

"Chance favors the prepared mind," observed scientist Louis Pasteur. In the same way, emerging technologies favor prepared companies. When a global data network – the Internet – arrived on the scene alongside rapidly advancing technologies for large-scale storage and data mining, most management teams in the world were not thinking about the implications for device networking. But prepared companies, like the asset-intensive businesses cited earlier, spotted the shift in the economics. Now products could be wired throughout a business, and the connectivity was cheap enough to permit continual monitoring of them. Even a company like General Electric, already the poster child for downstream service expansion, saw unprecedented opportunities.

Look at GE's power turbine business, for instance. Its customers, major utilities, have good reason to hate equipment failures. At the least, any downtime creates huge opportunity costs for these customers; often it means they have to pay hefty regulatory compliance fines. To reduce that risk, GE (and its competition) invests heavily in remote monitoring and diagnostics so it can deploy a technician or engineer ahead of a failure (preemptively) as opposed to doing so according to a schedule based upon assumptions (proactively) or, even worse, after the power has gone off (reactively). For one thing, this has a dramatic effect on the profitability of GE's maintenance services. Most manufacturers cannot charge more than $90 to $110 per hour for their technical support because of price and benefit pressures from local competitors. But GE Energy, because of its efficient network-enabled remote servicing, can charge $500 to $600 per hour for the same technician. Even more important, the information generated by its continual monitoring allows GE to take on additional tasks, such as managing a customer's spare parts inventory or providing the customer's and GE's service and support personnel with complete access to unified data and knowledge about the status of the equipment.

Customers now look to GE not just for high-quality energy equipment but also for help in optimizing their ability to supply consistent and high-quality power to their customers. (In fact, GE has created a significant amount of customer dependency.) This has allowed GE to tie its pricing to the benefits it provides ("power by the hour," for instance) versus the products themselves.

The same kinds of economics are at work at GE Healthcare. Its typical customer is a radiology practice in the market for an MRI machine. In truth, customers have not purchased such equipment in years; given the rapidly obsolescing technology and quirks of

What a Connected Device Can Do

Most companies still view their electronic and electromechanical products as stand-alone objects, not things that could or should be connected. But it's the networking and management of these devices that will generate the intelligence businesses need to deliver smart services. Connected products will be able to perform the following functions:

>> Status. Status applications capture and report on the operation, performance, and usage of a given device or the environment being monitored.

>> Diagnostics. Diagnostic applications enable a device to self-optimize or allow a service person to monitor, troubleshoot, repair, and maintain devices.

>> Upgrades. Upgrade applications augment the performance of a given device. They prevent problems with version control, technology obsolescence, and device failure.

>> Control and Automation. Control and automation applications coordinate the sequenced activity of several devices. They can also cause devices to perform one-off, discrete actions.

>> Profiling and Behavior Tracking. Profiling and behavior-tracking applications monitor variations in the location, culture, performance, usage, and sales of a device. These applications can create more customized or predictive responses for end users.

>> Replenishment and Commerce. Replenishment and commerce applications monitor consumption of a device and buying patterns of the end user. These applications can initiate purchase orders or other transactions when replenishment is needed.

>> Location Mapping and Logistics. Location mapping and logistics applications track and optimize the service support system for a device. These applications also support supply chain and sales activities.

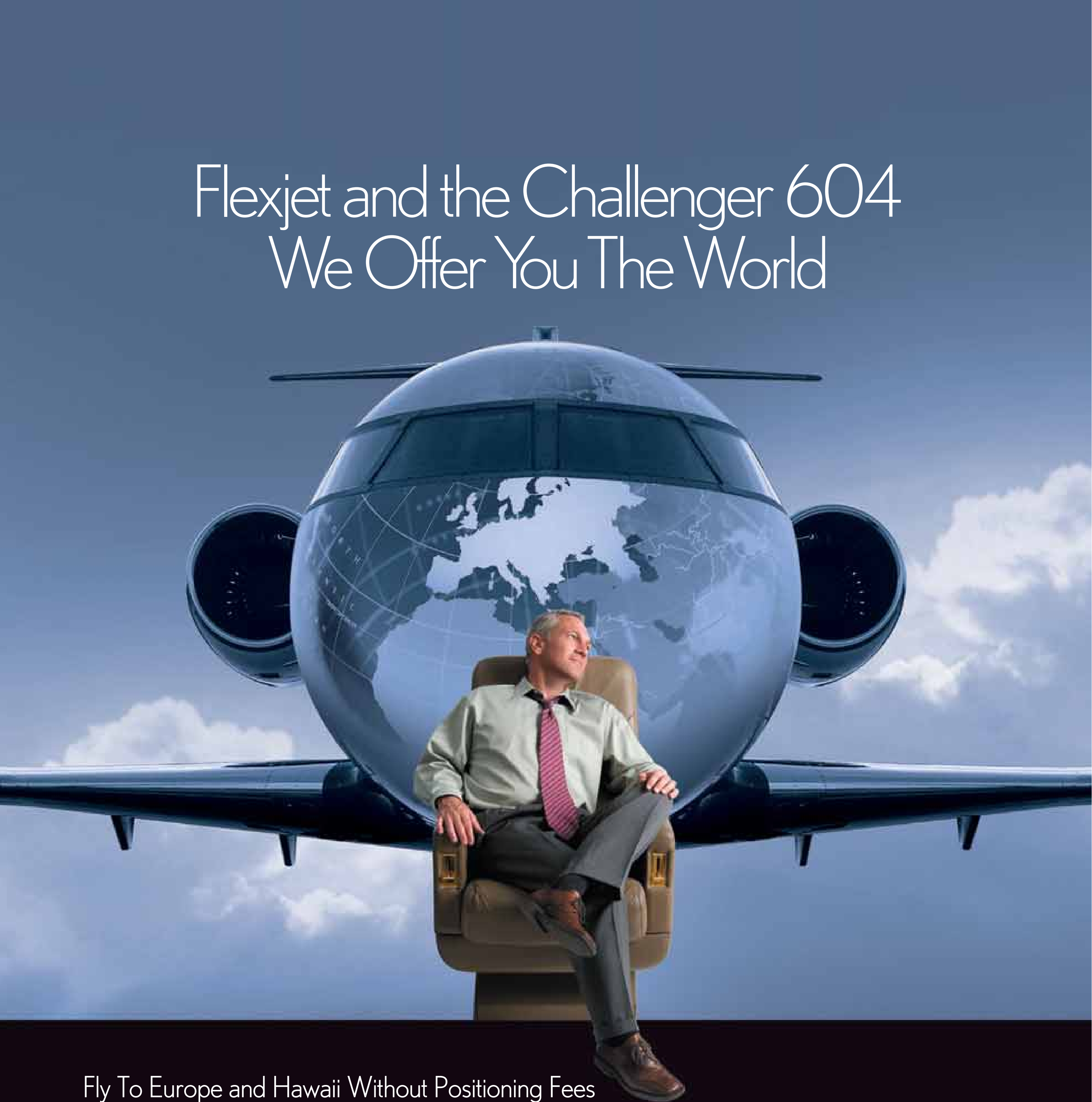
hospital finances, they've tended to lease the machines. Now even conventional leasing has gone by the wayside as companies like GE offer to install the equipment at no up-front cost and instead charge for its ongoing upkeep and use.

The wonderful result is a longer-term relationship than a traditional product sale would have yielded. Under the old model, a customer buys or leases a thing and gets some kind of warranty and support package with it – and then a salesperson is back within a predictable amount of time trying to sell an upgrade or extension. Under the new model, the customer simply signs up, typically for a five-year-plus relationship with a major asset. All the support and replenishables related to that machine are handled, through individual transactions, as part of the managed service. By analogy, imagine not buying or leasing the car of your choice but instead paying for its use by the mile.

GE's ability to price those "miles" right is critical to its ongoing competitiveness. For an MRI machine, GE must estimate the number of images that will be required over the life of the contract based on the demographics of the served area. Again, the company can make such estimates because of its network monitoring. Not long ago, we met with managers in GE's industrial capital equipment leasing division. These are the people responsible for those leased trailers you find at practically every construction site on earth. We were incredulous when we heard how much self-awareness the trailers have – even down to the number of times a particular door or window is opened in a given period. Why collect those data? "Because," we were told, "the business is actuarial science now."

Finding Your Smart Service Opportunities

Thinking about the business opportunities associated with a networked product is a highly creative process. Often there are no cut-and-dried markets to identify and size. Rather, there are whole new markets that *might* develop as networked products are rolled out. To find your opportunities, start by looking at the life cycle of your product. What are the activities the customer engages in to procure, own, use, and dispose of it? Next, check out the adjacencies. For each of the identified activities, what else is the customer close to or in contact with when performing the activity? And what other activities precede and follow the activities you've identified? Finally, once you've examined the possibilities offered by these various activities and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adjacencies, bundle the most economically attractive elements into a total opportunity. Each of these steps bears further explanation.

Looking at the Life Cycle. The first step involves identifying the activities that are directly connected with owning and using your product. (See the exhibit "The Product Life Cycle from a Customer's Perspective" for the list of activities one company generated.) The most obvious activity that a connected product can streamline, while at the same time allowing the manufacturer to intervene, assist, and reap benefits, is maintenance. If your product can detect that one of its parts is approaching failure and can alert you to that fact, you are in a perfect position to benefit the customer – and to own the opportunity to deliver maintenance services.

It's well known that the profit in printers, for example, is in the replenishables, such as toner cartridges. But there are clones of most toner cartridges, and they cut into both the revenues and the margins in a printer manufacturer's ink sales. Hewlett-Packard has responded by adding a very simple bit of connectivity to one of its printer models. The printer can detect when its toner is low and can initiate a just-in-time order for a new cartridge. By adding this simple new function to its machines, HP has reclaimed ownership of a high-profit transaction in which it had suffered encroachment.

But maintenance is only one activity to consider; the life cycle of a product has many pockets of value. In their HBR article "Go Downstream: The New Profit Imperative in Manufacturing" (September–October 1999), Richard Wise and Peter Baumgartner analyzed the difference between a product's value at purchase and its value throughout its life cycle, for a variety of industrial assets. They found, for instance, that a buyer of a locomotive engine ends up spending 21 times its purchase value to support its use. Our own research suggests that any asset that costs more than ten times its purchase value to use is a clear candidate for networking. At that level, almost anything a company does to learn about the product and its continual use will offer opportunities for the business to enhance its profitability.

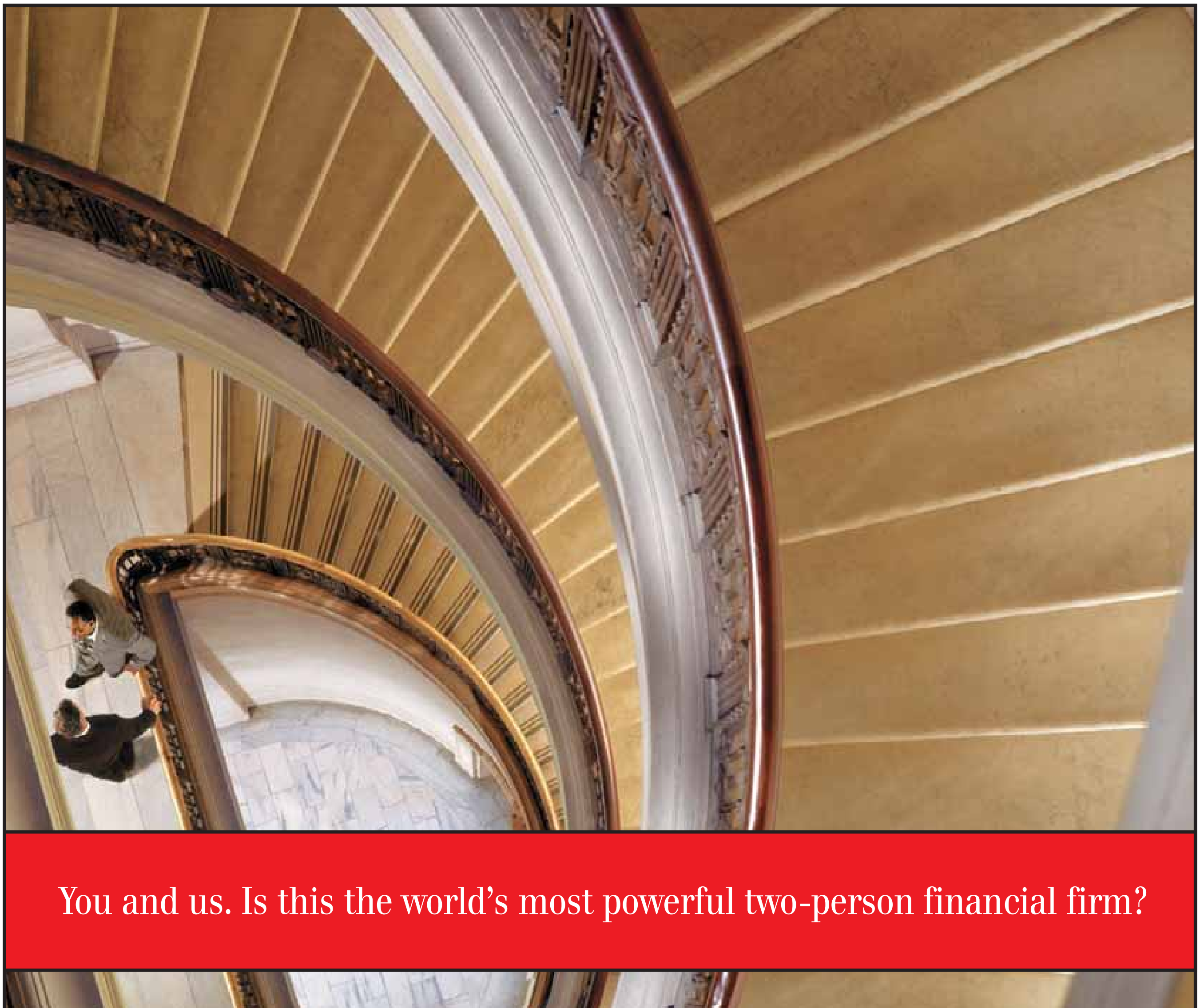
Checking Out Adjacencies. Having outlined the customer's activities in the life cycle of your product, you'll want to take a second look, this time studying the adjacencies. What else is the customer close to or in contact with when performing each of these activities? And what other activities precede and follow this set of activities? Sometimes, even when an opportunity is not directly connected to a product, the product can serve as a gateway to it. Nearly all digital cameras, for instance, need some form of connectivity to a computer, where the photos are viewed, sorted, edited, and stored. Kodak has responded to this adjacent opportunity by closely integrating its digital camera technologies with widely available PC software and Web applications so it can follow those activities and go beyond them. The company has also partnered with specialty service providers such as Target and Walgreens that produce quality prints of the photos.

Getting Perspective on the Whole Opportunity. So far, we've been discussing how to look for opportunities, but, to be precise, we're actually talking about how to look for elements of an overall business opportunity. A manufacturer might find that adding connectivity to an MRI scanner, for instance, will help it in several ways. The connectivity might enable the just-in-time ordering of replenishable materials. It might alert the product maker to maintenance needs and so allow it to lock in service contracts with customers. It might allow the manufacturer to perform machine calibration and validation, functions previously handled by hospital personnel, for which it can now receive separate compensation.

The Product Life Cycle from a Customer's Perspective

One company we worked with identified the following activities involved in owning and using one of its products. The question then became, "Which of these activities represent opportunities?"

- >> Determining requirements and justifying purchase of the product
- >> Finding a product supplier
- >> Financing the purchase
- >> Installing the product
- >> Modifying other products or processes to work with the product
- >> Adapting the product to its environment or to a specific use
- >> Maintaining the product and replacing parts
- >> Replenishing materials (for instance, paper and toner for a copier)
- >> Training personnel to use the product
- >> Using the product
- >> Upgrading the product
- >> Disposing of product waste
- >> Disposing of the product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Each of these services is an opportunity in itself; together, they form an overall business opportunity.

Four Flavors of Success

HP and Kodak both found business opportunities by looking at their product life cycles and examining the adjacent activities related to their products' primary activities. In HP's case, a single product (a printer) made by a single company (HP) was the sole gateway to the business opportunity. In Kodak's case, the company tapped a business opportunity in which it supplies the products (digital cameras) but also relies on partners to supply their expertise in user interfaces and photo processing.

As you look at the opportunities available to your company, there are, likewise, two possibilities. It may be that most of the elements of the opportunity are attached directly to your product's life cycle, so you'll be able to pursue the opportunity alone. Or it may be that the opportunity lies mainly in the adjacencies, so you will have to partner with others. The direction you take will help determine the kind of business model you should adopt after connecting your product. If you go it alone, it may be as what we call an "embedded innovator" or, more ambitiously, as a "solutionist." If you partner with others, it may be as an "aggregator" or as a "synergist." These are the four basic business models available to product makers that decide to embrace smart services. Let's look at each in turn.

The Embedded Innovator. The embedded innovator is the most product-centric of the models. Customers may still perceive the physical product as the source of primary value, and they will expect to continue receiving the support services they have in the past (installation, warranties, maintenance contracts, and so on). Historically, manufacturers have bundled such services with their products to make sales. Thus, embedded innovators that decide to add connectivity to their products may have a hard time levying additional charges in relationships where everything was previously included.

Embedded innovators that decide to add connectivity to their products may have a hard time levying additional charges in relationships where everything was previously included.

Because the embedded innovator has built intelligence and communications into its products, however, these goods become the company's inanimate silent partners. The near-perfect visibility of products that can be remotely monitored greatly optimizes the delivery of services, eliminates waste and inefficiency, and raises service margins. Thus, it is largely in these areas that companies achieve ROI on their device-networking investments. (Think PepsiCo's returns on its vending machines and fountain systems, and Emerson Electric's returns on its backup network power systems.) But it doesn't have to end there. The embedded innovator can also add new value to its products that could not have been achieved without networking – for instance, allowing customers to automatically upgrade their products by means of software downloads. Heidelberg is a good example of a successful embedded innovator.

The Solutionist. In the solutionist business model, a single product is still the dominant gateway to a business opportunity, but the scope of high-value activities associated with the product is broader. Think, for example, of all the activities associated with the life cycle of an MRI scanner:

1. Determining requirements and whether having a scanner is justified
2. Financing the scanner
3. Installing the scanner
4. Testing, calibrating, and validating the scanner
5. Maintaining and replacing parts
6. Replenishing materials (gases and imaging media)
7. Training personnel to use the scanner
8. Determining a patient's need for a scan (preliminary diagnosis)
9. Preparing the patient for a scan
10. Scanning the patient
11. Interpreting the scan
12. Updating the software
13. Upgrading the hardware

Because of the high value, complexity, and cost of MRI scanning, nearly all of these activities represent an opportunity for a scanner manufacturer. (Activities 8, 9, 10, and 11 are primarily medical matters and thus cannot be the province of a manufacturer – but that still leaves nine activities that are economic opportunities for scanner makers.) This is precisely the situation GE Healthcare has stepped into, positioning itself as a complete solution provider, or a solutionist.

Along similar lines, consider Honeywell, which makes (among other things) control and automation systems for petroleum refining. Recognizing that the start-up of a new refinery to process petroleum represents a fraction of the total expense associated with maintaining and optimizing the facility, Honeywell developed a new mode of customer service called Experion Process Knowledge System (PKS). PKS is a collection of embedded-intelligence technologies deployed at a customer's refinery and controlled and monitored remotely. The system performs a variety of manufacturing equipment support and optimization tasks formerly handled exclusively by maintenance personnel.

PKS customers typically experience fewer false alarms indicating that a process is in danger of failing, less unanticipated downtime, and lower maintenance costs. They can work with Honeywell to access knowledge related to their systems and equipment performance. The clear value of the program has allowed Honeywell to charge a premium for the system, and, in many cases, the company has been able to increase the scope of services and value it provides its customers.

Innovative companies can develop better products faster and more efficiently because they are built that way. UGS delivers a suite of enterprise Product Lifecycle Management, or PLM, solutions designed to drive top-line revenue growth by building a streamlined, repeatable process of innovation for all types and sizes of companies. Better yet, the UGS® portfolio offers an open approach that works with your legacy systems and spans the entire product lifecycle. By standardizing your company's best practices, our PLM solutions allow you to speed up the entire collaborative development process, so you can evaluate more ideas and get the best ones to market faster. Automated processes reduce waste, prevent duplication and improve the quality of products. Plus, the UGS portfolio is backed by an unparalleled commitment to our customers' success. With UGS solutions you won't just create products that are one step ahead, you'll create a company that is. Visit www.ugs.com/go/strategy to explore our customer case studies and to discover for yourself what UGS can do to help transform your company.

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How Smart Do You Want Your Products to Be?

Obviously, not all devices and subsystems need to be networked. Consider, for example, the difference in value between networking a refrigerator in a small office and networking a refrigeration system in a grocery store, where failure would have much greater consequences. In the latter case, a one-night shutdown could cost the store a year's profits, so the up-front cost of networking is an obvious investment. The decision to network a product will depend largely on how that product will be used and the potential role it can play in a larger system.

In general, a device is *not* a candidate for networking if it:

>> Is not mechanical or electromechanical

>> Is very simple or inexpensive and thus not worth the initial investment of networking

>> Has no important information to share

>> Has no available or reliable network access

>> Has a very brief or very long (15-year-plus) life span

The benefits of networking depend on the context, but there are some important issues to consider when deciding what to network:

>> **The Impact of a Device Failure.** Not every failure is catastrophic. If a keyboard breaks in a food-processing plant, production won't stop. The failure will be confined to one specific computer, and the keyboard can be easily and cheaply replaced. But if the plant's power system suddenly stops working, the end result could be vast amounts of wasted products and employee time.

>> **The Value of Device Information.** A scanner at a department store is a good candidate for networking because the data it collects can inform many decisions related to customers' buying behaviors. Connectivity will deepen the manufacturer's insight into purchasing patterns, inventory, procurement, and product or store designs.

>> **The Impact of Networking.** If technicians know in advance that the HVAC system in a commercial office building may break down (because the connectivity they've built into the system allows the equipment to be continually monitored), they can diagnose and repair the problem before tenants notice any issues. They can eliminate the downtime and the expense of evacuating the building.

>> **The Cost and Ease of Connectivity.** Most companies can comfortably justify buildingwide networking or device enablement because they can amortize the expense across multiple departments and products. By contrast, the initial costs and complications of creating a home network are prohibitive for most households.

>> **The Device Turnover Rate.** If you add connectivity to a device with a life span of more than 15 years, you will probably create a technology obsolescence problem – even if the device is designed so it can be updated remotely via software downloads and so on. Meanwhile, a device with a very short life span might be networked only for its content or commerce opportunities rather than for its performance or maintenance considerations, potentially making the ROI harder to achieve.

>> **The Service Needs.** If a vending machine could notify its owner when it needed to be restocked or repaired, the company could use employees much more efficiently and save a significant amount of money by eliminating unnecessary site visits.

>> **The Importance of Information.** Medical devices that need to transmit vital health information quickly to a variety of people and locations are excellent candidates for networking.The ability to simultaneously inform technicians, specialists, primary care physicians, and the patient is extremely valuable.

>> **The Location of the Device.** Certain devices and systems are harder to maintain than others simply because of their location. If a motor in an offshore oil rig could remotely inform the owners of its health and performance, complicated and unnecessary service visits would be a thing of the past.

Again, the difference in the opportunities facing an embedded innovator and a solutionist is the breadth of *high-value* activities associated with their products. So, between HP's printers and GE Healthcare's MRI scanners, there is a world of difference in the scope of services that could be offered with or through the connected device. In HP's case, the change in business model has been incremental; the company has remained a manufacturer of printers and toner cartridges and has made money by selling these things. Connectivity simply gives it a lock on the toner sales, which is where the profits are. By contrast, GE Healthcare's new business model is far from that of a simple maker and seller of products. The connected scanner opens up many service opportunities, and to tap these, GE has built a large, well-tooled, complex service infrastructure. What both companies have in common is that they've found and tapped business opportunities dominated by their own devices. Neither organization has been very dependent on partnerships (although they could use them, and GE certainly does).

Out of the Basement

If you take only one message away from Eaton Electrical's Home Heartbeat initiative, it should be that successful product-centric businesses are rapidly transitioning to smart services. The story is all the more interesting because it goes beyond the business-to-business realm, bringing the benefits of machine-to-machine communication to home owners.

Cleveland-based Eaton started out in 1911 making axles and other truck parts and later diversified into other engineered components, including residential circuit breakers. As the end of its first century in business approached, it found itself in very mature businesses fighting with established competitors over every point of market share. That's when a few visionary managers within the electrical products division started to think about device connectivity and the broader solutions it could offer consumers.

The system they envisioned, recently launched as Home Heartbeat, monitors the status of a home and alerts the home owner when something is amiss. To do this, it uses water sensors, open/closed sensors, and power sensors, which communicate to a base station over a wireless network. That base station communicates with a key fob device carried by the home owner. The system can also be instructed to send an e-mail or text message to a cell phone if there is a change in the state of a sensor.

Pause for a moment to consider how useful this would be. You're sitting on the train to work, and it occurs to you that a space heater might have been left on. You can check your key fob to be reassured instead of having to turn back. (The key fob device works only within a certain range of distance but does capture data about the status of your home as you left it.) Home Heartbeat features a water shut-off valve that can be automatically activated by sensors. So if you're on vacation, and you hear about a cold snap, power outages, and burst pipes back home, you can check your e-mail; in the meantime, you can be confident that if the water needed to be shut off, it was.

Home Heartbeat is a good example of smart service innovation: Eaton built awareness and connectivity into the devices it was already selling and, in this way, was able to position itself not just as a product vendor but also as a service provider. No longer consigned to an obscure corner of the basement, the Eaton brand now stands for total home awareness. And the company is now in the role of aggregator, courting an entirely new range of partners, from wireless carriers to insurance companies.

The Aggregator. The two remaining business models are those in which the business opportunity cannot be tapped by a single device and a single vendor. There are situations in which a device may collect data, but the information, in and of itself, may not be valuable enough to create an opportunity. Instead, several disparate devices may work within an environment, and only by connecting all or most of them can a company create a high-value body of data. An extreme example of this is a simple table lamp. It can be enabled to sense and communicate information such as when it is on and when it is off, the wattage flowing through it, and perhaps even the age of the bulb or bulbs it is burning. Of course, none of these data, on their own, are likely to be of high economic worth. If the lamp burns a 100-watt bulb constantly in an empty room, the money being spent on the wasted electricity will hardly break most families. But the sum of all wasted electricity is worth a home owner's attention, and so an application that collects and deploys all those data may be of enough value to represent an economic opportunity for a manufacturer. And there may be further value in building remote-control options into the lamp and other devices.

In the case of a system that gathers and processes data from multiple devices, your product may play one of two roles: It can be central or peripheral. The hub or a spoke. The brains of the operation or just a body part. This last variable defines our third and fourth business models. When such a system is required in order to define and tap an opportunity, then there will be an aggregator, which controls the application's actual data collection and central-processing power; and there will be synergists, whose devices contribute valuable data or functions that are controlled by the application.

Aggregator businesses we've studied include Eaton Electrical, Gardner Denver, Electrolux, and Rockwell Automation; they all provide remote monitoring and related Web-based services across channel, alliance, and customer-fulfillment networks. In other words, these companies bring their "secret weapon" to bear on all their business relationships, not just on their relationships with customers.

Aggregators are still primarily product companies and don't vertically integrate all aspects of their product life-cycle management. For example, they tend not to be involved in product recycling or disposal. Instead, they sell interested third parties smart-information services – or access to the data collected from networked devices – either for a fee or for a share of earnings. Where aggregators do choose to deliver services directly to the customer, they now own that relationship as never before, with distinct barriers to competition. Aggregators cannot be cut out of the services loop by competitors or channel partners because their possession of device-generated data allows them to offer services more intelligently and profitably than entities that cannot see into the status of the products in question.

Aggregators will make larger investments in data warehousing and data mining than will embedded innovators, and they will achieve some of their ROI by providing smart services to their distributor and system-integrator partners. For example, a large percentage of installed uninterruptible power supply (UPS) devices contain dead batteries. Unfortunately, users discover this only when these devices fail to work during a power outage. In the embedded innovator model, a networked UPS device could initiate its own order for a battery replacement from the vendor – in itself, a smart service. But imagine how an aggregator could build on that opportunity. Eaton Electrical (a global leader in circuit breaker technology), for instance, is bringing something called Home Heartbeat, a home monitoring system, to the consumer market. Eaton has partnered with companies that sell power-quality devices, such as fire alarms, backup generators, and the UPS devices mentioned previously. Eaton has even partnered with insurance companies, which would gladly offer Eaton's customers incentives for deploying verifiable battery replacements in their connected devices. (See the sidebar "Out of the Basement.")

Illinois-based Gardner Denver has a similarly expansive vision of how it might aggregate information from many sources to serve buyers of its air compressors. Compressed air is used in all kinds of industrial processes; some 350,000 systems are in place in the United States, covering 97% of manufacturing plants. As a first step toward intelligent device management, Gardner Denver has enabled its equipment to monitor and communicate the wear and tear on "expendables" in plant equipment, such as piston rods and cylinder liners. As a result, customers can buy subscriptions from the company and can receive performance trend information and preemptive maintenance service. But while Gardner Denver makes the compressors, any application of compressed air calls for a total system that includes components such as air coolers, filters, and dryers. Once Gardner Denver's devices are in place for its own and its customers' benefit, it's a short step to providing other manufacturers and distributors with data that could inform their pieces of the system. The opportunity is especially appealing to a manufacturer like Gardner Denver, which is not the biggest in its industry and must sell through channels that are hardly captive to it. If it can use networked devices to tie customers, distributors, and other support elements into a closed-loop, asset management system, it can participate in the highest-value deals instead of being cut out of them. That's the beauty of being an aggregator.

The Synergist. It is possible to succeed in the age of smart services simply by providing intelligent devices that play well with others. When you set out to create a product that can contribute valuable data or functionality to other connected products, you are pursuing a synergist model.

Consider the Dutch electronics manufacturer Philips, which specializes in lighting ballasts and controls. The company believes there could be a huge opportunity for value creation if complementary manufacturers in building-systems equipment could share their data. That is, if data could be collected from all the electrical devices in a commercial facility, the aggregated information could then be used to create extraordinary levels of customer service. So Philips is helping to build a community of several parallel players in the commercial building-management arena in order to leverage all the valuable data about usage patterns, potential energy savings, and the like. Central to this community's plan is an agreement to go with the ZigBee open standard for wireless connectivity. Through its participation in the ZigBee Alliance, a group formed to further the ZigBee standard, Philips has been pursuing a synergist model with several important global partners.

Your Worst Enemy

What will stand in your way as you try to move forward in one of these business models? It would be irresponsible for us to minimize the technology hurdles you'll face. Automated information gathering can easily generate trillions of data points every day for a typical product manufacturer. Each of these data points may be very tiny (the torque, pressure, or temperature of a specific component or the physical location of a product), but they must all be validated and stored and then subjected to the sophisticated techniques (data smoothing, data mining) that turn them into intelligence that can be acted upon. Clearly, such intense data processing cannot simply be thrown at today's average corporate IT infrastructure or application suite. For example, companies pursuing RFID-tagging initiatives will need organizationwide data standards and new middleware to synchronize the data from disparate sources into compatible formats.

Still, it's safe to say that IT infrastructure is not the biggest obstacle for most companies. Much harder to overcome is the product-centric mind-set of most senior management teams, along with the P&L structure that perpetuates that philosophy. Manufacturing remains the basic building block of the P&L for most product companies, and the cost structure of a product business raises all kinds of barriers to service-oriented investments. Across virtually every industry, dozens of examples of intelligent device management have sprouted up as technical or functional initiatives – in R&D, in supply chain applications, or in customer support, for instance. These initiatives hit a ceiling, though, when the expense of implementing them became hard to justify. Often, a smart services initiative will benefit each functional area to varying degrees – either in the scope of advantages gained or in the time needed to realize advantages – making it hard to get everyone to agree that the initiative makes sense and should be considered a financial priority. The frustration in organizations is immense, as middle managers who believe in the potential of smart service try to elevate the topic to a strategic level.

Senior management, one middle manager told us, "kind of gets it, and kind of doesn't." We've seen this for ourselves. A different manager invited us to his company for a presentation on the need to invest aggressively in remote services. The ranking executive in the room had a predictable response to the proposal: "As soon as you lose the line of sight between the product P&L and the plan, you lose control of the business."

What seems to be missing is a good script that communicates the opportunity to senior management in a compelling way. Our research regarding smart services is our contribution to creating that script – and it may find an audience in a competitive context that increasingly focuses managers' minds on the need to grow organically and to do so by selling service. If not, we expect the script ultimately to be handed to business leaders by equities analysts. When they start asking questions such as "Are the assets you sell to customers networked?" and placing the companies that say yes in a distinct group in terms of potential future performance, interest in the topic will undoubtedly boom.

• • •

Companies such as GE, Heidelberg, Air Products, and others we've discussed have undergone what we like to call the "ubiquity shift." They've perceived that once intelligent devices become ubiquitous – as they will – the commercial context will change, and they've realigned their strategies to capitalize on that new reality. Meanwhile, most product-centric companies remain at least a full step behind in their thinking. They know that their best hopes for growth lie in increasing the services component of their businesses, but they are focusing on the same kinds of services that have always surrounded their products. Their plan is to capture the adjacent service markets currently owned by other companies and persuade customers to pay for the (marginally enhanced) services they used to provide gratis. In other words, they are moving aggressively to implement – by about 2010 – a 1990s "dumb services" strategy and are in serious danger of destroying value rather than creating it.

Making the ubiquity shift is challenging, but it starts with a simple insight: A device that can report back to its maker on its status and usage represents the foundation for much richer and longer-term customer relationships. From that straightforward proposition spring the four new business models we've outlined. For any given company, it may make the most sense to be an embedded innovator, a solutionist, an aggregator, or a synergist. But woe to the company that takes none of these paths; it will soon find its best customers locked in – and happily – to other smart service providers.

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To order, see page 159.

Six Sigma Pricing

When I picked up your May 2005 issue and saw "Six Sigma Pricing" by ManMohan S. Sodhi and Navdeep S. Sodhi listed on the cover, I quickly and excitedly began to read it. What I read was disappointing. More than that, the solution offered to Acme – the article's main example – give the salesperson discount authority – is wrong. The real problem is salespeople setting prices without full information. This information, which includes item profitability, plant utilization, competitor directions, and product-mix goals, is often better evaluated centrally, which is why Acme's pricing group exists and why salespeople cannot optimize pricing. Giving salespeople discount authority will probably result in margin erosion because, unless Acme's sales force is compensated based on margin or has developed a strong value-selling culture, its discount level will quickly become the effective new list price.

I imagine that the second action, better measurement and reporting, contributed strongly to the immediate profit gains. The attention focused on pricing due to the Six Sigma project itself probably helped as well. But the larger gain, the 5% price increase, had nothing to do with the Six Sigma work. That gain occurred because a manager felt market conditions were right and took the risk.

My biggest concern is that now Acme is under the illusion that, because it applied Six Sigma, it has exhaustively looked at its pricing opportunity and defined solutions. This was the wrong tool to use, and the issue of pricing defects, as defined, was probably not among the top pricing opportunities. Where were the tried-and-true pricing analysis tools? Price differences by segment, customer value analysis, the importance of value selling versus price in winning an order, hit rate, mix effects on plant capacity, and, of course, anticipated competitor behavior? Sorry, but this consultant isn't ready to add Six Sigma to his pricing diagnosis tool kit.

Alan Fortier
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Six Sigma Pricing

Sodhi and Sodhi respond: Alan Fortier repeats some common misperceptions about pricing and Six Sigma, and we thank him for the opportunity to correct these:

First, Six Sigma is not intended to create strategy but to control strategy adherence. It does this by improving

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operations involving repeated processes. In our article, we show how Six Sigma applies to pricing processes; in particular, it controls discount levels off list prices and does not set list prices. Acme has centralized list-price settings based on market factors. However, it must execute discounts for the tens of thousands of individual transactions in one division in a year in a decentralized way. This process requires better control, and Six Sigma proves extremely useful for that.

Second, giving personnel flexibility does not mean absence of control. Fortier misrepresents us as advocating giving Acme salespersons discount authority. Acme creates tighter (not looser, as Fortier states) and escalating discount guidelines for salespeople, sales managers, and pricing personnel. Six Sigma helped Acme achieve the right amount of control.

Third, a Six Sigma project is not a chat session and involves tried-and-tested, robust statistical and other tools. We discuss pricing (discount) analysis specific to region and job size, for which we used ANOVA, a statistical tool. Furthermore, each stage has its own set of tools applicable to different situations; we discuss some of these as well.

Fourth, having better measurement and reporting is easier said by consultants than done by companies. The most important challenge for CEOs is bringing about organizational change. The Six Sigma project at Acme helped build trust between sales and pricing groups, allowing for pricing processes to gain acceptance and be effective. Better measurement and reporting resulted from this effort.

Fifth, when it comes to pricing, "cowboy" managers taking the risk can be part of the problem rather than part of the solution. Actual customer prices being too high can also be a defect. (We discuss only the postdiscount prices being too low as a defect.) So Acme's gains come from many sales and pricing personnel sticking close to desired discount levels off the list prices. Acme bases this on transaction size, sales territory, and other factors rather than on bold decisions by mavericks.

Finally, a company doesn't just have to consider how it presents itself in the market but how it conducts itself internally as well. Fortier suggests that Acme missed the boat by not looking at problems exhaustively and only presenting the external view. In fact, Acme used the external view to set the list price and the internal view to improve the setting of transaction-specific discounts to handle the company's immediate problems.

Fortier & Associates may offer greater benefits to clients by using Six Sigma, especially if some of them already have a Six Sigma foundation. We reiterate that Acme's Six Sigma project used internal resources only, no investment in IT, and just three months to realize the gains we reported.

How Business Schools Lost Their Way

Warren G. Bennis and James O'Toole in their May 2005 article "How Business Schools Lost Their Way" point to the business community as a source of the pressure for curriculum specialization by its hiring of MBAs with narrow specialties. However, the authors let the corporate world off much too easily. Most of our MBA candidates already have business degrees with majors in management, marketing, finance, even sports marketing. Those students are enrolled in those programs because corporate America has told them an MBA is a key to success in the job hunt, and the more specific the degree, the better the fit.

Then, out of the other side of the same office comes the reality check: You will work for several different companies across several different industries in your career. The same corporations are fast to point out that the MBAs they see today are narrow thinkers. Technically competent, they lack the soft skills to manage and lead. At the extreme, some major companies want the MBA delivered to their people at their location. In those situations, the specialized professor is faced with a specialized classroom with only one corporate culture represented and where each student must carefully choose the comments and reactions shared in a potentially threatening class environment. Not a good place to learn and talk freely about managing culture change, or your boss for that matter. Other extreme models include the Accelerated MBA, or "how fast can I get my ticket punched" model, and the pure and near-pure distance learning, Internet, or e-learning MBA.

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Toward a Theory of High Performance

As an avid reader of business books, I greatly enjoyed "Toward a Theory of High Performance" by Julia Kirby in your July–August 2005 issue. Given the difficulty companies have in staying on top, it is not surprising that there is no consensus of secrets for achieving lasting top performance. Nonetheless, it is interesting to compare the prescriptions.

I'd add more fuel to the fire by expanding the list of perspectives and analyses. One of the most interesting books in this genre is *The Living Company* by Arie de Geus (Harvard Business School Press, 2002). While at Shell, the author and others studied companies older than Shell and important in their industries. This netted 27 companies still strong after at least 100 years. These companies shared four characteristics: sensitivity to the environment, cohesion and identity, tolerance and decentralization, and conservative financing.

Will and Vision: How Latecomers Grow to Dominate Markets by Gerard J. Tellis and Peter N. Golder (McGraw-Hill, 2002) presents another interesting angle. The authors' focus is testing whether the first to enter a market has an insurmountable edge to enduring leadership. They concluded that "few pioneers survive as leaders." Indeed, they found that enduring market leadership requires vision (a unique perspective, a drive to serve

a mass market) and will (persistence, relentless innovation, financial commitment, and asset leverage.)

What would be most interesting is to canvass these types of studies and then try to segment the discovered prescriptions by any company's specific situation, since each company's strategy and survival are unique and far less stable than these broad theories of performance admit.

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It's fine that management thinkers research performance management and then disseminate ideas; it's understandable that others spend time researching the research. But when the outcome is that we apparently just need a slightly better data set, I can't help but feel that Peters and Waterman were on to something in their book *In Search of Excellence.* From an academic perspective, you can criticize the methodology by which they established their "cool" research population, but from a practical position their advice to companies was to take action and stop managing so conservatively, which seems pretty sensible to me.

It strikes me that, rather like the research into a Theory of Everything, this subject is simply guaranteed to keep academics in business forever. When we've figured out the formula for performance management, the killer question will still remain valid: It might apply to history, but does it apply to the future?

Ready. Fire. Aim.

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Collaboration Rules

Innovation fundamentally takes two forms: radical and incremental. Science, for example, consists of both breakthrough ideas and extension and verification of those ideas. Philip Evans and Bob Wolf's brilliant July–August 2005 article, "Collaboration Rules," nicely shows how communities can innovate. However, the critical reader could pinpoint what appears to be incremental innovation in the examples of the Linux and Toyota communities. Few would dispute that Linus Torvalds's innovation was groundbreaking when he started to program Linux in 1991. However, when the community really started to play a role in the further development of Linux throughout the 1990s, it was highly effective to employ user feedback to conduct software debugging and continuous and incremental product refinement. So are communities good for radical innovation, too?

We think so. The open-source world has some great examples of products that are truly radical; for instance, Freenet, the peer-to-peer network invented by Ian Clarke and supported by a community of developers. Freenet allows complete anonymity in the sharing of information for both publishers and retrievers. In addition to the trust that Wolf and Evans describe, two additional rules were important to Freenet project innovation.

First, the Freenet community has very restrictive membership policies and joining scripts. Only insiders can change the official software code, and only 4% of the developers contributed more than 60% of all the software code. To become insiders, however, people had to demonstrate understanding of the software; highly sophisticated, technical coding skills; breakthrough ideas; and a consistent, high level of activity. For a radical innovation, you don't only want people just to be trusted and hardworking, but you also want them to be creative and talented.

Second, ideas are subject to competitive forces. Because Freenet was a radical design for a file-sharing network, and of interest to many (the software has been downloaded more than 1.5 million times since its inception), developers and others had competing ideas and radical solutions. However, the community of insiders considered the pros and cons and implemented only those it considered superior according to the project's functional goals. In this sense, projects that produce radical innovation might be less democratic than they appear at first glance.

Other communities that excel at radical innovation have probably adopted other practices. As a community of researchers and practitioners, we need to identify and share these practices.

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As Evans and Wolf rightly discern, open-source software development offers a superb model for effective collaboration. So does the much-heralded Toyota production system. Unfortunately, their article overlooks and underemphasizes some of the most important lessons these approaches have to teach about innovative collaboration and collaborative innovation. The real collaborative breakthroughs emerging from open source and Toyota are the products of a culture and technology of shared space: the models, prototypes, and simulations that collaborators use as their platforms and springboards for innovation.

Much the same way the software spreadsheet has revolutionized how individuals and organizations collaborate around budgets and financial planning forecasts, the "spreadsheeting" of product and process software within and between firms enables a new generation of highly interactive shared spaces. The ability to do more iterations of a design-per-unit time creates a new economics of innovation.

To their great credit, Evans and Wolf stress the cultural and organizational issues associated with getting organizations to use shared spaces more effectively. Credit and acknowledgment are essential for healthy collaborative cultures. The role of community building within the enterprise is similarly important. But what I've observed is that the role of informal collaboration – let's call it "gray-market collaboration" – is at least as important as more formal mechanisms to promote collaborative interaction.

Creating collaborative infrastructures – seamless and scalable networks of shared spaces – is every bit (pun intended) as important as developing incentives for creative collaboration. CEOs and innovation champions reading the Wolf and Evans piece should be inspired by its essential recognition of collaborative potential. But if they really want to tap and exploit that potential, they want to think hard and work harder to ensure that their innovative people have easy and inexpensive access to innovative shared space.


The Mechanics of Speed

Michael Schrage
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Wolf and Evans respond: Michael Schrage's spatial metaphor neatly restates a piece of our argument: The Toyota and Linux communities achieve superior collaboration via a universal shared space defined by simple and pervasive IT, shared semantics, and elements of shared intellectual property.

If Schrage means, more ambitiously, that specific software tools, such as the spreadsheet, define that space, then we are not so sure. Certainly, tools enable the collaborative spaces in our examples. But they tend to be ad hoc and so low tech as to be sometimes unrecognizable as software. Toyota has its A4 reports and *obeya* (big room), where large teams work in physical proximity. Linux developers rely on "listservs" and plain old e-mail. Each of these tools is pervasive, simple, and virally adopted.

Of course, new tools of all kinds have their value and perhaps are of paramount importance in other contexts. These tools can be pervasive, simple, and adopted by the practitioners if they need them.

As the Freenet example illustrates, other forces shape Schrage's shared spaces. Certain kinds of innovation dictate entry scripts and concentration of decision rights. Perhaps, as in many open-source projects, a core community (more hierarchical, hard to enter) performs one kind of role, and a periphery environment (flat, open) performs another. Or, perhaps (as in a phase of Toyota's Prius development), small groups compete and collaborate in a loosely modular, recombinant fashion. We are not arguing for a single homogeneous space devoid of any entry-barrier fences or hierarchical hills. But we do believe that a richer and more robust heterogeneity often emerges if managers will set the direction, create the preconditions, and then immerse themselves *as peers* in the real work.

Mechanics of Speed

We enjoyed the "The Mechanics of Speed" perspective from Ray Evernham in the July–August 2005 article "When Failure Isn't an Option" and agree that many aspects of motor racing relate to other high-performance organizations. We have conducted an in-depth study of success and failure in Formula 1 racing teams in our book *Performance at the Limit: Business Lessons from Formula 1 Motor Racing* (Cambridge University Press, 2005). We agree with Evernham that constant, open communication is very important.

However, one aspect we also explored was how the team reacted when things went wrong. In one particular case in 1991, Nigel Mansell lost the driver's world championship because his car had been released from the pits with a wheel nut undone. So what happened? Who was sacked? Who was blamed? The answer is no one. In the words of the chief mechanic at the time, Williams F1's Dickie Stanford: "We try to isolate the problem, not the person." In these high-performing teams, it is vital to develop an open, no-blame culture. Only in this kind of environment can mistakes be aired and discussed in order to improve overall performance.

This characteristic is also important within winning teams, especially effective multicultural teams. The recent dominance of Ferrari is attributed by those inside the organization not just to the driving brilliance of Michael Schumacher, but also to their ability to learn to be more open about their problems and mistakes across different functional units within the organization. For example, historically at Ferrari, the engine was deemed to be the most important element in the car, and the engine design team would rarely admit to any shortcomings in its product to other parts of the organization. That changed in the 1990s under the leadership of Jean Todt (French) with engine director Paolo Martinelli (Italian) working closely with technical director Ross Brawn (British) and chief designer Rory Byrne (South African) to ensure that all the potential weaknesses were recognized and that the design was optimized. Brawn summarized this best: "A Ferrari is a Ferrari. It's not an engine; it's not a chassis; it's not an aeropackage. It's a Ferrari."

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Executive Summaries

October 2005

"Planning your exit is like scheduling your own funeral; it evokes deep fears and emotions."
– page 62

COVER STORY

62 | Growing Talent as if Your Business Depended on It

Jeffrey M. Cohn, Rakesh Khurana, and Laura Reeves

Traditionally, corporate boards have left leadership planning and development very much up to their CEOs and human resources departments – primarily because they don't perceive that a lack of leadership development in their companies poses the same kind of threat that accounting blunders or missed earnings do.

That's a shortsighted view, the authors argue. Companies whose boards and senior executives fail to prioritize succession planning and leadership development end up experiencing a steady attrition in talent and becoming extremely vulnerable when they have to cope with inevitable upheavals – integrating an acquired company with a different operating style and culture, for instance, or reexamining basic operating assumptions when a competitor with a leaner cost structure emerges. Firms that haven't focused on their systems for building their bench strength will probably make wrong decisions in these situations.

In this article, the authors explain what makes a successful leadership development program, based on their research over the past few years with companies in a range of industries. They describe how several forward-thinking companies (Tyson Foods, Starbucks, and Mellon Financial, in particular) are implementing smart, integrated, talent development initiatives.

A leadership development program should not comprise stand-alone, ad hoc activities coordinated by the human resources department, the authors say. A company's leadership development processes should align with strategic priorities. From the board of directors on down, senior executives should be deeply involved in finding and growing talent, and line managers should be evaluated and promoted expressly for their contributions to the organization-wide effort. HR should be allowed to create development tools and facilitate their use, but the business units should take responsibility for development activities, and the board should ultimately oversee the whole system.

Reprint R0510C; HBR OnPoint 1924

IDEAS & TRENDS

FORETHOUGHT

16 | Beware of Economists Bearing Greek Symbols Underneath every economic model involving math lies a substrate of great simplification and imagination, says Columbia University's Emanuel Derman. **Reprint F0510A**

"Bureaucracy" Becomes a Four-Letter Word The tension between bureaucracy and innovation dates back to the reign of Louis XIV, says University of Oregon's William H. Starbuck. **Reprint F0510B**

Every Product's a Platform To exploit your product's platform potential, say consultants John Sviokla and Anthony J. Paoni, you need creativity – and good intellectual property protection. **Reprint F0510C**

Masters of the Multicultural Chief diversity officers, in new roles, foster innovation and generate revenues, writes author Frans Johansson. **Reprint F0510D**

Hang On to Those Founders Companies that retain their CEO founders when preparing for IPOs often come out ahead in the long run, says Martin L. Martens at Concordia University. **Reprint F0510E**

The Hazards of Hounding Customers who buy your product because they want to – not because you *make* them – are the most loyal, says Rice University's Paul M. Dholakia. **Reprint F0510F**

Been There, Read That Robert Morris, an Amazon Top 10 reviewer, helps you decide which business books are worth your time and attention. **Reprint F0510G**

Room at the Top Line Across the S&P 500, companies' sustainable growth rates exceed analyst growth forecasts, which means companies are not optimizing shareholder value, say consultants Rekha Sampath and Ajit Kambil. **Reprint F0510H**

Talk About Brand Strategy Communicating your brand strategy to the financial community can boost share price, say Columbia Business School's Natalie Mizik and University of Washington Business School's Robert Jacobson. **Reprint F0510J**

The Hardest Hire If your new COO will eventually succeed your CEO, says consultant Anne Lim O'Brien, be clear about which role you're seeking to fill. **Reprint F0510K**

Book Reviews HBR reviews four books.

HUMAN RESOURCES

HBR CASE STUDY

31 | The Cane Mutiny: Managing a Graying Workforce

Cornelia Geissler

Frank Heberer, a human resources manager at Medignostics, has proposed a long-term HR strategy for the German midsize pharmaceutical company. All his research points to trouble on the horizon: In just 25 years, more than a quarter of the country's population will be over age 65. What will happen to the firm when workers start retiring in droves? How will it attract smart new hires from a much smaller talent pool?

But the executive team is focused on cutting costs here and now. In fact, to save money, Medignostics recently withdrew from an early-retirement program sponsored by the German government. Meanwhile, age-related tensions at the company are growing. A 58-year-old account manager, angry about being forced to resume full-time hours and report to a jargon-happy tyke, has been taking lots of sick days and otherwise disengaging from his job. Heberer believes it is only a matter of time before other employees stage unofficial "strikes," too.

Heberer is convinced that, for Medignostics to stay competitive, its leaders have to start thinking strategically about the demographic shift. He's trying to sound the alarm; he's even put together plans to create a child care center to help attract working parents – but his boss has summarily rejected the idea as a luxury Medignostics can't afford. How can Heberer persuade his boss and the other executives, all nearing retirement age themselves, to take the long view?

Commenting on this fictional case study are Norbert Herrmann, an HR consultant in Bad Endorf, Austria; Barbara D. Bovbjerg, the director of Education, Workforce, and Income Security Issues at the U.S. Government Accountability Office in Washington, DC; Dietmar Martina, the director of Groupwide Performance Measurement at Deutsche Telekom in Bonn, Germany; and Eileen A. Kamerick, the chief financial officer of Heidrick & Struggles International, headquartered in Chicago.
Reprint R0510A

LEADERSHIP

45 | Zeitgeist Leadership

Anthony J. Mayo and Nitin Nohria

Companies and leaders don't succeed or fail in a vacuum. When it comes to long-term success, the ability to understand and adapt to changing business conditions is at least as important as any particular personality trait or competency.

A clear picture of how powerful the zeitgeist can be emerges from the authors' comprehensive study of the way the business landscape in the United States evolved, decade by decade, throughout the twentieth century. Six contextual factors in particular, they found, most affected the prospects for business: the level of government intervention in business, global events, demographics, shifts in social mores, developments in technology, and the strength or weakness of the labor movement.

A lack of contextual sensitivity can trip up even the most brilliant executive. No less a luminary than Alfred P. Sloan was relieved of GM's day-to-day management in the 1930s because he was unwilling to meet with the new UAW. Conversely, an understanding of the zeitgeist can play a crucial but unheralded role in business performance. Jack Welch is widely credited with GE's remarkable success during the 1980s and 1990s, for example, but far less attention has been paid to his predecessor, the statesmanlike and prudent Reginald Jones, who sustained strong revenue and profit growth during the heavily regulated stagflation of the 1970s.

To better understand this connection between business performance and context, the authors studied 1,000 great U.S. business leaders of the twentieth century and identified three distinct archetypes: *Entrepreneurs,* often ahead of their time, overcame dire challenges to build something new. *Managers* excelled at reading and exploiting the existing zeitgeist to grow their businesses. *Leaders* defied context to identify latent potential in businesses others considered mature, stagnant, or in decline.

In every decade, all three archetypes were vital. It is the ongoing regeneration of this pattern in the business life cycle that ultimately sustains development and progress.
Reprint R0510B

STRATEGY & COMPETITION

72 | The Office of Strategy Management

Robert S. Kaplan and David P. Norton

There is a disconnect in most companies between strategy formulation and strategy execution. On average, 95% of a company's employees are unaware of, or do not understand, its strategy. If employees are unaware of the strategy, they surely cannot help the organization implement it effectively.

It doesn't have to be like this. For the past 15 years, the authors have studied companies that achieved performance breakthroughs by adopting the Balanced Scorecard and its associated tools to help them better communicate strategy to their employees and to guide and monitor the execution of that strategy. Some companies, of course, have achieved better, longer-lasting improvements than others. The organizations that have managed to sustain their strategic focus have typically established a new corporate-level unit to oversee all activities related to strategy: an *office of strategy management* (OSM).

The OSM, in effect, acts as the CEO's chief of staff. It coordinates an array of tasks: communicating corporate strategy; ensuring that enterprise-level plans are translated into the plans of the various units and departments; executing strategic initiatives to deliver on the grand design; aligning employees' plans for competency development with strategic objectives; and testing and adapting the strategy to stay abreast of the competition. The OSM does not do all the work, but it facilitates the processes so that strategy is executed in an integrated fashion across the enterprise. Although the companies that Kaplan and Norton studied use the Balanced Scorecard as the framework for their strategy management systems, the authors say the lessons of the OSM are applicable even to companies that do not use it.

Reprint R0510D; HBR OnPoint 1894; OnPoint collection "Focus Your Organization on Strategy – with the Balanced Scorecard, 3rd Edition" 1886

ORGANIZATION & CULTURE

82 | The Passive-Aggressive Organization

Gary L. Neilson, Bruce A. Pasternack, and Karen E. Van Nuys

Passive-aggressive organizations are friendly places to work: People are congenial, conflict is rare, and consensus is easy to reach. But, at the end of the day, even the best proposals fail to gain traction, and a company can go nowhere so imperturbably that it's easy to pretend everything is fine.

Such companies are not necessarily saddled with mulishly passive-aggressive employees. Rather, they are filled with mostly well-intentioned people who are the victims of flawed processes and policies. Commonly, a growing company's halfhearted or poorly thought-out attempts to decentralize give rise to multiple layers of managers, whose authority for making decisions becomes increasingly unclear. Some managers, as a result, hang back, while others won't own up to the calls they've made, inviting colleagues to second-guess or overturn the decisions.

In such organizations, information does not circulate freely, and that makes it difficult for workers to understand the impact of their actions on company performance and for managers to correctly appraise employees' value to the organization. A failure to accurately match incentives to performance stifles initiative, and people do just enough to get by.

Breaking free from this pattern is hard; a long history of seeing corporate initiatives ignored and then fade away tends to make people cynical. Often it's best to bring in an outsider to signal that this time things will be different. He or she will need to address every obstacle all at once: clarify decision rights; see to it that decisions stick; and reward people for sharing information and adding value, not for successfully negotiating corporate politics. If those steps are not taken, it's only a matter of time before the diseased elements of a passive-aggressive organization overwhelm the remaining healthy ones and drive the company into financial distress.

Reprint R0510E

MANAGING TECHNOLOGY

96 | Information Technology and the Board of Directors

Richard Nolan and F. Warren McFarlan

Ever since the Y2K scare, boards have grown increasingly nervous about corporate dependence on information technology. Since then, computer crashes, denial of service attacks, competitive pressures, and the need to automate compliance with government regulations have heightened board sensitivity to IT risk. Unfortunately, most boards remain largely in the dark when it comes to IT spending and strategy, despite the fact that corporate information assets can account for more than 50% of capital spending.

A lack of board oversight for IT activities is dangerous, the authors say. It puts firms at risk in the same way that failing to audit their books would. Companies that have established board-level IT governance committees are better able to control IT project costs and carve out competitive advantage. But there is no one-size-fits-all model for board supervision of a company's IT operations. The correct approach depends on what strategic "mode" a company is in – whether its operations are extremely dependent on IT or not, and whether or not it relies heavily on keeping up with the latest technologies.

This article spells out the conditions under which boards need to change their level of involvement in IT decisions, explaining how members can recognize their firms' IT risks and decide whether they should pursue more aggressive IT governance. The authors delineate what an IT governance committee should look like in terms of charter, membership, duties, and overall agenda. They also offer recommendations for developing IT policies that take into account an organization's operational and strategic needs and suggest what to do when those needs change.

Given the dizzying pace of change in the world of IT, boards can't afford to ignore the state of their IT systems and capabilities. Appropriate board governance can go a long way toward helping a company avoid unnecessary risk and improve its competitive position.

Reprint R0510F

CHANGE MANAGEMENT

108 | The Hard Side of Change Management

Harold L. Sirkin, Perry Keenan, and Alan Jackson

Everyone agrees that managing change is tough, but few can agree on how to do it. Most experts are obsessed with "soft" issues, such as culture and motivation, but, say the authors, focusing on these issues alone won't bring about change. Companies also need to consider the hard factors – like the time it takes to complete a change initiative, the number of people required to execute it, and so forth.

When the authors studied change initiatives at 225 companies, they found a consistent correlation between the outcomes of change programs (success versus failure) and four hard factors, which they called DICE: project *duration,* particularly the time between project reviews; *integrity of performance,* or the capabilities of project teams; the level of *commitment* of senior executives and staff; and the additional *effort* required of employees directly affected by the change. The DICE framework is a simple formula for calculating how well a company is implementing, or will be able to implement, its change initiatives. The framework comprises a set of simple questions that help executives score their projects on each of the four factors; the lower the score, the more likely the project will succeed. Companies can use DICE assessments to force conversations about projects, to gauge whether projects are on track or in trouble, and to manage project portfolios.

The authors have used these four factors to predict the outcomes and guide the execution of more than 1,000 change management programs worldwide. Not only has the correlation held, but no other factors (or combination of factors) have predicted outcomes as successfully.

Reprint R0510G; HBR OnPoint 1916; OnPoint collection "Lead Change – Successfully, 3rd Edition" 1908

ORGANIZATION & CULTURE

120 | Master of the House: Why a Company Should Take Control of Its Building Projects

David Thurm

When you head up a big construction project for your organization, coming in on time and on budget isn't enough. If you want to avoid squandering what is probably your company's largest capital investment, it's important to create a building that reflects your company's mission and produces a truly energizing work environment, says David Thurm, CIO of the New York Times Company and head of the team responsible for designing and building the Times' new corporate headquarters in Manhattan.

The only way to get this kind of package – great design and innovative features that together further your business goals – is to take an active role. Assemble the right team, and then stay involved, asking hard questions about things that are generally taken as givens. Articulate a vision of your future work space, and drive the search for ways to realize this vision. In short, be a builder, not merely an owner.

It's easy to understand why this approach is the exception rather than the rule. To most companies, design and construction seem foreign and forbidding, rife with pitfalls. Because of the murkiness of the field and a lack of experience and confidence, most companies play a relatively minor role in their construction projects. But it's a giant mistake to be a passive consumer when it comes to one of your most important assets. At best, you'll get well-intentioned guesses by others as to what you want; at worst, you'll end up with a building that's at odds with your identity.

The author shares a series of lessons learned. Implicit in all of them: You have to push yourself as hard as you push your contractors.

Reprint R0510H

STRATEGY & COMPETITION

131 | Four Strategies for the Age of Smart Services

Glen Allmendinger and Ralph Lombreglia

Most industrial manufacturers realize that the real money isn't in products but in services. Companies such as General Electric and IBM have famously made the transition: A large proportion of their revenues and margins come from providing value-added services to customers. But other companies attempting to do the same might miss the boat.

It is not enough, the authors say, just to provide services. Businesses must now provide "smart services" – building intelligence (awareness and connectivity) into the products themselves. Citing examples such as Heidelberger Druckmaschinen's Internet-connected printing presses and Eaton Electrical's home-monitoring service, the authors demonstrate how a product that can report its status back to its maker represents an opportunity for the manufacturer to cultivate richer, longer-term relationships with customers.

Four business models will emerge in this new, networked world. If you go it alone, it may be as an *embedded innovator* – that is, your networked product sends back information that can help you optimize service delivery, eliminate waste and inefficiency, and raise service margins. Or, you may pursue a more aggressive *solutionist* business model – that is, you position your networked product as a "complete solution provider," able to deliver a broader scope of high-value services than those provided by the embedded innovator's product. In the case of a system that aggregates and processes data from multiple products in a building or home, you may be either an *aggregator* or a *synergist,* partnering with others to pursue a smart-services opportunity. An aggregator's product is the hub, collecting and processing usage information – and creating a high-value body of data. A synergist's product is the spoke, contributing valuable data or functionality.

Woe to the company that takes none of these paths; it'll soon find its former customers locked in – and happily – to other smart service providers.

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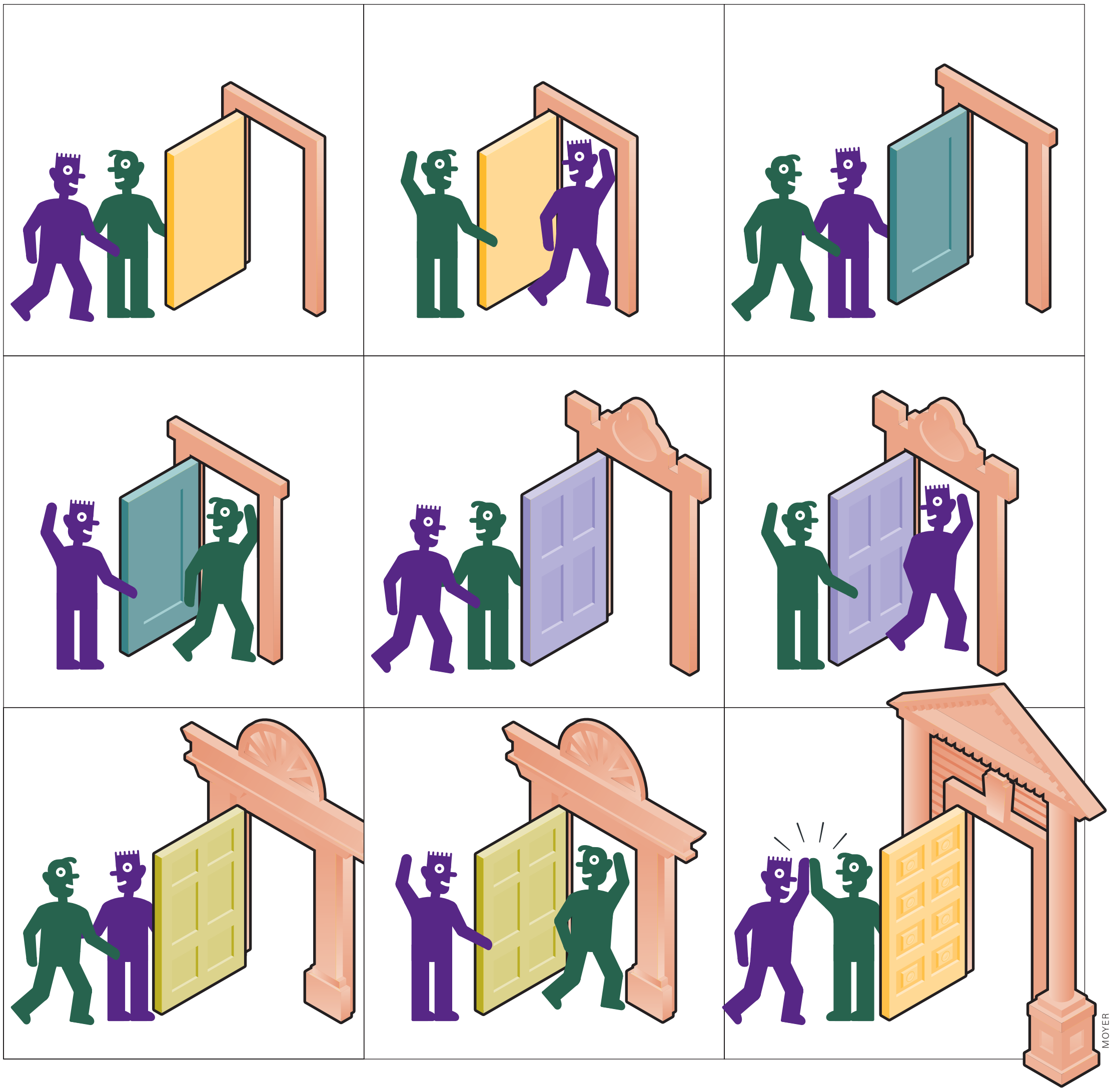
by Don Moyer



Give to Get

Most workplace violence has nothing to do with disgruntled former employees. Instead it involves cutthroat competition. Knives in the back. Dogs eating dogs.

But stepping on heads isn't the best way to get ahead. Reciprocity – both the explicit exchange of favors and less targeted displays of generosity – makes the ascent easier and more pleasant. Good turns meet with others. Favors bestow influence on the bestower. Indebted allies are often the most reliable. "To engage in this sort of arrangement with another is not to be exploited by that person," writes Robert Cialdini in *Influence: The Psychology of Persuasion*. "Quite the contrary; it is to participate fairly in the 'honored network of obligation' that has served us so well…from the dawn of humanity."

So do what you can for whom you can: superiors, employees, and peers alike. And remember, reciprocity cuts both ways. Stab someone in the back, and you'll need lots of friends to help keep an eye on yours.

Don Moyer can be reached at don@amsite.com.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