Watch What You Say...page 114 Health Care's Innovation Crisis...page 58

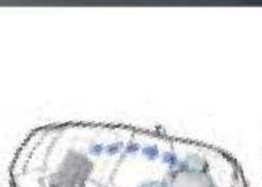
Harvard Business Review

www.hbr.org

May 2006

...page 70

OBLITERATED.



LEXUS HYBRID DRIVE
An electric motor and a gas engine work together swiftly, seamlessly.

Introducing the Lexus GS 450h. A lot can happen in 5.2 seconds.*† Like effortlessly reaching 60 miles per hour. Which is exactly how long it will take you to see Lexus Hybrid Drive as not just better for the environment, but as a whole new way to propel an automobile forward. Faster. Smoother. Silently. Working seamlessly together, an invigorating V6 gas engine and a dynamic electric motor produce 339 horsepower*—equivalent to many V8s. When you inevitably find the need to apply your brakes, the energy created is stored for future power. It's an elegant solution for the demands of the driver, as well as for the future of the world. Learn more at lexus.com/GSHybrid.

*Ratings achieved using the required premium unleaded gasoline with an octane rating of 91 or higher. †Performance figures are for comparison only, using prototype vehicles. Do not attempt.

IN THEATRES THIS MAY

As the official shipping and logistics partner for Mission Impossible III, DHL needed made sure the props, sets and hi-tech equipment were in place when the cameras it was truly an amazing performance. It's the spirit of can do and the experience of


DIRK RAVENSTEINER, ACCEPTING
IMPOSSIBLE MISSIONS DAILY.


M:i:III
IN THEATRES THIS MAY

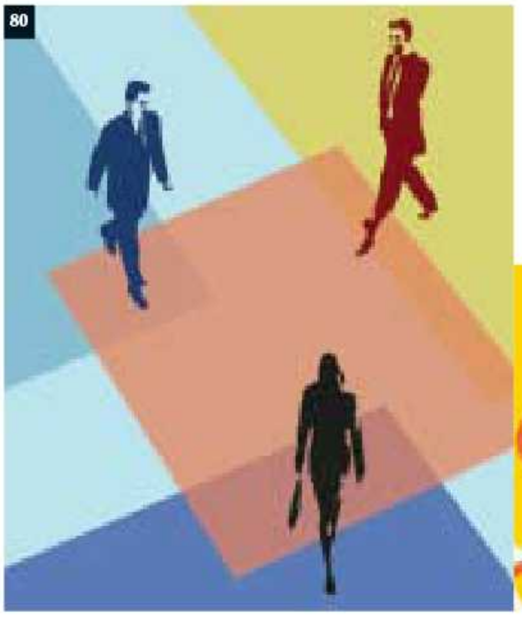

2005

HBR

FEATURES

May 2006

continued on page 10



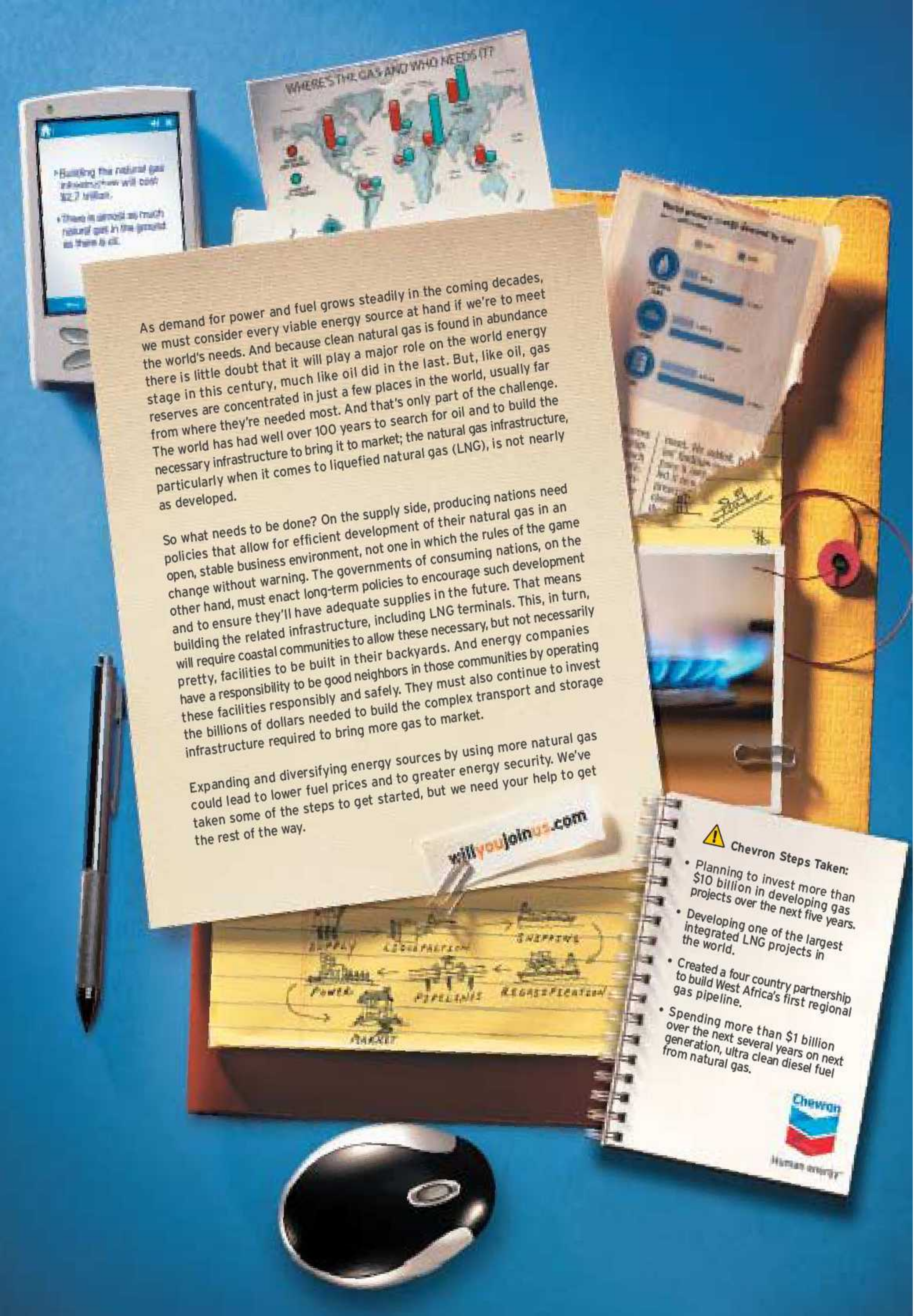
COVER ART: STEPHEN WEBSTER


Some think
breakfast.
We think
research.
Investment Banking • Private Banking • Asset Management
Copyright ©2006 CREDIT SUISSE GROUP and/or its affiliates. All rights reserved.

**Russia, Iran and Qatar have 58%
of the world's natural gas reserves.**

The U.S. has 3%.

So what does that mean for us?

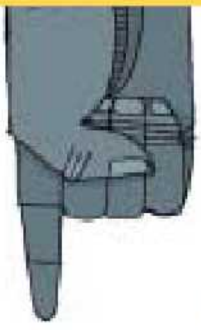


WHERE'S THE GAS AND WHO NEEDS IT?
As demand for power and fuel grows steadily in the coming decades, we must consider every viable energy source at hand if we're to meet the world's needs. And because clean natural gas is found in abundance there is little doubt that it will play a major role on the world energy stage in this century, much like oil did in the last. But, like oil, gas reserves are concentrated in just a few places in the world, usually far from where they're needed most. And that's only part of the challenge. The world has had well over 100 years to search for oil and to build the necessary infrastructure to bring it to market; the natural gas infrastructure, particularly when it comes to liquefied natural gas (LNG), is not nearly as developed.
So what needs to be done? On the supply side, producing nations need policies that allow for efficient development of their natural gas in an open, stable business environment, not one in which the rules of the game change without warning. The governments of consuming nations, on the other hand, must enact long-term policies to encourage such development and to ensure they'll have adequate supplies in the future. That means building the related infrastructure, including LNG terminals. This, in turn, will require coastal communities to allow these necessary, but not necessarily pretty, facilities to be built in their backyards. And energy companies have a responsibility to be good neighbors in those communities by operating these facilities responsibly and safely. They must also continue to invest the billions of dollars needed to build the complex transport and storage infrastructure required to bring more gas to market.
Expanding and diversifying energy sources by using more natural gas could lead to lower fuel prices and to greater energy security. We've taken some of the steps to get started, but we need your help to get the rest of the way.
willyoujoinus.com
SUPPLY
LIQUEFACTION
SHIPPING
POWER
PIPELINES
REGASIFICATION
MARKET
Chevron Steps Taken:
• Planning to invest more than $10 billion in developing gas projects over the next five years.
• Developing one of the largest integrated LNG projects in the world.
• Created a four country partnership to build West Africa's first regional gas pipeline.
• Spending more than $1 billion over the next several years on next generation, ultra clean diesel fuel from natural gas.
Chevron
Human energy

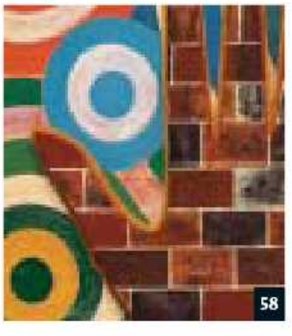
HBR

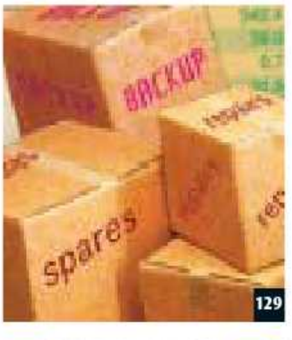
DEPARTMENTS

May 2006


20


43


58



129


141

Organizations in this issue are indexed to the first page of each article in which they are mentioned. Subsidiaries are listed under their own names.

AUTHOR AFFILIATIONS

"If anybody wants to see me, I'll be crouching behind my door, ready to pounce."

P.C. VEY

The Health of Business and the Business of Health

As of this writing, there have been 169 laboratory-confirmed human cases of H5N1 influenza – avian flu – and 91 of those people have died. It is impossible to know whether this particular strain of flu will mutate in such a way as to be easily transmissible between people and whether the virus will remain as lethal as it currently is. But if those things happen and a pandemic ensues, then, *"in the best of circumstances,"* the World Health Organization says, it would kill 2 million to 7.4 million people. In a worst-case scenario, more than 100 million would die, several times that number would become seriously ill, and several times *that* number would have their lives disrupted by the illnesses of families, neighbors, and colleagues. Demand would soar for government and civil help, including sanitation, police, public health, customs, and military services, while the supply would be curtailed by illness among government workers. Economies worldwide would suffer from the catastrophes visited upon shops, transportation services, factories, and virtually every other business. No one yet knows if H5N1 will be the instrument of that horror. Two things are certain, however: No responsible business leader should be caught unaware or unprepared if it is, and if it's not, some other pathogen will be – some kind of pandemic will visit humankind someday.

It is in the service of preparedness that we have devoted all of Forethought this month to the topic of avian flu. To plan it, we imagined a CEO asking his or her team a series of questions: "What do we need to know about this? What should we do – and not do? Are our current crisis management plans adequate? Can we take preventive measures? How do we know which risks are particularly acute for our company? How can we keep on top of the situation?" In the section, you will find a framework to help you answer our imagined CEO's questions: a preparedness checklist; tools to analyze your organization's vulnerabilities; and, equally important, guidance from Nitin Nohria and Warren Bennis about organizational and leadership issues that have not been discussed elsewhere. Senior editor Gardiner Morse put the section together in collaboration with Denise Caruso. Denise, a former technology columnist for the *New York Times,* founded the nonprofit Hybrid Vigor Institute in 2000 to help solve complex social and scientific problems, most recently those presented by global infectious disease. Her book on risk and biotechnology will be published later this year.

Health and the health care industries are clearly topics of acute importance for executives in every industry and every land. The H5N1 threat reveals how vulnerable the world, and in particular emerging economies, are to any health care crisis. Gargantuan health care costs endanger the viability of some large American corporations and are undermining Western Europe's social contract. The global pharmaceutical industry – "big pharma" – is consolidating, as research costs expand and new drug pipelines constrict. It's no wonder we've been publishing extensively in the area. Two years ago, these pages featured Michael E. Porter and Elizabeth Olmsted Teisberg's "Redefining Competition in Health Care" (June 2004). They have developed that article with much new research into an important book with the same title, just published by our colleagues at Harvard Business School Press. Steven Spear's brilliant "Fixing Health Care from the Inside, Today" (HBR September 2005) was runner-up for this year's McKinsey Award, given annually to the best article in HBR. (Pankaj Ghemawat's December article, "Regional Strategies for Global Leadership," was the winner.)

This month we publish another major article, by HBS professor Regina Herzlinger. (Her seminal July 2002 HBR article, "Let's Put Consumers in Charge of Health Care," helped to begin the movement for "consumer-driven" health care.) Her new article explores a conundrum: Why is it that innovation – in technology, in service delivery, and in business models – is so difficult to do and at the same time so obviously needed? Years of research in the health care industry have enabled Herzlinger to uncover the half-dozen forces that line up to block or encourage innovation. These forces act on every industry – but in health care they are particularly strong. Herzlinger also shows what participants in the industry – including its customers – can do to break the barriers to innovation and put the industry back on the road to health.

Thomas A. Stewart

STEPHEN SAVAGE

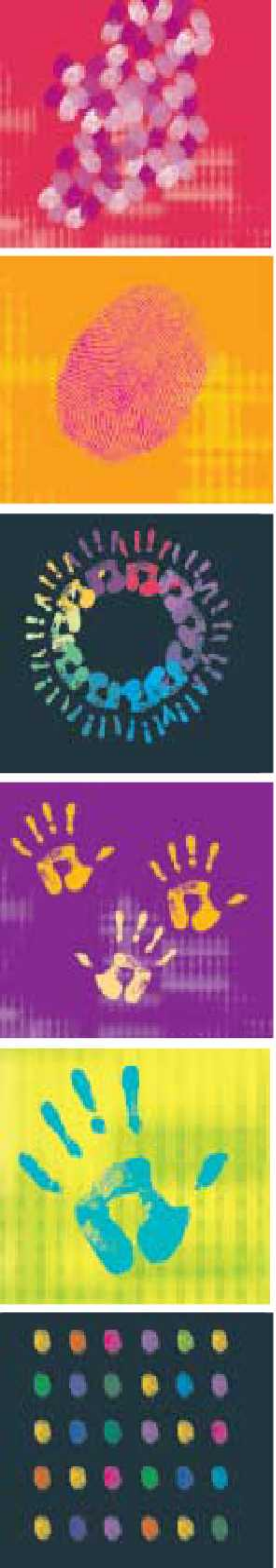
Harvard Business Review

A NOTE TO READERS
The views expressed in articles are the authors' and not necessarily those of *Harvard Business Review,* Harvard Business School, or Harvard University. Authors may have consulting or other business relationships with the companies they discuss.

SUBMISSIONS
We encourage prospective authors to follow HBR's "Guidelines for Authors" before submitting manuscripts. To obtain a copy, please go to our Web site at www.hbr.org; write to The Editor, *Harvard Business Review,* 60 Harvard Way, Boston, MA 02163; or send e-mail to hbr_editorial@hbsp.harvard.edu. Unsolicited manuscripts will be returned only if accompanied by a self-addressed stamped envelope.

EDITORIAL OFFICES
60 Harvard Way, Boston, MA 02163
617-783-7410; fax: 617-783-7493
www.harvardbusinessonline.org

VOLUME 84, NUMBER 5
MAY 2006
Printed in the U.S.A.



Harvard Business Review

PUBLISHER
Cathryn Cronin Cranston

CONSUMER MARKETING DIRECTOR
John Titus

CIRCULATION DIRECTOR
Bruce W. Rhodes

BUSINESS MANAGER
Adrienne M. Spelker

RETENTION MARKETING MANAGER
Christine Chapman

CIRCULATION FULFILLMENT MANAGER
Greg Daly

MARKETING MANAGER
Nicole Costa

WORLDWIDE ADVERTISING SALES MARKETING DIRECTOR
Marisa Maurer

MARKETING AND RESEARCH MANAGER
Jennifer B. Henkus

ADVERTISING PRODUCTION MANAGER
Catharine-Mary Donovan

MARKETING AND PROMOTIONS COORDINATOR
Jackie D'Alessio

ASSISTANT FULFILLMENT MANAGER
Danielle Weber

WORLDWIDE ADVERTISING OFFICES

New York: Maria A. Beacom, Michael J. Carroll, Denise Clouse, James H. Patten
75 Rockefeller Plaza
15th Floor
New York, NY 10019
212-872-9280
fax: 212-956-0933

Atlanta	404-256-3800
Boston	978-287-5400
Chicago	312-575-1100
Dallas	214-521-6116
Detroit	248-524-9000
Los Angeles	323-467-5906
Philadelphia	215-882-0444
San Francisco	415-986-7762
Australia	612-9252-3476
Brazil	5511-3285-2754
France	33-01-4643-0066
Hong Kong	852-237-52311
India	912-2287-5717
Latin America	562-738-4033
Mexico	5255-5081-6838
Sweden	48-8-541-318-37
United Kingdom	44-20-7833-3733

For all other inquiries, please call 212-872-9280.

For advertising contact information, please visit our Web site at www.hbradsales.com.

SUBSCRIPTION SERVICE INFORMATION

U.S. AND CANADA
800-274-3214; fax: 902-563-4807
Rates per year: U.S., $129; Canada, U.S.$139

INTERNATIONAL
44-1858-438868; fax: 44-1858-468969
Rates per year: U.S.$165; Mexico, U.S.$139

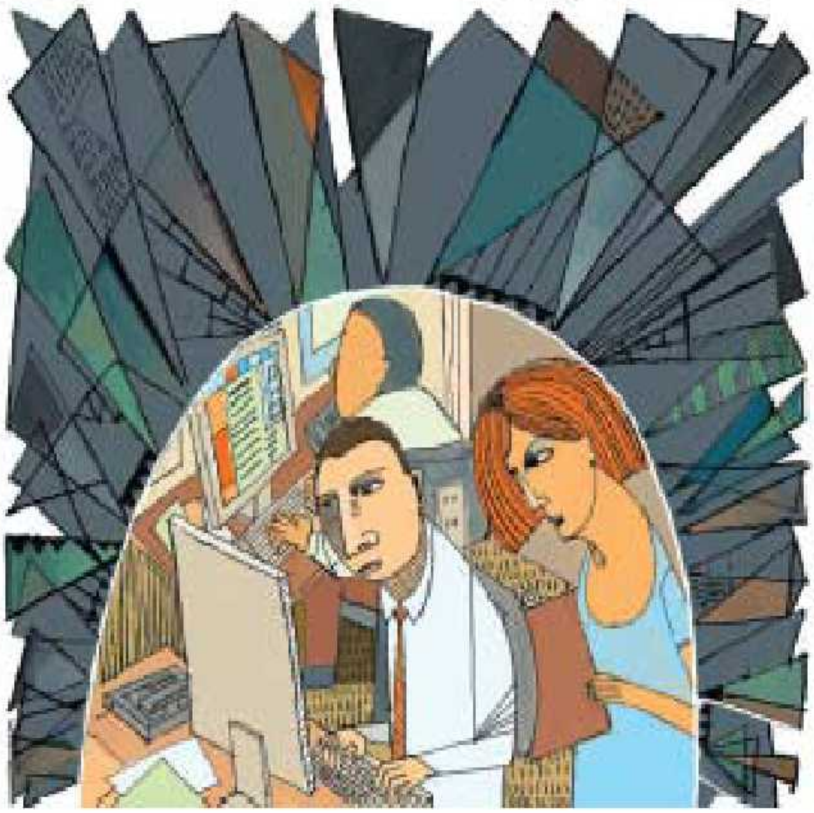
SUBSCRIBE ONLINE
www.hbr.org

forethought

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

SPECIAL REPORT

PREPARING FOR A PANDEMIC



ROBERT MECANCK

GRIST

A New Type of Threat *by* JEFFREY STAPLES

No one knows whether avian flu will evolve into a human pandemic. It could, possibly, remain largely confined to bird populations and be remembered years hence as a scare that didn't materialize. But little stands between the best- and worst-case scenarios.

So far, the H5N1 strain of avian flu has infected millions of birds, mostly in Asia, but now increasingly in Europe and Africa; it has spread, with difficulty, to fewer than 200 people – although it has killed more than half of them. And it is evolving in ways that appear to allow it to infect a greater number of species, including pigs, wild and domestic cats, and dogs. From its origin in southern China in 1997, H5N1 has spread to almost 50 countries (at the time of this writing) and is now circulating through Asia, Europe, the Middle East, and Africa. This advance, coupled with the emergence of mutations that may facilitate the infection across species, increases the risk of a global pandemic.

If the virus does mutate into a form that transmits easily from person to person – and this is the pivotal unknown –

in the best case, the World Health Organization (WHO) says, 2 million people could die. In the worst case, according to some experts' projections, up to 30% of the world's population could be stricken over the course of roughly a year, resulting in as many as 150 million deaths and perhaps more than a billion people requiring medical care. It takes little imagination to envision the impact this could have on global business as employees fall ill, supply chains fragment, and services fail.

Should a pandemic emerge, it would become the single greatest threat to business continuity and could remain so for up to 18 months. Companies need to develop rigorous contingency plans to slow the progress of a pandemic and limit its impact on employees, shareholders, partners, consumers, and communities. This will require more than simply double-checking the soundness of existing business continuity plans.

As companies start to address pandemic preparedness, they are discovering that a pandemic is fundamentally different from other, more traditional business continuity threats and is outside the scope of issues typically considered by continuity planners. Plans are usually designed to help companies respond to localized threats – like fires, bombs, riots, earthquakes, and hurricanes – that affect infrastructure. Once the event has occurred, it is over and, while the effects may linger, recovery can begin. However, a pandemic isn't an isolated incident. It is, by definition, an unfolding global event. Because of air travel, many cities around the world could be infected almost simultaneously.

Current models suggest that the next pandemic is likely to come in three waves, with each wave sweeping across the globe in a matter of weeks and lasting as long as three months. So there needs to be a shift in the nature of continuity planning, away from strategies that protect infrastructure and toward those that protect employees and their ability to conduct business during a sustained crisis.

When companies first began to wake up to the threat of avian flu, such strategies often revolved around trying to stockpile antiviral medication as a stopgap measure, with the expectation that in a pandemic a vaccine would soon become available. It is now clear that antivirals would be in short supply and that viral drug resistance would be likely to develop. What's more, an effective vaccine may not be available in appreciable quantities for many months after a pandemic is under way, and then shortages and distribution problems could limit use. Contingency planning by forward-looking companies, therefore, is becoming more coordinated, headed by pandemic or crisis teams that tap principal functions, including human resources, operations, security, legal counsel, and communications. This planning focuses on nonmedical risk-mitigation strategies to reduce infection and maintain business continuity.

In doing their planning, businesses should look to the WHO's six-phase pandemic-tracking model, which indicates the WHO's assessment of the threat. We are now at phase three and have been for more than two years. (See "Tracking a Potential Pandemic" below.)

We will probably see larger and more frequent outbreaks and rapid progress through phases four through six if the virus becomes more easily transmissible among humans. Phase three is the point at which companies should develop risk mitigation plans, testing them with tabletop scenarios and site-level drills, which need to be updated regularly. By phase four, the time for planning has passed, since any plans need to be implemented by then. By phase five, it is far too late to start planning – it is time for intensive strategy execution.

Any preparedness plan must address human factors, such as employee education, hygiene, staff movement and evacuation, sick leave policies, and absenteeism. It must also focus on operational issues – managing supply chain and distribution-

Tracking a Potential Pandemic

Interpandemic phase New virus in animals, no human cases	Low risk of human cases	1	
	Higher risk of human cases	2	
Pandemic alert New virus causes human cases	No or very limited human-to-human transmission	3	**Now at phase 3** Companies should develop risk mitigation plans.
	Evidence of increased human-to-human transmission	4	
	Evidence of significant human-to-human transmission	5	
Pandemic	Efficient and sustained human-to-human transmission	6	

Source: World Health Organization

network disruptions, for instance, and minimizing the interruption of essential services such as electricity, water, telecommunications, transportation, and security. In response to the appearance of avian flu cases in Turkey, the government actually called on law enforcement to protect some hospitals in affected areas from anxious locals who were seeking medical treatment. Such public fear is an underappreciated part of the threat, and companies should anticipate that this type of scenario may occur on a progressively larger scale in pandemic phases four, five, and six.

If the flu becomes a true pandemic, much of the impact on business will derive directly or indirectly from unprecedented absenteeism. Experts believe that infected people will be contagious for up to two days before symptoms develop, ill for five to eight days (in the absence of complications), and contagious for seven days or more after symptoms go away. During the peak periods, or waves, of a pandemic, companies could experience absentee rates between 15% and 30%, due to sickness, quarantines, travel restrictions, family care responsibilities, and fear of contagion.

It is tempting to think of pandemic planning as distinct from traditional continuity planning, a one-off exercise requiring one-of-a-kind preparation and response. But because of ever-expanding global trade and the ease and speed of international travel, an avian flu pandemic is one of an emerging class of threats – including those posed by chemical, biological, or nuclear terrorism – that could cause sustained, systemic disruption. Many businesses have yet to factor these nontraditional threats into their continuity plans. As they do, they will find that they are framing a broader, more resilient approach to risk management that can better protect employees, operations, and relationships, even in the face of traditional threats.

JEFFREY STAPLES, MD, *(jeffrey.staples@internationalsos.com) is a senior medical adviser for International SOS, a medical and security assistance company. He is based in Singapore.*

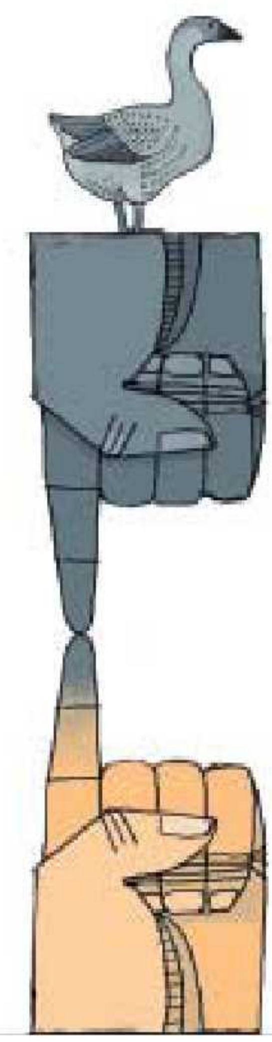
THE SCIENCE

How a Human Pandemic Could Start

by SCOTT F. DOWELL AND JOSEPH S. BRESEE

If there is anything predictable about influenza, it's that it has a propensity for change. That's why health officials are so anxiously watching the avian influenza A (H5N1) virus. The virus readily infects birds and has spread to some other species but so far has shown a limited ability to infect humans. While rare instances of H5N1 passing from person to person have been documented, there is no indication that it can do so efficiently.

That could change. At irregular intervals – three times in the past century – a new influenza subtype that is highly infectious in people has emerged. Up to 50 million people may have died as a result of the 1918–1919 influenza, and millions more died in the pandemics of 1957 and 1968, each of which resulted from virus mutations. A series of mutations or a single genetic reassortment event (a type of gene swapping among viruses) could enable H5N1 to spread efficiently among humans, triggering a pandemic.



Human illnesses caused by H5N1 follow a particularly aggressive course, often striking children and young adults. Influenza symptoms, including high fever, rapidly develop, often progressing to pneumonia. About half of the people infected with the virus during the past two years have died as a result. The mortality rate has raised widespread concern, although there is no way to know how high the rate would be if a pandemic emerged. For the pandemics mentioned earlier, the mortality rate did not exceed 2%.

Should the virus become easily transmissible between people, containing global spread is likely to be extremely difficult. Like the severe acute respiratory syndrome (SARS) virus, H5N1 may evolve into something that's easily spread through coughing, sneezing, or contact with contaminated hands. Unlike SARS, it may be very hard to control by quarantine if patients are infectious before developing symptoms. In the event of a pandemic, effective antivirals will certainly be in short supply. And because it is not possible to make a vaccine in advance (we need to have the pandemic version of the virus in hand before beginning development), it could be four to eight months after the start of a pandemic until the first vaccines are ready for distribution.

An important approach to limiting the spread of avian influenza among humans is to provide the public with the information and tools needed to keep it at bay. All things being equal, the difference between a best- and worst-case global scenario may come down to how well governments, organizations, and individuals control people's exposure. A pharmaceutical panacea is not likely to be an option.

SCOTT F. DOWELL, MD, MPH, *is a global disease detection officer and* **JOSEPH S. BRESEE, MD,** *is the head of influenza epidemiology at the Centers for Disease Control and Prevention in Atlanta.*

THE ORGANIZATION

Survival of the Adaptive *by* NITIN NOHRIA

Much of the organizational thinking about avian flu, and about crisis management in general, has focused on preparation. Many companies, for example, have created risk management teams to develop detailed contingency plans for responding to a pandemic. This is necessary but not sufficient. In the complex and uncertain environment of a sustained, evolving crisis, the most robust organizations will not be those that simply have plans in place but those that have continuous sensing and response capabilities. As Darwin noted, the most adaptive species are the fittest.

Consider the organizations described below. Which one would fare better in a sustained crisis such as a pandemic?

ORGANIZATION 1	ORGANIZATION 2
Hierarchical	Networked
Centralized leadership	Distributed leadership
Tightly coupled (greater interdependence among parts)	Loosely coupled (less interdependence)
Concentrated workforce	Dispersed workforce
Specialists	Cross-trained generalists
Policy and procedure driven	Guided by simple yet flexible rules

Organization 2 is clearly better positioned to respond to evolving, unpredictable threats. We know from complexity theory that following a few basic crisis-response principles is more effective than having a detailed a priori plan in place. In fires, for instance, it's been shown that a single rule – walk slowly toward the exit – saves more lives than complicated escape plans do.

I'm not saying that companies should not have comprehensive risk mitigation plans. They *should* be asking questions about their supply chains and internal organization like, "What's our response if one component goes down? What's our response if two components go down? Do we have redundant computer systems?" But just as important, companies need to ask, "What real-time sensing and coordinating mechanism will we use to respond to events we can never fully anticipate?"

Companies shouldn't rely solely on a specialized risk management team to see them through a sustained crisis. What if the team gets taken out? Instead, they need to develop the ability to rapidly evaluate ongoing changes in the environment and develop responses based on simple principles. This means that companies need a global network of people drawn from throughout the organization that can coordinate and adapt as events unfold, reacting immediately and appropriately to disruptions such as lapses in communication inside and outside the organization and losses of physical and human resources. (If a main office overseas suddenly drops out of a company's network, who is going to jump in?) This network needs to quickly cycle through a process of sensing threats, coordinating, responding, and then sensing again. It needs to engage in creative and collaborative yet disciplined problem solving on the fly, even as members of the crisis network move around or drop out.

This is exactly what marine expeditionary forces do, to great effect. One reason the marines are so nimble is that they practice. Companies should do likewise. A firm could establish a globally dispersed group with shifting membership that would devote, say, half a day every other month to engaging in crisis simulations. What would the group do, for instance, if 30% of the company's factory workforce in Asia dropped out? What if the United States closed its borders? How would the team respond to an "unthinkable" scenario? The goal is not to create specific rules for responding to specific threats but to practice new ways of problem solving in an unpredictable and fast-changing environment.

As for the two organizations described in the table, advantage in a crisis will go to the one that can leverage its capabilities and cooperate with other members of the community – even competitors. Companies should think about applying an open-source model to crisis response. Just as they invite partners and competitors to codevelop innovative products, they should look at whether codeveloped crisis responses would be better than proprietary ones. If they'd lose certain capabilities in a crisis and competitors would lose others, are there mutually beneficial opportunities for trade and collaboration?

Finally, many leaders think crisis management is not their job. That's why they hired risk mitigation and security experts. But creating organizations that are strong in the face of uncertainty requires a new mind-set – and that must be driven from the top down. By developing a culture and mechanisms that support superior adaptive capability, companies will inoculate themselves against a range of threats, not just pandemics. They'll become more resilient and competitive in the complex and uncertain business of business.

NITIN NOHRIA *(nnohria@hbs.edu) is the Richard P. Chapman Professor of Business Administration at Harvard Business School in Boston.*

THE LEADER

Leading for the Long Run *by* WARREN G. BENNIS

In a short-lived crisis, followers may be willing to overlook character flaws and settle for a leader who acts quickly and makes the right choices. They may tolerate a leader who acts unilaterally or doesn't communicate stirringly, as long as he seems motivated by the common good.

In a continuing crisis – a war or a pandemic – people want a great deal more. They want leaders who strive to unify their followers. They want leaders with Winston Churchill's ability to articulate the common threat and inspire people to overcome it together. During a long siege, people look to their leaders for hope. Above all, they want those leaders to be individuals who are capable of greatness and who aspire to it.

If a worst-case scenario unfolds as a result of avian flu, organizations will be stressed in ways that can't be fully anticipated. As the pressure mounts, people will scrutinize their leaders relentlessly. They will expect their leaders to make smart decisions, yes, but they will also want leaders who have the ability, as Franklin Delano Roosevelt did, to comfort and galvanize them. In operational terms, leaders will need to share power as never before. No organization can afford to be without a succession plan during a pandemic. Some organizations may want to name co-CEOs or copresidents. And every CEO will want to build a team of top-notch people to share responsibility for solving the novel, complex problems that will inevitably arise. This leadership team will be better equipped to solve problems than any individual, and it will provide the organization with bench strength in case the leader becomes ill.

Abraham Lincoln is the great American model for this collaborative approach to crisis leadership. As Doris Kearns Goodwin describes in her biography *Team of Rivals: The Political Genius of Abraham Lincoln,* Lincoln drafted a wartime brain trust of former political rivals. He knew that Edwin M. Stanton had dismissed him as a country bumpkin, but he also believed that Stanton was the secretary of war the nation needed.

Widespread avian flu would introduce a new level of uncertainty into our already unsettled lives. If the threat escalates, people may be quarantined involuntarily. Whatever their organizational affiliation, people will feel they are losing control. The situation will require tireless, persuasive, optimistic – but factual – communication on the part of leaders. The medium of communication won't matter much. In some organizations, leaders or their designees may want to start blogging regularly on flu-related matters. The tone of these communications will be critical, however. One of the insidious qualities of a health threat is that it destroys social cohesion. In the face of a deadly disease, people will become fearful of one another. Individuals who have amicably shared office space will begin recoiling every time a colleague sneezes. Genuine leaders will find the words to ameliorate those fears and enable people to remain connected and productive.

If the flu becomes a plague, employees must be assured that no organizational function is as important as their well-being. A pandemic would be an economic disaster, but it would also be an opportunity for organizations to repair the perception (often sadly true) that institutions no longer care about individual members. In the workplace, loyalty is increasingly seen as a fool's game. But in the emotionally charged atmosphere of a pandemic, business as usual won't be possible.

When I travel, I have a growing sense that people worldwide are frightened, hunkering down, worried about grotesque threats – terrorism, environmental degradation – that they can barely articulate. The threat to physical health presented by avian flu could be a chance for leaders to forge a new contract with members of their organizations, acknowledging each member as an asset and, in the process, making it so.

WARREN G. BENNIS *is the University Professor and Distinguished Professor of Business Administration at the University of Southern California's Marshall School of Business in Los Angeles. He is also the founding chairman of the school's Leadership Institute.*

COMMUNICATION

Getting Straight Talk Right *by* BARUCH FISCHHOFF

When people face risks, they want facts that can help them make better decisions, even if they're getting bad news. Confusing or irrelevant messages can make them uncertain and angry, forcing them to look elsewhere for help. During Hurricane Katrina, for example, some official communications omitted information critical to residents who needed to make choices affecting their immobile loved ones, their pets, and their property.

Risk messages backfire when their authors try to spin the truth. In emergencies, spinners might fear that accurate information will incite panic. In fact,

continued on page 28

PREPAREDNESS

Pandemic Planning Checklist for Businesses

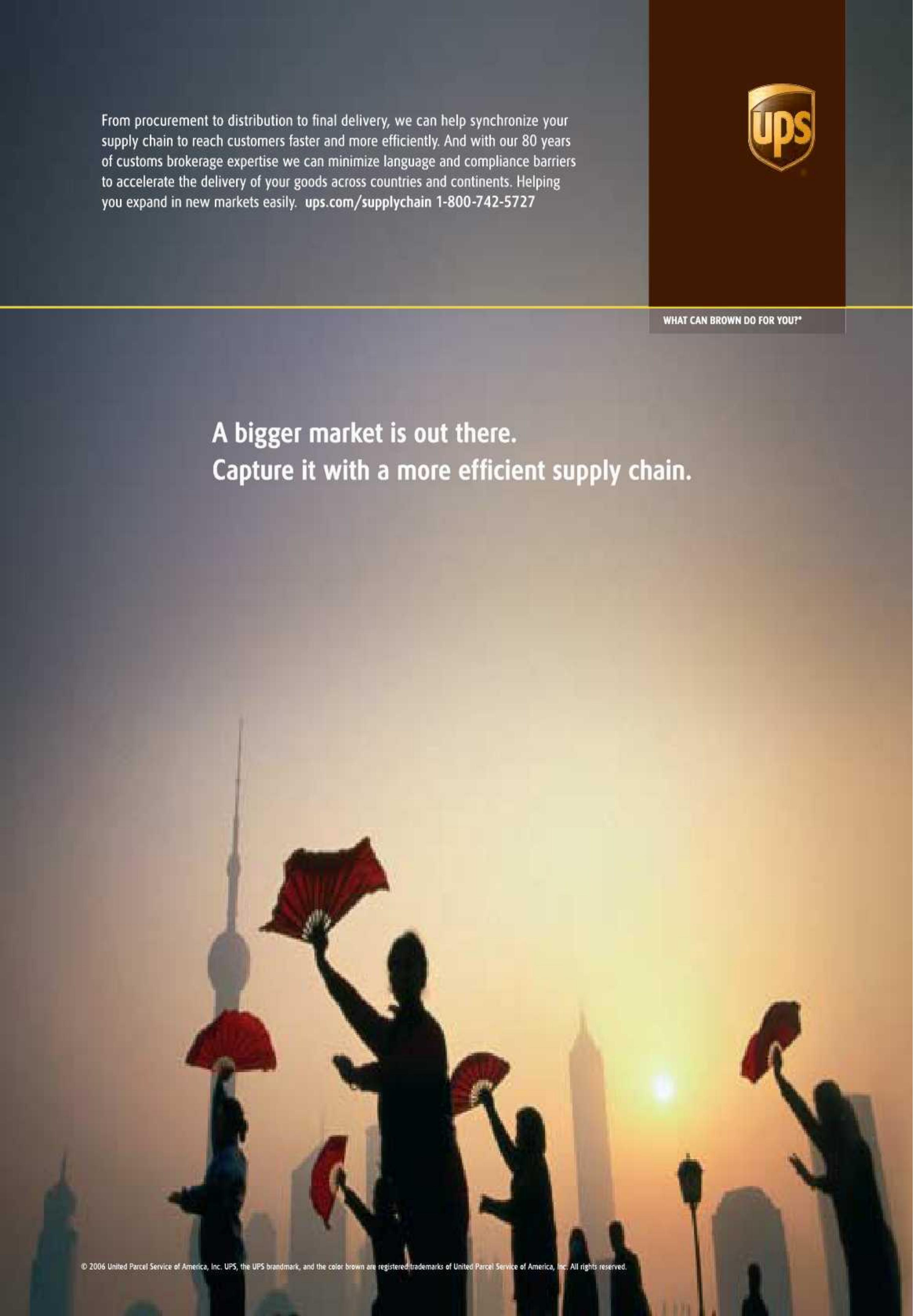
This disaster-preparedness checklist, adapted from one developed by the U.S. Department of Health and Human Services and the Centers for Disease Control and Prevention (CDC), identifies steps your company should take to prepare for a possible avian flu pandemic. Businesses will play an important role in protecting employees and limiting the virus's effects on the economy and society. Many of the suggestions below will also help in other emergency situations. (The original checklist can be found at http://pandemicflu.gov/plan/businesschecklist.html.)

PLAN FOR IMPACT ON YOUR BUSINESS	COMPLETED	IN PROGRESS	NOT STARTED
Identify a pandemic coordinator or team with defined responsibilities for preparedness and response planning.	☐	☐	☐
Identify essential employees and other critical inputs (raw materials, suppliers, subcontractors) required to maintain business operations during a pandemic.	☐	☐	☐
Train and prepare ancillary workforce (contractors, retirees).	☐	☐	☐
Plan for scenarios likely to increase or decrease demand for your products or services during a pandemic (for example, effect of restriction on mass gatherings, resulting in need for hygiene supplies).	☐	☐	☐
Gauge potential impact of a pandemic on company business financials, using scenarios that focus on various product lines and production sites.	☐	☐	☐
Gauge potential impact on business-related domestic and international travel (quarantines, border closures).	☐	☐	☐
Find up-to-date, reliable pandemic information from public health, emergency management, and other sources; create open lines of communication.	☐	☐	☐
Establish an emergency communications plan, and revise periodically. Include key contacts (with backups), a chain of communications (including suppliers and customers), and processes for tracking and conveying business and employee status.	☐	☐	☐
Implement a drill to test your plan, and revise periodically.	☐	☐	☐

PLAN FOR IMPACT ON EMPLOYEES AND CUSTOMERS	COMPLETED	IN PROGRESS	NOT STARTED
Allow for employee absences during a pandemic due to factors such as personal illness, family member illness, quarantines, school or business closures, and public transportation closures.	☐	☐	☐
Implement guidelines to modify the frequency and type of face-to-face contact (handshaking, seating in meetings, office layout, shared workstations) among employees and between employees and customers.	☐	☐	☐
Encourage and track annual influenza vaccination for employees.	☐	☐	☐
Evaluate what employee access to health care services would be during a pandemic, and improve services as needed.	☐	☐	☐
Evaluate what employee access to mental health and social services would be during a pandemic, and improve services as needed.	☐	☐	☐
Identify employees and key customers with special needs, and incorporate those requirements into your plan.	☐	☐	☐

continued on page 26

ESTABLISH POLICIES TO BE IMPLEMENTED DURING A PANDEMIC	COMPLETED	IN PROGRESS	NOT STARTED
Establish liberal, nonpunitive policies for employee compensation and sick-leave absences unique to a pandemic, stipulating when people are no longer considered infectious and can return to work.	☐	☐	☐
Establish policies for flexible work site and work hours.	☐	☐	☐
Establish policies for preventing influenza spread at the work site (promoting coughing/sneezing etiquette, for instance).	☐	☐	☐
Establish policies for employees who have been exposed to pandemic influenza, are suspected to be ill, or become ill at the work site (infection control response, immediate mandatory sick leave).	☐	☐	☐
Establish policies for restricting travel to affected geographic areas (both domestic and international), for evacuating employees working in or near affected areas, and for providing guidelines for employees returning from affected areas.	☐	☐	☐
Establish authorities, triggers, and procedures for activating and terminating the company's response plan, altering business operations, and transferring business knowledge to key employees.	☐	☐	☐
ALLOCATE RESOURCES TO PROTECT EMPLOYEES AND CUSTOMERS DURING A PANDEMIC			
Provide sufficient and accessible infection control supplies (hand-hygiene products, tissues, receptacles for tissue disposal) in all business locations.	☐	☐	☐
Enhance communications and information technology infrastructures as needed to support employee telecommuting and remote customer access.	☐	☐	☐
Ensure availability of medical consultation in an emergency.	☐	☐	☐
COMMUNICATE WITH AND EDUCATE EMPLOYEES			
Develop programs and disseminate materials covering pandemic fundamentals (symptoms of influenza, modes of transmission) as well as protection and response strategies (hand hygiene, coughing/sneezing etiquette, contingency plans).	☐	☐	☐
Anticipate employee anxiety, rumors, and misinformation, and plan communications accordingly.	☐	☐	☐
Ensure that communications are culturally and linguistically appropriate.	☐	☐	☐
Disseminate information to employees about your preparedness and response plan.	☐	☐	☐
Provide information about at-home care for employees and family members who are ill.	☐	☐	☐
Develop platforms (hotlines, dedicated Web sites) for communicating pandemic status and company actions to employees, vendors, suppliers, and customers inside and outside the work site in a consistent and timely way; eliminate redundancies in the emergency contact system.	☐	☐	☐
Identify community sources for timely and accurate pandemic information (domestic and international) and resources for obtaining countermeasures (vaccines, antivirals).	☐	☐	☐
HELP YOUR COMMUNITY			
Share your pandemic plans with health insurers and major health care providers; understand their capabilities and plans.	☐	☐	☐
Share your plans with public health agencies and emergency responders; understand their capabilities and participate in their planning.	☐	☐	☐
Communicate with public health agencies and emergency responders about the assets or services your business could contribute to the community.	☐	☐	☐
Share best practices with chambers of commerce, associations, and other businesses to improve community response efforts.	☐	☐	☐


From procurement to distribution to final delivery, we can help synchronize your supply chain to reach customers faster and more efficiently. And with our 80 years of customs brokerage expertise we can minimize language and compliance barriers to accelerate the delivery of your goods across countries and continents. Helping you expand in new markets easily. ups.com/supplychain 1-800-742-5727
ups
WHAT CAN BROWN DO FOR YOU?®
A bigger market is out there.
Capture it with a more efficient supply chain.
© 2006 United Parcel Service of America, Inc. UPS, the UPS brandmark, and the color brown are registered trademarks of United Parcel Service of America, Inc. All rights reserved.

research shows that, in crises, ordinary citizens typically respond responsibly, even bravely. The better the information they have, the more effective their actions will be.

Managers who ignore the need for frank, focused risk communications can endanger the people they're responsible for, undermine their own credibility, and force stakeholders – employees, customers, suppliers, and investors – to look for other sources of information. Fortunately, it's not difficult to get risk communications right. Doing so requires answering three questions.

What information do people expect from you? Obviously, employees will want to know about corporate policies regarding health insurance, telecommuting, absenteeism, and hygiene practices (hand washing, use of masks, use of gloves, and so on). Suppliers and customers will want to know whether and how the company will stay open for business. Neighbors and investors will have their own questions. But rather than assume that you know what information your stakeholders need, consult directly with them. This will reduce a common threat to effective communication: misunderstanding others' fundamental concerns.

What does your audience currently believe? It's unproductive to give people information that doesn't make sense to them in terms of their existing beliefs. For example, people know that washing their hands reduces infection risk but perhaps don't know that their usual methods miss their thumbs and fingertips. Similarly, people may appreciate the risk of an individual handshake without understanding how the risk multiplies the more hands they shake. Misconceptions about risk are often easily corrected – but you have to identify them first.

Do you have the resources needed to communicate your message? Effective communication requires several capabilities. Fortunately, many organizations already have employees with the necessary skills: people who can learn the essential facts about the risks; people who can communicate with employees, customers, and others, learning about their beliefs and concerns; people who can create solid communications and, critically, test them to make sure they are understood as intended; and people who can disseminate messages once they're ready.

Management's job is to coordinate this team, ensuring that its members play their assigned roles – and just those roles. Psychologists should not opine on medical facts; disease experts should not push their pet theories of risk behavior; and public relations experts should not put a happy face on things unless the facts warrant it. Effective communication calls for management more than charisma. Managers who follow this disciplined approach can make their firm an authoritative source of trusted information.

BARUCH FISCHHOFF *(baruch@cmu.edu) is the Howard Heinz University Professor of Social and Decision Sciences at Carnegie Mellon University in Pittsburgh and a member of the Institute of Medicine.*

MODELING

Visualizing Your Vulnerabilities

by BARUCH FISCHHOFF

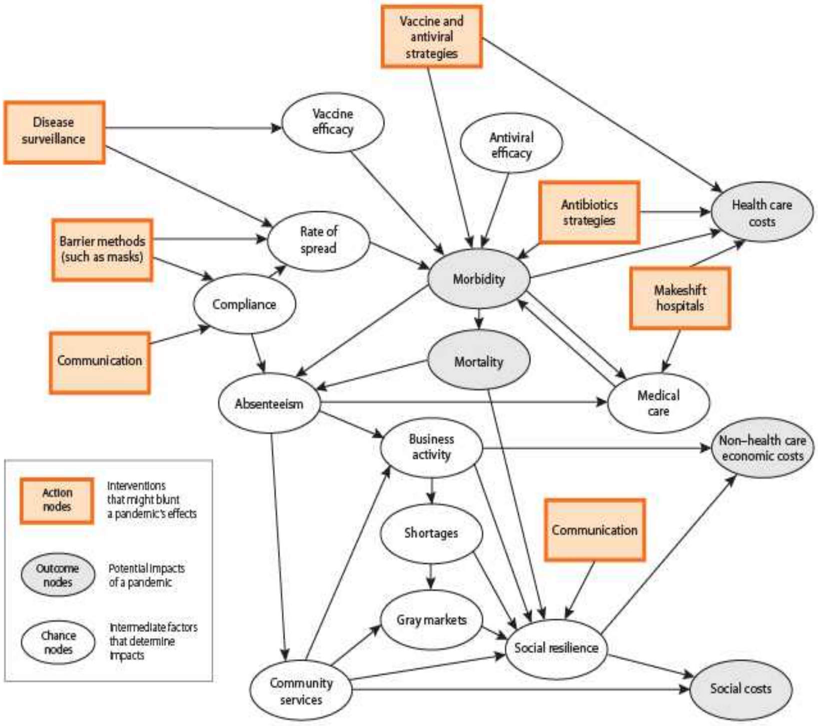
Valuable as it is as an assessment tool, the preparedness checklist compiled by the Centers for Disease Control and Prevention (CDC) says little about how to approach the problems it frames. How should managers "gauge potential impact on business-related domestic and international travel," "plan for scenarios likely to increase or decrease demand for [their] products or services," or "evaluate what employee access to health care services would be"? (See "Pandemic Planning Checklist for Businesses" in this section.)

In my work as a decision researcher and risk communication consultant, I've found that complex problems such as these, based on uncertain assumptions, are best explored through formal visualization. One way to do this is to draw what are called influence diagrams. A standard tool in decision analysis, influence diagrams challenge you to think clearly about what you know and don't know. They require you to map explicitly the relationships among the factors shaping a vital event – like absenteeism during a pandemic. And they translate knowledge into a form that can be shared, pooled, and evaluated. I have used this approach with teams working on topics as diverse as hazardous chemicals, space exploration, electricity deregulation, anthrax vaccination, and climate change. Typically, the exercise reveals vague assumptions, incomplete analyses, or missing information – and thus creates opportunities for better problem solving.

The model presented on page 30 is intentionally simplistic, with a sampling of the factors relevant to businesses planning for a pandemic. It's meant as an orienting map, which firms can adapt to address their special concerns and circumstances. It shows, in gray ovals (outcome nodes), potential impacts of a pandemic, such as *morbidity* (incidence of disease), *mortality,* and *health care costs.* It shows, in white ovals (chance nodes), factors determining those impacts, such as the *rate of spread, medical care,* and the extent of *absenteeism.* And it shows, in orange rectangles (action nodes), interventions that might blunt a pandemic's effects, such as *antibiotics strategies* (to reduce flu complications), *makeshift hospitals* (to distribute health care locally), and *barrier methods,* like masks and hand washing (to prevent disease spread while maintaining social interaction).

Managers can use this diagram as a starting point for elaborating the factors that concern them. For example, they can specify what *business activity* means for their firm, then analyze how a pandemic would threaten it and what the consequences of success or failure in responding would be. Those threats include *absenteeism* and loss of *community services* (such as utilities, sanitation, and transportation). The major consequences for society if business fails to manage these threats are *shortages, non–health care economic costs* (such as lost production and productivity), and reduced *social resilience.*

Seeing the big picture allows a reality check on contingency plans. Items that



Making an Influence Diagram

Influence diagrams like this highly simplified one are commonly used in decision analyses to visualize the relationships among factors that shape outcomes in specific events and to expose poor or missing information. This model, which my colleague Wändi Bruine de Bruin helped create, shows some of the factors that would interact to affect illness, absenteeism, and social resilience in a pandemic. Companies can design their own influence diagrams to explore factors that are specifically relevant to their businesses. For a step-by-step description of how to create an influence diagram, consult *Risk Communication: A Mental Models Approach,* by M. Granger Morgan, Baruch Fischhoff, Ann Bostrom, and Cynthia J. Atman (Cambridge University Press, 2001).

look straightforward on a checklist might prove to have unexpected inputs or require decisions based on information that's currently inadequate. For example, where the CDC checklist calls on companies to "evaluate what employee access to health care services would be," an influence diagram could reveal the threats posed by disruptions of public transportation (one *community service*), inadequate staffing – or nonexistence – of local *makeshift hospitals,* or employees' lack of confidence in the *barrier methods* that could allow people to safely use health services (reducing their *compliance*). By identifying these items before a pandemic occurs, a firm will increase its chances of limiting their impact, through its own actions or ones it presses government to adopt.

Creating a model is not magic. It takes, primarily, a commitment to confronting and thinking clearly about the issues relating a risk (avian flu) to a set of outcomes (*morbidity, health care costs,* and so on). Much of the utility of modeling is extracted from the process itself – putting a team of managers into a room for a day to haggle over the issues. Better to identify now what you don't know than to wait to find out.

BARUCH FISCHHOFF *(baruch@cmu.edu) is the Howard Heinz University Professor of Social and Decision Sciences at Carnegie Mellon University in Pittsburgh and a member of the Institute of Medicine.*

AVIAN FLU RESOURCES

The best one-stop resource for managers is Flu Wiki (http://fluwikie.com), a collaborative flu encyclopedia and portal that presents an array of official and unofficial information. Because wikis allow users to edit and add information, the contents of Flu Wiki are continually updated and corrected. (Note the spelling of "fluwikie" in the URL. Alternative spellings will take you to commercial or other sites that we don't recommend.)

Preparedness and response. On Flu Wiki's home page, click on "Influenza Plans and Surveillance – National and International," and then "International Bodies," and you'll call up the Web sites of global organizations, including the World Health Organization (www.who.org), and a country-by-country list of public health bodies, news reports, and publications with planning and response information. The "WHO Pandemic Preparedness" page, also found under "International Bodies," is a particularly robust resource. The Centers for Disease Control and Prevention link (on the "Influenza News Sites and Resources" page) delivers you to the CDC's avian flu page; if you go from there to the CDC's home page, www.cdc.gov, you can reach the "Business Gateway to CDC Resources," which includes planning tools for businesses. (See "Pandemic Planning Checklist for Businesses" in this section.)

Also on Flu Wiki, under "Pandemic Preparedness," you'll find several workplace continuity plans, such as the government of New Zealand's well-regarded "Business Continuity Planning Guide." (For more on New Zealand's approach, see "What to Expect from Government" in this section.)

News and other resources. Flu Wiki directs readers to news reports, basic scientific information, and commentary on flu-related legal, ethical, economic, and political issues. The site also hosts discussion forums, RSS feeds, blogs, and multimedia presentations.

POLICY

What to Expect from Government

by LARRY BRILLIANT

When government officials respond to a public health disaster, they're in a position to either save lives or wreak havoc in ways that no one else can. Working in disease control for the past 30 years, I've found that the difference between successful and bungled responses often depends on government competence in three key areas: providing early disease detection, rapidly responding with sufficient vaccines and treatments, and supplying credible information about symptoms and how to prevent transmission.

Currently, only governments have the power to ensure that cases of infectious disease are reported promptly and accurately, that policies are in place to make vaccines available, and that good public health practices are widely known and followed. When and after an epidemic strikes, it takes power and authority to help a population return quickly to some semblance of normality.

Contrast Hong Kong's quick killing of more than 1 million chickens in 1997 with China's failure to find and report cases of severe acute respiratory syndrome (SARS) in 2003. Hong Kong's fast reflexes preempted a dangerous epidemic; China's slow response to SARS spread and prolonged the deadly disease. Contrast, as well, Pakistan's monthly polio vaccination rounds, which virtually eliminated the disease there, with the Nigerian state of Kano's 13-month vaccine ban, which caused a polio outbreak within the country's borders that spread as far as Mecca and Indonesia.

During the World Health Organization's successful smallpox eradication campaign that I worked on in the 1970s, leaders and laggards alike were found in national, state, and district governments. In India, state governments ultimately wiped out smallpox in part by using their health, police, and fire departments to stop trains and buses from transporting disease carriers and by closing down hospitals that were disease transmitters. But lackadaisical officials in some districts complicated the effort by failing to contain endemic disease spreaders, creating a checkerboard of infected regions within the country. This example points up the importance of coordinated government responses at all levels.

So what should we expect from public officials in the event of a pandemic? The government of New Zealand outlined its own job description regarding health emergencies. The summary is a good template for all governments to follow:

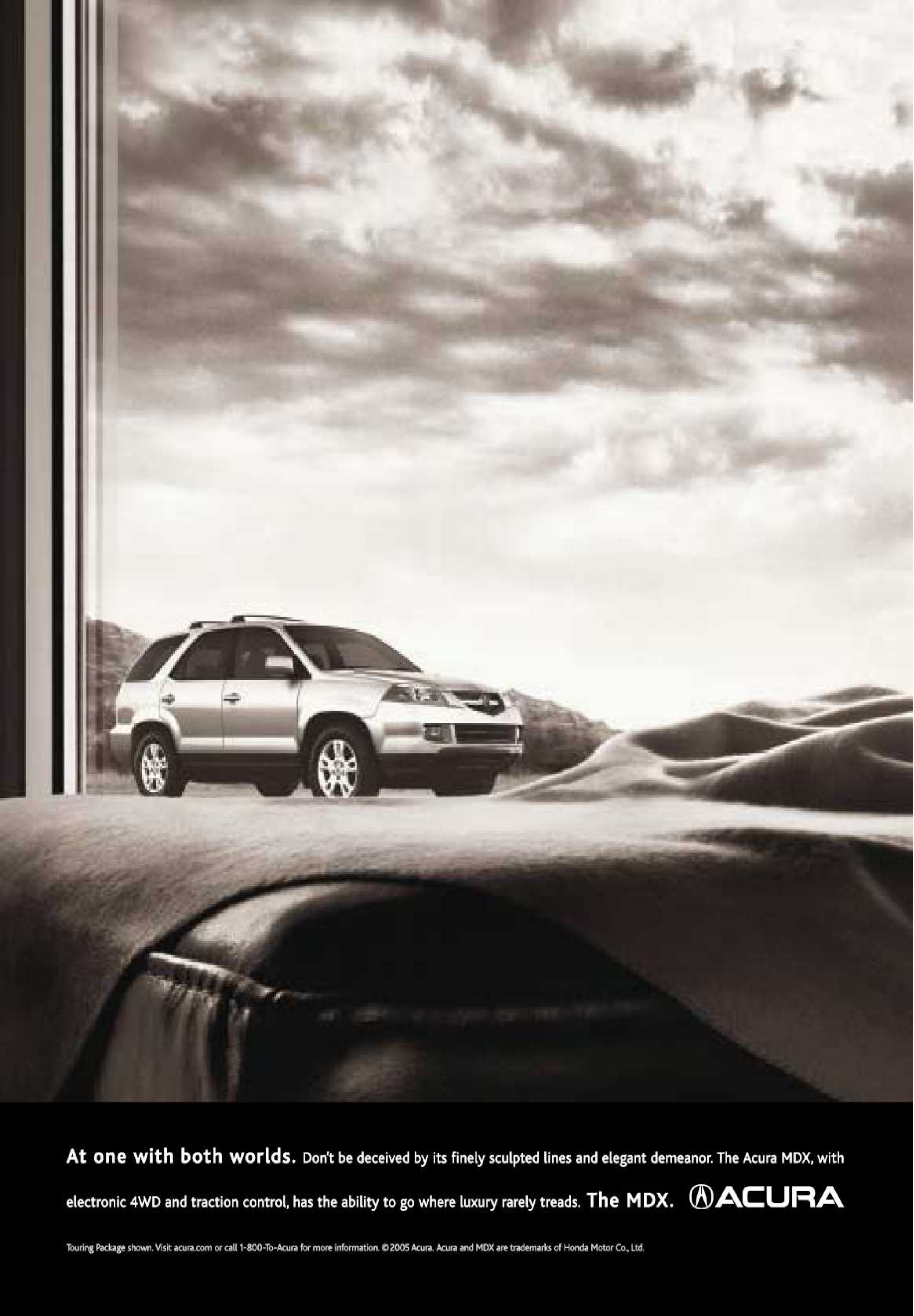
1. Create a preparedness plan.
2. Work to keep the disease out of the country.
3. Stamp it out if it gets into the country.
4. Manage national response during the acute phase.
5. Help the country recover from it.

If government does its job, businesses can develop and implement their own preparedness plans more effectively. For example, managers must rely on government at all levels, from local to federal, to tell them how borders will be protected from incoming infected people or animals – and, just as important, under what circumstances suppliers and business-critical personnel will be allowed to cross those borders.

Government officials also should set standards for personal hygiene, created and vetted by experts in the areas of infectious disease and risk, that managers can distribute. They should disseminate reliable information about the availability, benefits, and risks of various treatments. Governments should help develop assessment tools that managers can use to determine when essential workers who have been exposed may safely reenter the workforce. Finally, they must help businesses bounce back once a pandemic has subsided by reestablishing essential services and using the various means at their command, including tax credits and loans, to stimulate economic recovery and growth.

Executives who live in democracies, especially those who control large multinationals, have not only the political influence but also the responsibility to make government officials do the job they were hired to do and, along with the rest of the electorate, to throw them out if they fail.

LARRY BRILLIANT, MD, MPH, *(larrybrilliant@gmail.com) is the founder and former chairman of the global health project group Seva Foundation, based in Berkeley, California. He has worked for the World Health Organization's smallpox, polio, and blindness programs and is the executive director of Google.org, the philanthropic arm of Google.*


At one with both worlds. Don't be deceived by its finely sculpted lines and elegant demeanor. The Acura MDX, with electronic 4WD and traction control, has the ability to go where luxury rarely treads. The MDX.
ACURA
Touring Package shown. Visit acura.com or call 1-800-To-Acura for more information. © 2005 Acura. Acura and MDX are trademarks of Honda Motor Co., Ltd.

THE LAW

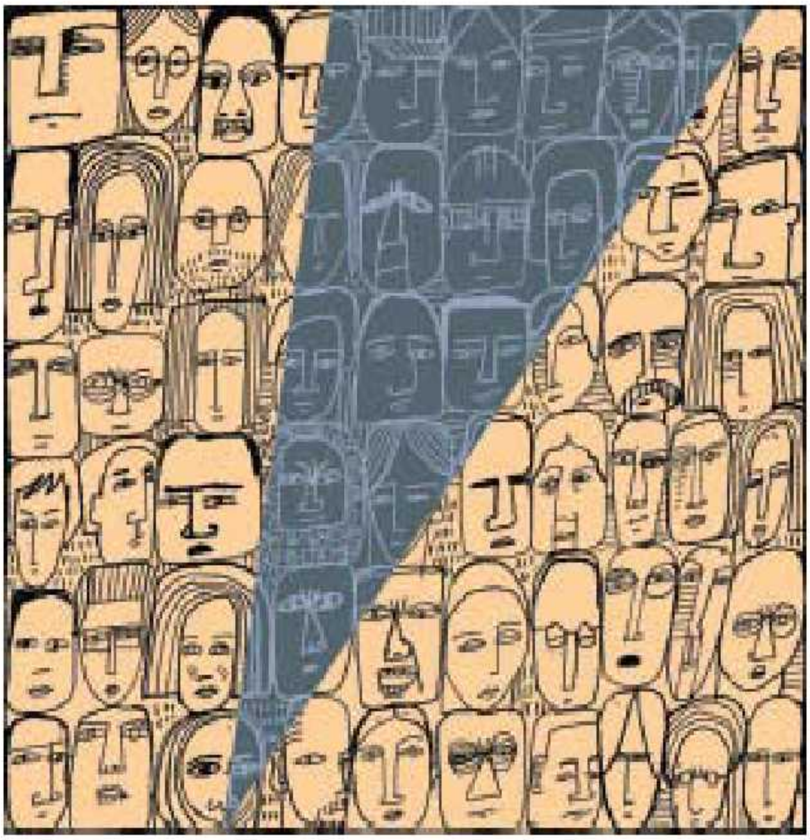
Limiting Exposure – of the Legal Kind

by PETER SUSSER

If an avian flu pandemic strikes, businesses with inadequate communicable-illness policies and response plans could face a laundry list of HR-related legal concerns. Most developed countries have laws designed to protect employees from physical harm at work. In the United States, employees are protected under the Occupational Safety and Health Act, so if an employee becomes infected at work, the employer may face penalties. Meanwhile, labor unions have petitioned the government to issue an emergency workplace standard dealing with pandemic influenza. This call for action, along with the potential for various types of lawsuits (workers' compensation, invasion of privacy, discrimination, unfair labor practice, negligence), underscores the need for health communication, hygiene, privacy, and leave policies that specifically relate to infectious diseases. The value of such legal preparedness, of course, is relevant to any life-threatening infectious disease, not just avian flu.

Education and communication. Companies need to educate employees, in advance, about modes of transmission and symptoms and tell people to inform management if they have been exposed to the virus. Although disability discrimination laws protect employees with covered health conditions, limitations can generally be imposed if there's a direct threat to the health or safety of others. The manager can judge, ideally with input from a consulting physician, whether the employee should come to work. By the same token, policies need to be explicit about when employees with transmissible conditions will be allowed back. By discouraging potentially infected employees from coming to the office and ensuring that those who are infected stay away, companies protect staff from harm and protect themselves from certain types of legal liability. In either case, it is important to document the relevant communications.

Hygiene. Companies also need to be able to show that they have given employees accurate information about ways to prevent the spread of infection – and that they have provided people with the means to act on that information. For example, public health guidelines are specific about the importance of hand washing and how to do it effectively. Be sure to provide disinfectant soaps, and step up disinfectant cleaning of hot spots such as doorknobs, light switches, and elevator buttons. Consider stocking up on disinfectant wipes, disposable gloves, and masks (which could later become hard to obtain), and plan staffing, shift work, and even physical layout changes to minimize contact among employees. All of these measures will help protect workers from infection and help protect you from liability. (Some states, for example, allow additional awards – beyond normal workers' compensation awards – when injury results from an employer's "willful" or "intentional" act, which might include failure to provide appropriate protections.)



Privacy. In discussions with employees, managers must be mindful of privacy restrictions related to personal health information. Employers should understand what information an employee might be obligated to disclose – likely, anything that could interfere with his or her ability to perform the job's essential functions or that could increase the risk to coworkers or third parties through workplace contact. Failure to understand such boundaries could expose the company to privacy invasion or discrimination claims. Fortunately, even rigorous privacy rules allow employers to disclose employees' protected health information to authorities for public health purposes.

Leave. Companies should analyze, in advance, their legal obligations to provide employees with leave in the event of sickness or disability. U.S. laws are articulated in the Family and Medical Leave Act, the Americans with Disabilities Act, and state workers' compensation laws, for example, as well as in individual businesses' contract and policy language. Companies should also consider under what circumstances they would want to extend or expand benefits and protections, and they should evaluate their level of income protection for employees on

VISA COMMERCIAL SOLUTIONS. When it comes to cash flow, timing is everything. Visa gives you business payment tools to pay or get paid almost any way you want, for just about anything you want. So time is always on your side. Learn more at visa.com/commercial, or contact your commercial banker. Your business is your life. Life takes Visa.

leave, perhaps adjusting benefits plans for employees who exceed their sick-day allotment. One important goal is to have policies that encourage exposed or ill employees to remain at home rather than come to work and expose coworkers – and the company – to potential harm.

PETER SUSSER *(psusser@littler.com) is a partner in the employment and labor law firm Littler Mendelson. He is based in Washington, DC.*

TEST CASE

A Preview of Disruption

by **SHERRY COOPER**

If an avian flu pandemic strikes, it will have hugely disruptive effects on global society and the economy. I can say this because I have lived through a mini–test case of such an event: the 2003 outbreak of severe acute respiratory syndrome, or SARS, in Toronto.

During its four-month run in Toronto, ending in June, SARS killed fewer than 50 people. Even China and Hong Kong, the two places that were hardest hit by the virus, suffered "only" 648 deaths in total. Compared with the 1918–1919 influenza pandemic, which killed as many as 50 million people, SARS was quite moderate – but it sure didn't seem that way in the first half of 2003.

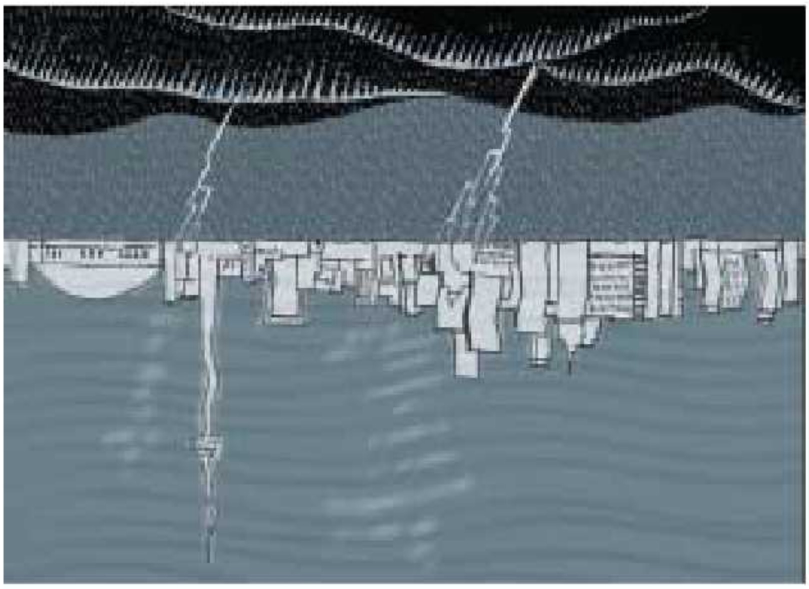
On April 23, the World Health Organization sent out a warning against all unnecessary travel to Toronto, Beijing, and China's Shanxi province. Travel to and from Toronto plummeted overnight. At least four major Toronto conventions were canceled, leaving hoteliers holding the bag for more than 50,000 room nights. Overall, SARS cost the city's hotel industry more than Can$125 million; more generally, the tourism industry in the province of Ontario lost more than Can$2 billion in income and jobs.

Toronto's city life, too, was transformed by the SARS outbreak. More than 15,000 people were quarantined in their homes for ten days. Many businesses, our bank included, designated some essential employees to telecommute in the event that even a single person at the office became exposed to the virus. Mass transit was deserted. Visits to museums, the zoo, theaters, and restaurants declined sharply. In suburban Markham, all 1,700 students and staff in a high school were quarantined after one student picked up the disease from a parent who was a health care worker.

By far, the part of Toronto most severely compromised by SARS was its health care system. Because the first reported SARS patient in the area presented no history of contact with pneumonia (his mother, just back from Hong Kong, had died from undiagnosed pneumonia the week before), hospitals did not recognize right away that this was SARS. Thus, they placed infected individuals in double rooms, exposing other patients, their families, care providers, and other frontline workers to the virus. By the end of the epidemic, nearly half of the reported cases were among the health care workers; three of them died. Even though all hospital procedures were reengineered within 72 hours once it became clear we were dealing with SARS, surveillance and infection control were still inadequate.

Beyond shortcomings in treating SARS itself, the burden on the health care system caused delays in testing for and treating other illnesses. Patients had to postpone or skip essential treatments such as chemotherapy and radiation. Family doctors and specialists were overwhelmed. I visited a physician who had a sign on his door telling patients to go to the nearest emergency room if they had a dry cough or fever. To avoid risk of infection, many people refused dental work, and many dentists refused patients.

Although the impact of SARS on Canadian GDP is difficult to tease out from other factors, the Bank of Canada has estimated that the disease cut second-quarter GDP by 0.6%. Moderate as this estimate sounds, the effect in Toronto was significantly more dramatic, as Toronto represents about 15% to 20% of Canada's economic activity. The negative economic and social effects of SARS in Hong Kong were even more severe, as it suffered seven times as many cases and fatalities as all of Canada did. During the peak of the outbreak, in the United States – where there were no deaths from SARS – transpacific travel fell 40% below the previous year's level.



It's clear from Toronto's experience with SARS that we cannot afford to wait and see what happens before we prepare for the next pandemic. Because of the nature of the virus and the effective responses of global health officials, SARS was short-lived. We will not be nearly so lucky should the avian influenza become a human pandemic.

SHERRY COOPER *(sherry.cooper@bmonb.com) is the executive vice president of the BMO Financial Group and the chief economist for BMO Nesbitt Burns. She is based in Toronto.*

Conversation

WILLIAM MACGOWAN ON CONTINUITY AND COMMUNICATION

Staying Connected

As a provider of IT infrastructure for some of the world's largest corporations, Sun Microsystems is a critical enabler of other businesses' pandemic plans. William MacGowan, Sun's senior vice president of human resources, spoke with contributing editor Denise Caruso about how his cross-functional planning team is building a continuity plan to keep the global workforce at Sun healthy so that its customers can prepare, too.

What has been Sun's greatest challenge in developing a continuity plan for a pandemic?

We have weathered a lot of continuity crises–we had 350 employees in the towers on September 11, we had customers in Hurricane Katrina–but those were isolated crises that had global effects. With flu, the problem itself is global, which creates a unique set of concerns. Linking these new global issues with our current continuity plan presents a very different challenge.

What is the company's advantage?

We're lucky that half of our 38,000 employees already work remotely through our internal iWork@Sun program. This has obvious benefits for keeping workers from infecting one another if a pandemic does hit. What we've built is a sophisticated telecommuting system that gives them full, secure access to their desktops whether they're at home, at the office, or traveling.

We've also begun presenting the iWork strategy to our customers as part of their continuity plans, starting with more than 80 of our insurance customers. Keeping our customers up and running is good for them and for us, and it contributes to global business continuity as well.

How is Sun being innovative in the way it is educating its employees about the threat?

We already have an entire internal organization that's dedicated to online education and training, and we're using it to develop programs that will improve our response to a pandemic. One challenge has been figuring out how to make the information available in a variety of languages for our employees in other countries.

We'll also use our intranet radio station, WSUN, to inform employees. Radio has several benefits–for instance, as long as you can get to a phone, we can do a show with you as a guest. You don't need to be sitting at a computer.

This could be very useful for getting experts' advice out to our employees in an emergency. For example, if we saw signs that the World Health Organization was about to move the flu to the next level on its pandemic alert chart, we could have a flu expert call in and broadcast the information to employees within a day. We could also let employees e-mail or phone in questions to the expert; that would personalize the contact.

Employees tell us all the time what a difference it makes when the company's leaders talk to them–they feel they know and trust these guys. In a time of turbulence, you can imagine how important this kind of trust becomes.

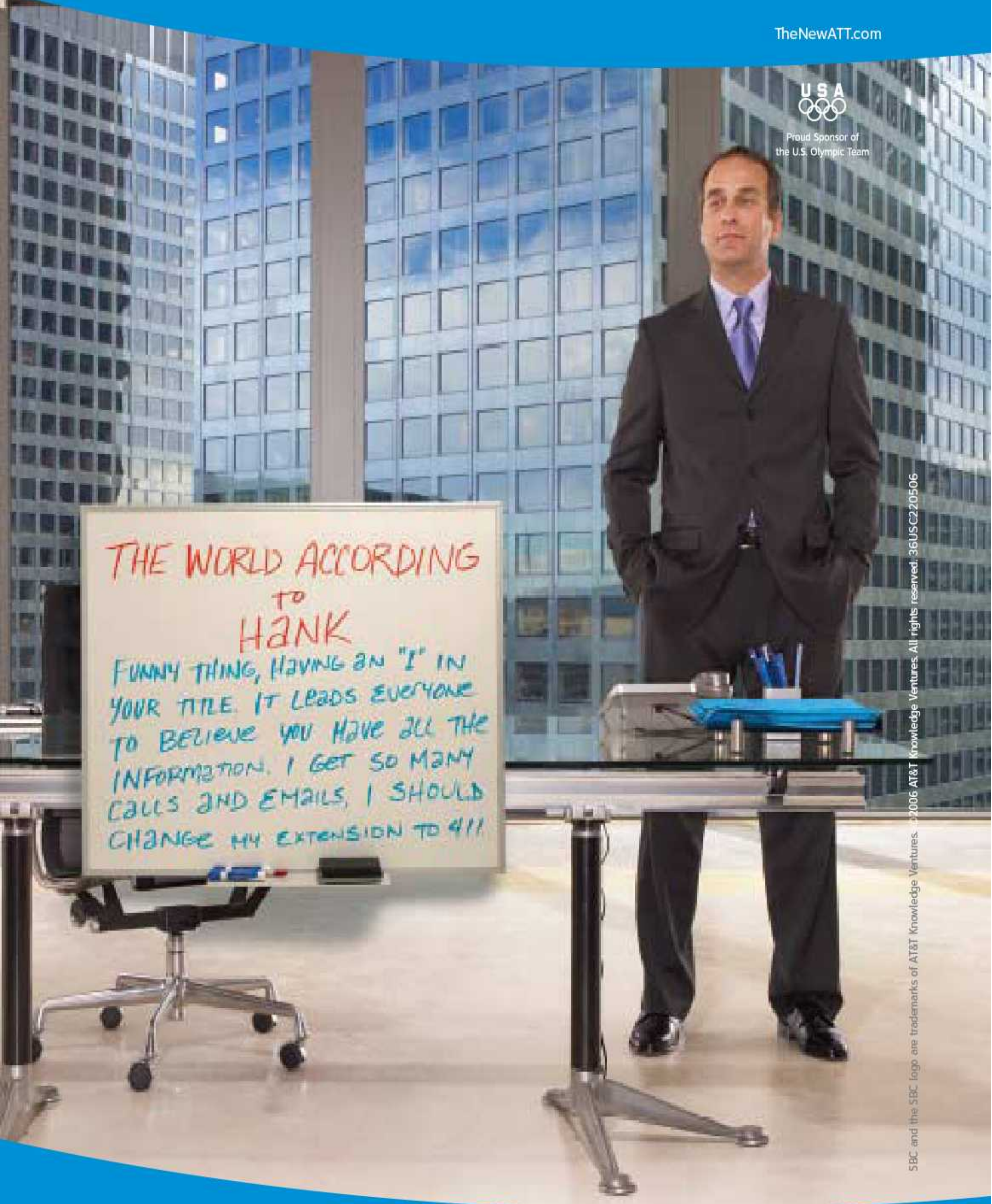
Would you be willing to give outsiders access to these broadcasts?

We haven't thought about that. But once our plan is fully in place, if it seems like it will be useful, I'll have no problem putting out the information to the public. We could easily add a link to our external Web site. Also, we're always interested in exchanging good ideas and information with companies that are further ahead than we are in other areas.

What do you think is the weakest spot for business overall that should be shored up before a pandemic strikes?

From a business-planning perspective, I'd have to say it's our dependence on external providers, even down to the basics like electricity and transportation. There's so much that we take for granted on a day-to-day basis. That's why companies should be swapping best practices, figuring out how to help one another.

We're all connected. If our customers, partners, and communities continue to function, we'll all get through this together. A pandemic crosses borders, social strata, religions, and political camps. If we can't leverage our technology to make a difference in this situation, then shame on us.


USA
Proud Sponsor of the U.S. Olympic Team
THE WORLD ACCORDING TO HANK
FUNNY THING, HAVING AN "I" IN YOUR TITLE. IT LEADS EVERYONE TO BELIEVE YOU HAVE ALL THE INFORMATION. I GET SO MANY CALLS AND EMAILS, I SHOULD CHANGE MY EXTENSION TO 411

GLOBAL IMPACT

All Eyes on China

by WENDY DOBSON AND BRIAN R. GOLDEN

Many scientists assume that China would be the epicenter of an avian flu pandemic, a possibility that would have far-reaching economic consequences. That prospect, while hardly certain, brings into focus the country's rural areas, where 60% of China's 1.3 billion people live. Many are farmers whose livelihood depends on poultry and who live in regions with rudimentary public health surveillance and services. But family members often work in industries in nearby centers, and more than 70 million young people from these households provide low-cost labor in urban jobs, staying in city dormitories most of the time but traveling home for holidays and harvests.

Mobile subgroups like this one are potential vectors of flu transmission. The spread of flu would reduce their mobility and create labor shortages in urban industries: the manufacturing exports "workshop" (employing young women), the construction industry (employing young men), and tourism and hospitality (which depend on both). Migrants remit around 40% of their earnings to their families, so domestic consumption would decline as their incomes shrank. The urban population would avoid travel, crowds, and shopping, further reducing consumption, as occurred with the far less infectious severe acute respiratory syndrome.

Existing avian flu cases, while small in number, have had a high mortality rate (53% since 2003). Because so many of the infected may die, one serious long-term concern about a pandemic is demographic. Garden-variety seasonal influenza is disproportionately dangerous to people with underlying illnesses or with relatively weak immune systems, many of whom are in their fifties and beyond. However, because avian flu can cause immune system hyperactivity, it is also especially lethal in those with the strongest immune systems. Thus, unlike seasonal influenza, avian flu could kill the most productive members of the workforce. This outcome would compound the already apparent impact of China's 1979 one-child-per-family policy, which has reduced the size of the cohort entering the labor force. The workforce would shrink even faster, putting pressure on China's inadequate social safety net and on the low real wages that sustain China's workshop.

Fully 90% of China's exports are manufactured; a quarter of these head to the U.S. market, accounting for a fifth of U.S. imports. Disease in the manufacturing workshop will depress China's performance as the world's third-largest exporter because of potential harm to its main customers (the United States, the European Union, and Japan) and to its East Asian suppliers, which provide almost half of China's imports. The impact will be felt differently by different industries and types of businesses.

About 45% of China's exports are telecom and office equipment, textiles, apparel, or auto parts; most of these items are produced by large foreign-invested enterprises in coastal areas. Such enterprises will fare reasonably well because governments and employers will act quickly to contain disease outbreaks and locate alternative labor. Instead, problems will arise among local parts suppliers and those who produce the other half of China's manufactured exports. These producers are domestically owned small businesses, operating with thin margins and supplying the parts for the country's export platforms and myriad consumer goods – leather, plastics, furniture, toys, sports equipment, food – that giant retailers like Wal-Mart then import. Logistical and employment problems, both from quarantines and from the spread of flu, would ripple through international markets to consumers and retailers in the form of higher prices and lower availability, sales, and employment.

While devastating, the 1918–1919 flu, which killed up to 50 million people, occurred at a time when events diffused more slowly in some parts of the world. Now that China is so integrated into the world economy, if an avian flu pandemic begins there, the global impact will be immediate.

WENDY DOBSON *directs the Institute for International Business and is a professor of business economics at the University of Toronto's Rotman School of Management.* BRIAN R. GOLDEN *is the Sandra Rotman Chaired Professor of Health Sector Strategy at the Rotman School of Management and the University Health Network at the University of Toronto; he is also the director of the Rotman Centre for Health Sector Strategy.*

Reprint F0605A

MORE THAN 65% OF SAP CUSTOMERS ARE SMALL OR MIDSIZE COMPANIES:

You don't have to be a big company to face big challenges. Or to have big expectations. That's why thousands of small and midsize companies around the world maximize their advantage with flexible, affordable and proven software from SAP. Find out how SAP, together with our network of qualified channel partners, can be a good fit for your business – whatever its size. Visit **sap.com/yoursize**

THE BEST-RUN BUSINESSES RUN SAP™

*Among Dun & Bradstreet, Inc. listed companies with employee number information. Small and midsize companies are defined as those having between 1 and 2,500 employees, and include customers of mySAP™ All-in-One and SAP® Business One solutions sold through resellers.

Big Shoes to Fill

by Michael Beer

A larger-than-life CEO left Innostat with larger-than-life problems. The new boss knows the company needs fundamental change, but the image of her predecessor hovers.

THE MEMORIAL SERVICE was a sellout. Jack Donally had been a colossal figure who commanded a lot of respect, if not affection. He'll be a hard act to follow, Stephanie Fortas thought as she strained to make sense of the eulogy, delivered in a thick Irish accent by the same priest who had married Jack and Moira Donally 40 years ago. Moira must be feeling especially lost, Stephanie thought. A deferring, uncomplaining woman, Moira had apparently taken second place to Innostat all her married life, and just when it seemed that she would soon have Jack all to herself, he up and died.

But it wasn't just Moira and her five children who looked lost, Stephanie thought. Everyone seemed bewildered. As the CEO appointed by the board to succeed Jack just before his untimely death, Stephanie knew that a lot of people would be looking to her for answers. She edged forward to pay her respects to Moira, aware that a lot of curious eyes were fixed on her.

"I've heard so much about Jack," Stephanie said, offering her condolences to Moira. "I'm going to do my best to protect his legacy."

A One-Man Show

That legacy was formidable. Boston-based Innostat was very much Jack Donally's creation. He had transformed the company from a small local manufacturer of scalpels and other surgical equipment into the world's best-known maker of prosthetic limbs and surgical implants. Sales had reached more than $2 billion, with the company employing more than 5,000 people at locations in Boston, Los Angeles, and Dublin, Ireland. Innostat also had sales and marketing country organizations around the world. A pharmacist's son from the rough-and-tumble Irish American stronghold of South Boston – Southie to the

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

DANIEL VASCONCELLOS

locals – Jack had joined Innostat as a salesman right after completing a tour of duty in Vietnam as a medical orderly. His unit had been in the thick of some of the worst action, and he always said afterward that his passion for the company and its products came from that experience.

Under Jack's leadership, Innostat built a reputation for technological innovation and manufacturing quality. That was, on the face of it, surprising, since Jack had majored in history at the University of Massachusetts and liked to say that he had no head for "science talk." But the truth was, he loved to spend time talking to surgeons and researchers. He had that special skill that merged an interest in technology with an understanding of what customers needed and wanted. He typically came back from his travels full of ideas for new products. He would go straight to the head of R&D and get him started on a project, rarely engaging Innostat's senior team in discussions of these ideas and how they fit in to the company's broader strategy. Consequently, marketing never developed as a strong function, and R&D, though technologically sophisticated, never developed marketing savvy.

Despite his primary focus on new product ideas, Jack was also acutely conscious that health care products had to be error free, and he had always kept a close eye on manufacturing. Frank Timoshotsky, the self-effacing head of production recruited from Toyota, had introduced many of the car company's quality practices, which had helped the firm win a Baldrige prize.

But in the three years before Jack's retirement, Innostat's performance had declined dramatically, and the company was facing strong competitive challenges in its key markets. The firm's once generous margins had narrowed as other companies found ways to engineer around Innostat's patents and develop competitive products of their own. Worse, the company seemed to have lost its innovating edge. After a string of new offerings in the 1990s, which delivered annual growth in revenues and profits of more than 15% a year, Innostat had not launched any major new products for the past four years, yet they were essential for profitable growth.

Stephanie had not been Jack's choice for a successor. He had strongly pleaded the case for Frank to the board. But three years of falling results and growing pressure from Wall Street had prompted the board to look for an outsider. The directors settled on Stephanie because of her technical background. A 1989 PhD from Stanford, she had also received an MBA from MIT's Sloan School in the early 1990s, and then headed back West to join the marketing department of Phasar, a medical technology company. Stephanie's combination of technological skills and business savvy had marked her as a highflier, and within ten years she had become the company's chief operating officer. In that role, she worked closely with Phasar's chief science officer to ensure that the company's R&D efforts were focused on commercially viable products.

"Jack said that really good ideas don't need incentives, they need passion, and that he was the chief passion officer."

The headhunter had caught Stephanie at the perfect moment – right after a messy divorce. She was eager to put California behind her, and a professional challenge offered just the kind of distraction she needed. There was no doubt that Innostat would present that challenge. It seemed to have completely lost the ability to innovate, and investors were starting to question whether the company actually had a strategy. Long term, Stephanie knew that she would have to radically alter the way the firm innovated. But she wasn't sure that Innostat was in any shape to survive a major change initiative.

The Walk by the River

Stephanie believed in tackling big challenges head-on. Her first priority was to figure out how Frank felt about her and whether she could work with him. They had met at her hotel in Harvard Square the day after her appointment was announced, and Frank had proposed a stroll along the Charles. It was a warm, early October day, and the university crew teams were out on the river practicing for the Head of the Charles regatta later in the month. As they walked, Stephanie and Frank struggled to find common ground.

"Where do you plan on living?" Frank asked.

"Back Bay, probably," Stephanie said. "I don't have kids, so I don't need a big house. Anyway, I like the buzz of city life."

"I know what you mean," Frank agreed. "I miss Back Bay. Cathy and I had a place there until the kids came along. Now we're in the suburbs. The schools are good, and the commute is fairly short. But I miss the edge of city life sometimes."

Frank shuffled his feet. "Look, Stephanie," he said. "You have a lot of problems in this company, and I'm not one of them. I know everyone thinks of me as Jack's boy, and I was. But I'm not such a fool that I can't see that the company needs to change." He caught Stephanie's eye. "We got way too dependent on Jack for ideas," he said, "and, to be honest, he didn't have much faith that anyone in the company could come up with them, so he didn't really develop the capability. He was always talking to people outside the company for ideas. And now we've got a real problem on our hands."

Stephanie listened intently. "And what would you do if you had my job?" she asked pointedly.

Frank paused for a moment. "Well, to begin with," he said, "we've got to take a look at why people are not thinking beyond their immediate functional departments. People around here are

Michael Beer (mbeer@hbs.edu) is the Cahners-Rabb Professor of Business Administration Emeritus at Harvard Business School in Boston.

focused only on making their numbers within their own units, so they don't have much reason to respond to product development initiatives from R&D. Besides, they don't believe R&D's estimates of market potential. So why invest time and money on a promise they don't believe? When Jack pushed an idea, we all responded because Jack was the boss, and he was just that kind of guy. But with him gone, who's going to stick their necks out now?"

"Did you ever talk to Jack about this?" Stephanie asked more abruptly than she had intended.

"I didn't," Frank acknowledged. "But we did get a report from PK Henderson a year ago. The board got Jack to call them in for a consult. They came up with this reorg idea. Most of us thought it was a little crazy and that a massive reorganization was not the answer. Personally, I still believe that the problem is motivation, that the company needs more powerful incentives to get people thinking out of the box. Jack didn't see it, though, and he buried the report. He said that really good ideas don't need incentives, they need passion, and that he was the chief passion officer."

Filed but Not Forgotten

Stephanie had come away from the conversation intrigued. She'd been told about the Henderson report in her negotiations with the board, but only in passing. The board members had seemed quite dismissive, so she hadn't pressed them on it. She decided to get herself a copy.

Stephanie read the report that night in her office over a tuna sandwich from the company cafeteria. She picked up the binder and turned to the summary page. As Frank had told her, the report's recommendations involved a fairly major change to the company's management practices. Decision rights for new product development were to be taken out of R&D and given to cross-functional new product development teams headed by senior marketing people. The teams would be responsible for seeing the development from its early stages through to introduction of the product. The teams would be made up of those most closely related to the new development: bench scientists from R&D, a relatively senior manufacturing engineer, along with the manager of the plant making the product and someone from sales.

Because Jack had played such a dominant role in defining new product opportunities and pushing them through the organization, the consultants acknowledged that the marketing division lacked the experience and credibility to do this kind of work. On the other hand, the division had the best view of the market through its relationships with surgeons. Yet sales and marketing at Innostat was heavily sales dominated and had few people with both high levels of marketing and general management skills. To get around this problem, the consultants had suggested creating a strategic marketing department that would report to the CEO. This new department would be responsible for identifying opportunities and for leading the product development process. No recommendation was made as to who in the company might head this new department. It was this issue that slowed acceptance of the reorganization plan. Jim Pappas, director of sales and marketing, clearly didn't have the head for this kind of work. But, like most salesmen, he was fiercely territorial and resented losing part of his responsibilities.

Stephanie felt for Jim. He was an old-school salesman down to his fingertips. He entertained lavishly, and he probably knew the golfing handicap of every hospital purchasing manager in Boston. It wasn't going to be easy for him or for anyone in the company to give up his sovereignty; once it happened, all hell could break loose. Stephanie looked around her office, which had Jack's personality imprinted on it. A huge corner suite with an oversized mahogany antique desk, the room communicated the force of life that had been Jack Donally. "He certainly was a charismatic leader," Stephanie thought, scanning her surroundings, "but I wonder what his kids thought of him. He must have been a difficult man to live with."

Stephanie forced her mind back to the report. The consultants believed that people needed to be motivated further to commit the time and energy to the new process, and recommended that employees be held accountable to both their functional and team heads. The consultants also suggested that the team leaders and members be measured on the timeliness and profitability of new products and that all incentives be monetary and based on performance. They recommended hiring an organizational development consultant to work with HR on designing the new system and on creating appropriate training programs.

It was the final recommendation, though, that obviously got the report killed. Henderson had strongly urged Jack and other top executives to be less involved in the details of developing new products, limiting themselves to formulating strategy, choosing the portfolio of new products, reviewing team progress, and continually reprioritizing projects and reallocating money and people based on emerging information. Stephanie wondered whether the consultants who recommended these measures would ever have received another assignment from Innostat. Probably not. Jack would never have said yes to these recommendations. But should she?

Company or Career

Stephanie put the question to Teddy Adler, her executive coach. Stephanie had first consulted Teddy for career advice shortly after joining Phasar. A fellow Sloan alum had recommended him: "He's a bit domineering but very smart," the alum had said. "He can give you a real political edge." Teddy had more than lived up to the billing.

After Stephanie read the report, she and Teddy met at a small restaurant in Cambridge, one of Stephanie's favorite haunts when she had been a student at MIT. The restaurant was part of a popular, upmarket local chain, and Stephanie remembered having a farewell meal there with some friends after her business school graduation. She ordered a small Caesar salad and a glass of Diet Coke as she settled down to talk with

Teddy, who was fairly dismissive of the Henderson report. "There's no way you can win doing a wholesale reorg," he said, leaning in and lowering his voice. "You just don't have the people to make it work fast enough. It'll take five years minimum. If he'd wanted to, Jack might have made it work, but not you, not yet. You've got to build some capital with the board to make that kind of change, and to do that you're going to have to rack up some successes."

Stephanie pushed back. "Suppose I don't turn out to have any great ideas for products, or the ones I do develop and push through just don't pan out? Then we're back to square one – and at that point, the honeymoon, such as it is, will be over."

"Look, Stephanie, that's just the risk you take with this kind of job. What this board wants is new products, and they're not worried about how they get them. They've made you CEO because they think you can give them what they want. Remember, they saw the report, too, and they buried it. If they'd wanted to do what the report recommended, they would have hired some reorg expert instead of you. Your strong suits are technology and marketing. That makes you the best person to spot new products that will work – products that you can then drive through the organization. In this respect, your biggest problem will be Timoshotsky because, whatever he says, he'll resent the fact that you got the job and he didn't. The other people will fall in line. Pappas is near the end of his career and won't want to move, so he'll ultimately knuckle under. And Chuck Bukowski over there at R&D is used to playing a supporting role anyway. With limited time at your disposal, you've got no choice but to repeat the Jack Donally leadership formula. Create your own senior team, pick a product, and be forceful in moving it through to conclusion, even if that means more top-down management than is typically your style."

At that point, friends joined them, and the conversation shifted to the Red Sox. Stephanie listened with only half an ear; baseball bored her, and her head was full of the conversation she and Teddy had just had. On one level, everything he said made sense. A massive reorg carried a lot of risks. The noncollaborative culture of the company made it hard to see how a complex matrix like cross-functional organization could possibly work. Moreover, there was the question of who in the company could lead the new strategic marketing group. As Teddy had pointed out, she could find herself out on her ear before the results came in. If the company survived after she left, it would be the next CEO who got the glory. And that was supposing Innostat could even stay independent. It was obvious that the board knew that, too. Why else would it be in such a hurry?

But Stephanie wasn't so sure that Teddy was giving her good advice. Her experience and values instinctively told her that developing the organization and its people so that the company would possess the capability for sustained innovation was the way to go. Innostat has shown that it can't dream up new products on its own. Shouldn't she be looking for ways to fix that? Wasn't a CEO supposed to look to the long term? Or was she just cooking her goose?

Then again, she had never been in this type of turnaround situation before. Frank had said that the problem in the company was motivation. People needed an incentive. Why not make a larger percentage of managers' compensation contingent on sales and profits? This, together with strong leadership from her, might be just the solution. Maybe Teddy was right after all.

"Guys," Stephanie said to Teddy and those who had joined them, "I have to go. I have an early morning meeting tomorrow." She suggested they stay and enjoy the rest of the evening. She walked out of the restaurant into the cool fall air. "Let's see, which way?" she said out loud, speaking to no one in particular.

What should Stephanie do: institute a basic reorganization, or re-create the Jack Donally model of strong leadership? • Four commentators offer expert advice.

Unfortunately, it is not uncommon for a successful, charismatic leader to lead a company with a strong, passionate, and very personal hand. When that style plays itself out, however, the company's performance starts to wane, and the opportunity for a transformational leader opens up – a leader who focuses on the systems and processes of a company as opposed to creating a personally dependent organization, the way Innostat was dependent on Jack Donally.

Sometimes the charismatic leader can stifle a company's innovation because all the decisions have to go through him or her; in such situations, the "best" ideas need to originate from the top, and everything needs the leader's blessing. With this style of leadership, the organization can lose some of its creative energy.

Stephanie Fortas needs to be a transformational leader. The board doesn't want another big personality. It is looking for a new model of change, and Stephanie can successfully manage that change if she can get out of Jack's shadow. Stephanie's coach tells her that Innostat can't survive any major upheaval. But, in fact, the company is ripe for a transformation and needs it. There have been no new products, no new innovations – most of the organization is probably waiting for Stephanie to make a real change.

There are certainly some parallels between my experience at Mattel and this case. When I joined the company in 2000, it was underperforming. The board of directors and the senior management team were both underutilized. So I had to focus right away on establishing a direction and vision for the company in order to move us forward. The organization evolved quickly and, within my first few months, the executive team and I made some important hires. We had a new person come in from the outside to head up the worldwide supply chain. We brought a new individual in to run corporate strategy; he is now leading international. Finally, we brought in someone to direct investor relations; she is now our CIO.

Stephanie will have about three to four months to bring in several people who will complement the solid management team already in place. She's got a good prospect in Frank Timoshotsky. I appreciate Frank's candor and skills and would trust him. Jim Pappas is a terrific salesman but someone with no marketing expertise. Stephanie needs to convince him that she has to go outside to find a marketing person. She should complement these proven performers with a few choice outside hires to create a first-class team.

Stephanie needs to be a transformational leader. She will have about three to four months to bring in several people who will complement the solid management team already in place.

How Stephanie runs that team is paramount in determining Innostat's future. Every Tuesday morning at Mattel, we get all the function and division heads together to discuss what's going on in the business and which projects are a top priority and are affecting other areas of the business. We set priorities on the basis of annual corporate goals, and we work together to execute those priorities.

I would advise Stephanie against setting up the organization as a matrix, which the Henderson report recommends. A matrix organization is too complex for where Innostat is today. The company may evolve into one, but right now no one will feel responsible for results. To instill ownership, Stephanie has to force her people to operate together as a team. She needs to be right in there, getting her hands dirty. As the leader of the team, she has to engage her people. Jack used to walk into R&D and just make things happen. But Stephanie has to really partner with her team.

Robert A. Eckert is the chairman and CEO at Mattel, headquartered in El Segundo, California. Before joining Mattel in 2000, Eckert spent 23 years at Kraft, the last three years as CEO.

WENDY WRAY

Steven F. Dichter (sdichter@truepoint.com) is the director of TruePoint Partners, a research-based organizational consulting firm based in Waltham, Massachusetts.

Stephanie should begin by firing her coach. He's presenting her with false choices and making assessments of Innostat's people and politics without any data. If this is his typical MO, Teddy Adler's advice will someday be spectacularly wrong.

Stephanie needs to break with the past and energize Innostat around its performance issues. That's not to say she should follow the Henderson report recommendations. In fact, implementing a major reorg, with all the pitfalls and distractions it entails, is the last thing I'd advise her to do. In my own experience, structural reorganizations are overrated. Sometimes, when a company suffers from severe organizational dysfunction, you don't have a choice. But reorganizations encourage people to focus internally on company politics and position instead of looking externally at the challenges presented by the competition and customer needs.

Still, the Henderson report is directionally right. Stephanie needs to get people in the post-Jack company to operate in new ways. She could do that quite easily by setting up some targeted ad hoc cross-functional teams around productivity improvements and new product opportunities. That wouldn't constitute a major reorg, and it would give her a means to leverage her skills, build credibility, and learn how the company works. Right now, even if she had to, she wouldn't be in a good position to make major changes because she doesn't know the people or the organization very well. Finally, working on the teams would give Stephanie the opportunity to take a hands-on role in coaching and in contributing her own experience and technical skills.

Implementing a major reorg, with all the pitfalls and distractions it entails, is the last thing I'd advise Stephanie to do. In my own experience, structural reorganizations are overrated.

That's a very different leadership model from Jack's. Stephanie needs to be very careful not to be the dominating force within the cross-functional teams. She should, for a start, designate other people (and not necessarily marketing people) to be team leaders.

Teddy advises her to make some changes to the top team. I wouldn't advise that, unless it's clear that any of the senior managers are determined to create problems or aren't up to the job, neither of which seems to be the case at this point. What she does need to do, though, is make sure that the senior executives are clear about the challenge and deeply involved in the effort to improve performance. She could, perhaps, have the new cross-functional performance teams report to the top team so they could all track the company's progress and build a collective understanding of the company's problems. That approach might also help the senior executives gain insight into their own effectiveness as leaders and how their leadership styles affect those in the company.

Frank and others seem to think that some of Innostat's problems can be solved by creating a new incentive structure. Now, incentives are important, but my feeling is that they should lag rather than lead the changes. Of course, if your comp system encourages the wrong kind of behaviors or discourages employees from collaborating effectively, you do have to make immediate changes. But unless the system is creating obvious problems, I would leave it alone for now. My goal as a leader would be to get people focused on meeting the challenges facing the company, and on the emotional rewards of being part of that winning effort, rather than on spending a lot of time and effort redesigning incentives.

Stephanie should frame the coming year as a transition period. Getting the organizational structure and compensation system right are jobs for the future. The immediate priority should be to energize the company's talent around getting performance back on track and getting people to embrace a different way of working. You'd be surprised just how quickly the relatively small changes I propose can affect corporate culture, even at a company the size of Innostat, provided the leadership team is determined and cohesive. Results could come within a year.


In this ever changing world,
Singapore Airlines, you're a great way to fly.
First to Fly A380 In 2006
SINGAPORE AIRLINES
A STAR ALLIANCE MEMBER
FLY NON-STOP TO: SINGAPORE · TAIPEI · HONG KONG · TOKYO · SEOUL · FRANKFURT
singaporeair.com

Patrick J. Canavan (patc59 @gmail.com) is a senior vice president and the director of global governance at Motorola, headquartered in Schaumberg, Illinois.

Jack's death is a watershed for Innostat. Even if he hadn't died, it was time to take the company out of his hands – or at least put him into a role where he was not calling all the shots. Charismatic CEOs like Jack can be good for small companies, but they can be bad news for large ones. Even before Jack died, the firm needed change: There were no new products, and the financials were bad.

Teddy tells Stephanie she should imitate Jack's strong leadership style. That advice is setting her up to fail.

Teddy, the executive coach, tells Stephanie she should imitate Jack's strong leadership style if she is going to succeed. That advice is setting her up to fail. She isn't leading some start-up; she's the CEO of a large, publicly traded company.

The Henderson report is not where Stephanie should be looking in the short term. Given the company's poor financial health, it would be wrong to take product definition out of the hands of the CEO and the top team and entrust it to a bunch of midlevel managers, which is what the report recommends. The current middle management isn't used to that kind of responsibility, and it would take too long for newcomers to come up to speed in the organization. So senior management will have to take a hands-on role in the next couple of years until the company's finances are healthy again–while promoting, recruiting, and developing next-generation leaders to do this work. Sorting out that senior team should be Stephanie's immediate priority. Frank is the strongest player, and I believe him when he says he doesn't want to challenge Stephanie. He should be a key part of the turnaround. Jim is about to retire but should be asked to stay another year so that he can help build his department's bench strength and, more important, transfer his customer relationships to his successor.

There's some low-hanging fruit to pick as well. Charismatic leaders like Jack often have difficulty killing products that are their ideas. The top team could make an immediate difference to the financials by eliminating some unprofitable product lines and using the money to invest more in the company's successful ones.

Long term, of course, a reorg will be necessary. Stephanie has to change the company's culture so that lower-level managers can take more responsibility for product definition and development. At present, Innostat is a siloed organization. People don't talk to each other very much, and lower-level managers are not expected to come up with new ideas. Fixing that will involve a matrix structure similar to the one the Henderson team proposed. Granted, such structures can seem cumbersome, but it's my experience that they work. In fact, if you're a manager in a large firm, you need information and support from lots of different people, so you're probably operating in a matrix anyway, even if it's not a formal one.

If I were Stephanie, I would not reengage the consultants, at least not yet. But I would meet with them privately off-site. I would ask them to walk me through the report. Consultants know more than they write in reports. They can tell Stephanie who's likely to resist changes and who's likely to support them. My guess is that all those who may have agreed with the report kept silent; it would have been political suicide for them to speak up. The information the consultants give her will help her lead the eventual reorg more effectively. And it won't have to take as long as Teddy thinks. At Motorola, a $36 billion company, we made significant and noticeable progress in changing our culture in about two years.

Whatever Stephanie does, she will need to get the board behind her. Teddy's got her looking over her shoulder at the wrong people. The real trouble is likely to come from the board, which was put together by and highly aligned with Jack. If she can't get members to support what she wants to do, then she'll be in serious trouble.

Kerry Sulkowicz (kjs@boswell group.com), a psychiatrist and psychoanalyst, founded the New York–based Boswell Group, a consulting firm that advises companies on CEO succession and senior team dynamics. He is also a senior fellow at Katzenbach Partners, a strategy and organization consulting firm in New York. His forthcoming book Shrink/ Inc: Self-Awareness as the Ultimate Business Strategy *will be published by Random House in late 2006.*

Stephanie should begin by picking up the Henderson report and promptly feeding it to the nearest shredder. The plan wouldn't have solved Innostat's innovation problem when Jack was in charge, and it would create even more of a mess now that there's a new CEO. Some aspects of the plan might ultimately make sense, but one of the common pitfalls for CEOs is to believe that organizational change alone can undo fundamental problems in leadership and culture. The plan will not solve the company's creativity crisis.

Jack is a hard act to follow. His accomplishments as a charismatic, visionary leader are remarkable. Yet three years before his retirement, Innostat began losing its innovative edge. Something happened to Jack. Had the prospect of retirement dampened his creativity? Was his diminished effectiveness a subtle manifestation of the illness that ultimately took his life? Undoubtedly, external forces – competitive challenges in key markets, narrowed margins – came into play, but Jack's leadership had already begun to fail.

Jack wanted Frank, his trusted head of production, to succeed him. The board probably sensed Jack's ambivalence about letting go – perhaps in his choice of successor – and wisely recognized that Frank, while extremely valuable to the company, wouldn't be able to shake up new product development. But the board might have erred in choosing an outsider with a strong technical background rather than someone with proven leadership skills. It's a lot easier to hire a person with technical expertise than a creative thinker or an inspired leader.

Stephanie's state of mind is also a concern. Will her need to escape a painful divorce allow her to engage fully in solving Innostat's performance crisis, or is she emotionally vulnerable and prone to being unduly influenced by others? Stephanie is filled with self-doubt, and it's not clear whether that's a dose of healthy humility or abject panic. I agree with her coach that she should reject the reorganization plan. But it is another thing for him to make Stephanie wary of Frank and to push her to be the kind of leader she might never be. I hope Stephanie can take a step back and reflect on the possibility that reorganization at this point might lead the company astray. She should consult with employees, listen to the board, and talk to her customers to help her understand why Innostat stopped developing new products in the first place.

Will Stephanie's need to escape a painful divorce allow her to engage fully in solving Innostat's performance crisis?

It's not necessarily a disaster if Stephanie doesn't have what it takes to do what Jack did, as long as she's honest with herself and the board. She could always hire someone who has the ability to reignite creativity. The danger is that she might not know her own limitations or deeply understand the problem, and fail trying to correct it. That's what happened at a $250 million technology start-up I consulted for about two years ago. A new CEO was brought on with plenty of sales experience. But he was so driven to come up with new products that he treated people in the labs as if they were artists being asked to paint masterpieces on a rigid timetable. It just doesn't work that way. In that situation, I ultimately advised the private equity firm to find a new CEO, and helped it select one whose personality fit better with the culture. If Stephanie is going to succeed in stirring up Innostat's creative juices, she will have to balance the need for accountability and pushing products through–this is a business, after all–with the need to foster a safe space in the lab where people can create freely.

Reprint R0605A
Reprint R0605X: Case only
Reprint R0605Z: Commentary only
To order, see page 159.


ready
to do everything faster.
ready
to circle the globe before lunch.
Are your people ready?

If any business needs a dose of creativity, it's health care. A systematic assessment of the industry's innovation ills suggests some remedies and offers a framework for thinking about the obstacles to new ventures in any business.

Why Innovation in Health Care Is So Hard

by Regina E. Herzlinger

HEALTH CARE – in the United States, certainly, but also in most other developed countries – is ailing and in need of help. Yes, medical treatment has made astonishing advances over the years. But the packaging and delivery of that treatment are often inefficient, ineffective, and consumer unfriendly.

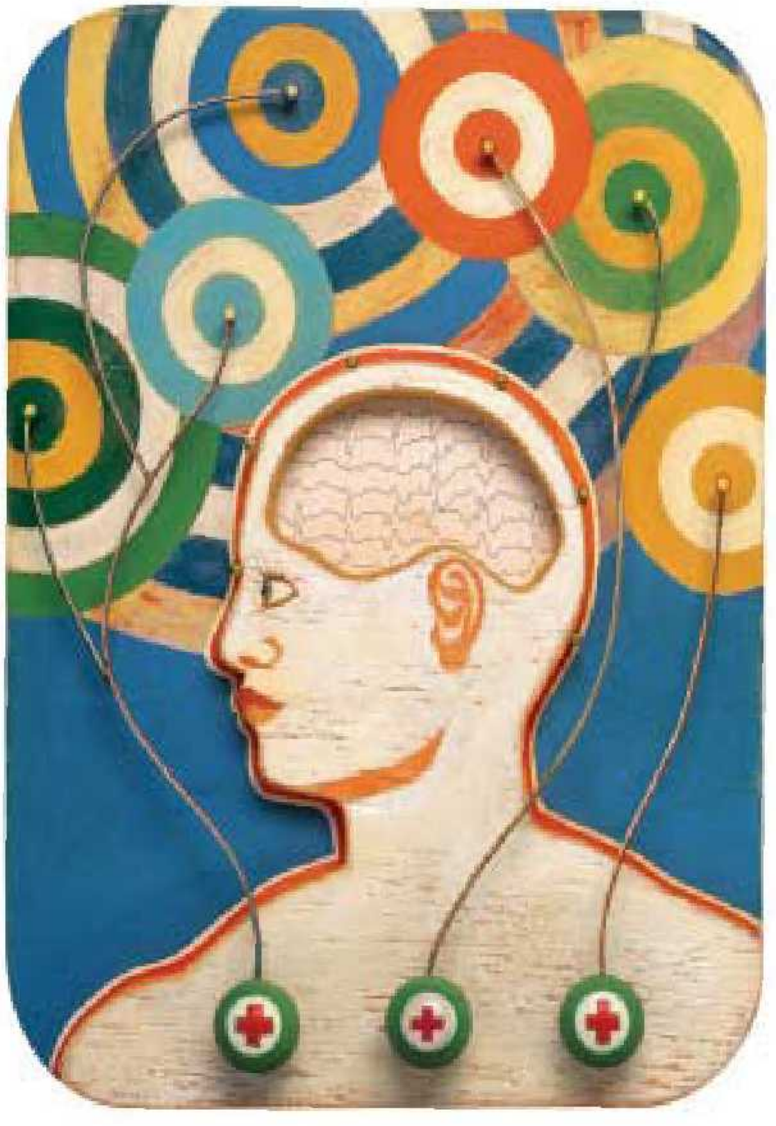
The well-known problems range from medical errors, which by some accounts are the eighth leading cause of death in the United States, to the soaring cost of health care. The amount spent now represents about one-sixth of the U.S. gross domestic product; it continues to grow much faster than the economy; and it threatens the economic future of the governments, businesses, and individuals called upon to foot the bill. Despite the outlay, more than 40 million people have no health insurance.

Such problems beg for innovative solutions involving every aspect of health care – its delivery to consumers, its technology, and its business models. Indeed, a great deal of money has been spent on the search for solutions. U.S. government spending on health care R&D, which came to $26 billion in 2003, is topped only by the government's spending on defense R&D. Private-sector spending on health care R&D – in pharmaceuticals, biotechnology, medical devices, and health services – also runs into the tens of billions of dollars. According to one study of U.S. companies, only software spawns more new ventures receiving early-stage angel funding than the health field.

Despite this enormous investment in innovation and the magnitude of the opportunity for innovators to both do good and do well, all too many efforts fail, losing billions of investor dollars along the way. Some of the more conspicuous examples: the disastrous outcome of the managed care revolution, the $40 billion lost by investors to biotech ventures, and the collapse of numerous businesses aimed at bringing economies of scale to fragmented physician practices.

So why is innovation so unsuccessful in health care? To answer, we must break down the problem, looking at the different types of innovation and the forces that affect them, for good or ill. (See the sidebar "Six Forces That Can Drive Innovation – Or Kill It.") This

MARIA RENDON



method of analysis, while applied here mainly to health care in the U.S., also offers a framework for understanding the health care problems of other developed economies – and for helping managers understand innovation challenges in any industry.

A Health Care Innovation Catalog

Three kinds of innovation can make health care better and cheaper. One changes the ways *consumers* buy and use health care. Another uses *technology* to develop new products and treatments or otherwise improve care. The third generates new *business models*, particularly those that involve the horizontal or vertical integration of separate health care organizations or activities.

Consumer focused. Innovations in the delivery of health care can result in more-convenient, more-effective, and less-expensive treatments for today's time-stressed and increasingly empowered health care consumers. For example, a health plan can involve consumers in the service delivery process by offering low-cost, high-deductible insurance, which can give members greater control over their personal health care spending. Or a health plan (or service provider) can focus on becoming more user-friendly. Patients, after all, are like other consumers: They want not only a good product – quality care at a good price – but also ease of use. People in the United States have to wait an average of three weeks for an appointment and, when they show up, 30 minutes to see a doctor, according to a 2003 study by the American Medical Association. More seriously, they often must travel from one facility to another for treatment, especially in the case of chronic diseases that involve several medical disciplines.

Technology. New drugs, diagnostic methods, drug delivery systems, and medical devices offer the hope of better treatment and of care that is less costly, disruptive, and painful. For example, implanted sensors can help patients monitor their diseases more effectively. And IT innovations that connect the many islands of information in the health care system can both vastly improve quality and lower costs by, for example, keeping a patient's various providers informed and thereby reducing errors of omission or commission.

Business model. Health care is still an astonishingly fragmented industry. More than half of U.S. physicians work in practices of three or fewer doctors; a quarter of the nation's 5,000 community hospitals and nearly half of its 17,000 nursing homes are independent; and the medical device and biotechnology sectors are made up of thousands of small firms. Innovative business models, particularly those that integrate health care activities, can increase efficiency, improve care, and save consumers time. You can roll a number of independent players up into a single organization – horizontal integration – to generate economies of scale. Or you can bring the treatment of a chronic disease under one roof – vertical integration – and make the treatment more effective and convenient. In the latter case, patients get one-stop shopping and are freed from the burden of coordinating their care with myriad providers (for example, the ophthalmologists, podiatrists, cardiologists, neurologists, and nephrologists who care for diabetics). Such "focused factories," to adopt C. Wickham Skinner's term, cut costs by improving patients' health. Furthermore, they reduce the likelihood that an individual's care will fall between the cracks of different medical disciplines.

The health care system erects an array of barriers to each of these valuable types of innovation. More often than not, though, the obstacles can be overcome by managing the six forces that have an impact on health care innovation.

The Forces Affecting Innovation

The six forces – industry players, funding, public policy, technology, customers, and accountability – can help or hinder efforts at innovation. Individually or in combination, the forces will affect the three types of innovation in different ways.

Players. The health care sector has many stakeholders, each with an agenda. Often, these players have substantial resources and the power to influence public policy and opinion by attacking or helping the innovator. For example, hospitals and doctors sometimes blame technology-driven product innovators for the health care system's high costs. Medical specialists wage turf warfare for control of patient services, and insurers battle medical service and technology providers over which treatments and payments are acceptable. Inpatient hospitals and outpatient care providers vie for patients, while chains and independent organizations spar over market influence. Nonprofit, for-profit, and publicly funded institutions quarrel over their respective roles and rights. Patient advocates seek influence with policy makers and politicians, who may have a different agenda altogether – namely, seeking fame and public adulation through their decisions or votes.

The competing interests of the different groups aren't always clear or permanent. The AMA and the tort lawyers, bitter foes on the subject of physician malpractice, have lobbied together for legislation to enable people who are wrongly denied medical care to sue managed-care insurance plans. Unless innovators recognize and try to work with the complex interests of the different players, they will see their efforts stymied.

Funding. Innovation in health care presents two kinds of financial challenges: funding the innovation's development and figuring out who will pay how much for the product or service it yields. One problem is the long investment time needed for new drugs or therapies that require FDA approval. While venture capitalists backing an IT start-up may be able to get their money out in two to three years, investors in a biotech firm have to wait ten years even to find out whether a product will be approved for use. Another problem is that many traditional sources of capital aren't familiar with the health care industry, so it's difficult to find investors, let alone investors who can provide helpful guidance to the innovator.

The competing interests of different players aren't always permanent. The AMA and the tort lawyers, bitter foes on malpractice, have lobbied together to allow patients to sue managed care plans.

A frequent source of investor confusion is the health care sector's complex system of payments, or reimbursements, which typically come not from the ultimate consumer but from a third party – the government or a private insurer. This arrangement raises an array of issues. Most obviously, insurers must approve a new product or service, and its pricing, before they will pay. And their perception of a product's value, which determines the level of reimbursement, may differ from patients'. Furthermore, insurers may disagree. Medicare, whose relationships with its enrollees sometimes last decades, may see far more value in an innovation with a long-term cost impact, such as an obesity reduction treatment or an expensive diagnostic test, than would a commercial insurer, which typically sees an annual 20% turnover. An additional complication: Innovations need to appeal to doctors, who are in a position to recommend new products to patients, and doctors' opinions differ. From a financial perspective, a physician who is paid a flat salary by a health maintenance organization may be less interested in, say, performing a procedure to implant a monitoring device than would a doctor who is paid a fee for such services.

Policy. Government regulation of health care can sometimes aid innovation ("orphan drug" laws provide incentives to companies that develop treatments for rare diseases) and sometimes hinder it (recent legislation in the United States placed a moratorium on the opening of new specialty hospitals that focus on certain surgical procedures). Thus, it is important for innovators to understand the extensive network of regulations that may affect a particular innovation and how and by whom those rules are enacted, modified, and applied. For instance, officials know they will be punished by the public and politicians more for underregulating – approving a harmful drug, say – than for tightening the approval process, even if doing so delays a useful innovation.

A company with a new health care idea should also be aware that regulators, to demonstrate their value to the public, may ripple their muscles occasionally by tightly interpreting ambiguous rules or punishing a hapless innovator.

Technology. As medical technology evolves, understanding how and when

Regina E. Herzlinger (rherzlinger@hbs.edu) is the Nancy R. McPherson Professor of Business Administration at Harvard Business School in Boston. She is the author of "Let's Put Consumers in Charge of Health Care" (HBR July 2002) and the editor of Consumer-Driven Health Care: Implications for Providers, Payers, and Policymakers *(Jossey-Bass, 2004). She has written numerous Harvard Business School case studies on health care innovation, which she teaches in her course "Innovating in Health Care."*

to adopt or invest in it is critically important. Move too early, and the infrastructure needed to support the innovation may not yet be in place; wait too long, and the time to gain competitive advantage may have passed.

Keep in mind that competition exists not only within each technology–among drugs aimed at a disease category, for example–but also across different technologies. The polio vaccine eventually eliminated the need for drugs, devices, and services that had been used to treat the disease, just as kidney transplants have reduced the need for dialysis. Conversely, the discovery of an effective molecular diagnostic method for a disease such as Alzheimer's would greatly enhance the demand for therapeutic drugs and devices.

Customers. The empowered and engaged consumers of health care – the passive "patient" increasingly seems an anachronistic term – are a force to be reckoned with in all three types of health care innovation. Sick people and their families join disease associations such as the American Cancer Society that lobby for research funds. Interest groups, such as the elderly, advocate increased funding for their health care needs through powerful organizations such as AARP. Those who suffer from various ailments pressure health care providers for access to drugs, diagnostics, services, and devices they consider effective.

What's more, consumers spend tremendous sums out of their own pockets on health care services–for example, an estimated $40 billion on complementary medicine such as acupuncture and meditation–that many traditional medical providers believe to be of dubious value. Armed with information gleaned from the Internet, such consumers disregard medical advice they don't agree with, choosing, for example, to shun certain drugs doctors have prescribed. A company that recognizes and leverages consumers' growing sense of empowerment, and actual power, can greatly enhance the adoption of an innovation.

Accountability. Increasingly, empowered consumers and cost-pressured payers are demanding accountability from health care innovators. For instance, they require that technology innovators show cost-effectiveness and long-term safety, in addition to fulfilling the shorter-term efficacy and safety requirements of regulatory agencies. In the United States, the numerous industry organizations that have been created to meet these demands haven't fully succeeded in doing so. For example, a study found that the accreditation of hospitals by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), an industry-dominated group, had scant correlation with mortality rates.

One reason for the limited success of these agencies is that they typically focus on process rather than on output, looking, say, not at improvements in patient health but at whether a provider has followed a treatment process. However well intentioned, these bodies usually aren't neutral auditors focused on the consumer but rather are extensions of the industries they regulate. For instance, JCAHO and the National Committee for Quality Assurance, the agencies primarily responsible for monitoring compliance with standards in the hospital and insurance sectors, are overseen mainly by the firms in those industries.

But whether the agents of accountability are effective or not, health care innovators must do everything possible to try to address their often opaque demands. Otherwise, innovating companies face the prospect of a forceful backlash from industry monitors or the public.

Six Forces That Can Drive Innovation – Or Kill It

Players
The friends and foes lurking in the health care system that can destroy or bolster an innovation's chance of success.

Funding
The processes for generating revenue and acquiring capital, both of which differ from those in most other industries.

Policy
The regulations that pervade the industry, because incompetent or fraudulent suppliers can do irreversible human damage.

Technology
The foundation for advances in treatment and for innovations that can make health care delivery more efficient and convenient.

Customers
The increasingly engaged consumers of health care, for whom the passive term "patient" seems outdated.

Accountability
The demand from vigilant consumers and cost-pressured payers that innovative health care products be not only safe and effective but also cost-effective relative to competing products.

The Barriers to Innovation

Unless the six forces are acknowledged and managed intelligently, any of them can create obstacles to innovation in each of the three areas.

In consumer-focused innovation. The existence of hostile industry *players* or the absence of helpful ones can hinder consumer-focused innovation. Status quo organizations tend to view such innovation as a direct threat to their power. For example, many physicians resent direct-to-consumer pharmaceutical advertising or for-profit attempts to provide health care in convenient locations, such as shopping malls, and use their influence to resist such moves. Conversely, companies' attempts to reach consumers with new products or services are often thwarted by a lack of developed consumer marketing and distribution channels in the health care sector as well as a lack of intermediaries, such as distributors, who would make the channels work. Opponents of consumer-focused innovation may try to influence public *policy,* often by playing on the general bias against for-profit ventures in health care or by arguing that a new type of service, such as a facility specializing in one disease, will cherry-pick the most profitable customers and leave the rest to nonprofit hospitals. Innovators must therefore be prepared to respond to those seeking *accountability* for a new product's or new service's cost-effectiveness, efficacy, and safety.

It also can be difficult for innovators to get *funding* for consumer-focused ventures because few traditional health care investors have significant expertise in products and services marketed to and purchased by the consumer. This hints at another financial challenge: Consumers generally aren't used to paying for conventional health care. While they may not blink at the purchase of a $35,000 SUV – or even a medical service not traditionally covered by insurance, such as cosmetic surgery or vitamin supplements–many will hesitate to fork over $1,000 for a medical image. Insurers and other third-party payers also may resist footing the bill for some consumer-focused services – for example, increased diagnostic testing – fearing a further increase in their costs.

These barriers impeded – and ultimately helped kill or drive into the arms of a competitor – two companies that offered innovative health care services directly to consumers. Health Stop was a venture capital–financed chain of conveniently located, no-appointment-needed health care centers in the eastern and midwestern U.S. for patients who were seeking fast medical treatment and did not require hospitalization. Although designed to serve people who had no primary care doctor or who needed treatment on nights and weekends, Health Stop unwittingly found itself competing with local community doctors and nonprofit hospital emergency rooms for business.

Guess who won? The community doctors bad-mouthed Health Stop's quality of care and its faceless corporate ownership, while the hospitals argued in the media that their emergency rooms could not survive without revenue from the relatively healthy patients whom Health Stop targeted. The criticism tarnished the chain in the eyes of some patients. Because Health Stop hadn't fully anticipated this opposition, it hadn't worked in advance with the local physicians and hospitals to resolve problems and to sufficiently document to the medical community the quality of its care. The company's failure to foresee these setbacks was compounded by the lack of health services expertise of its major investor, a venture capital firm that typically bankrolled high-tech startups. Although the chain had more than 100 clinics and generated annual sales of more than $50 million during its heyday, it was never profitable. The business was dissolved after a decade.

HealthAllies, founded as a health care "buying club" in 1999, met a similar fate. By aggregating purchases of medical services not typically covered by insurance – such as orthodontia, in vitro fertilization, and plastic surgery – it hoped to negotiate discounted rates with providers, thereby giving individual customers, who paid a small referral fee, the collective clout of an insurance company. It was a classic do-good, do-well venture, but it failed to flourish.

The main obstacle was the health care industry's absence of marketing and distribution channels for individual consumers. Potential intermediaries weren't sufficiently interested. For many employers, adding this service to the subsidized insurance they already offered employees would have meant new administrative hassles with little benefit. Insurance brokers found the commissions for selling the service – a small percentage of a small referral fee – unattractive, especially as customers were purchasing the right to participate for a one-time medical need rather than renewable policies. Without marketing channels, the company found that its customer acquisition costs were too high. HealthAllies was bought for a modest amount in 2003. UnitedHealth Group, the giant insurance company that took it over, has found ready buyers for the company's service among the many employers it already sells insurance to.

Because insurers tend to analyze their costs in silos, they may resist approving, say, an expensive new heart drug even if it will decrease the company's payments for cardiac-related hospital admissions.

In technology-based innovation. The obstacles to technological innovations are numerous. On the *accountability* front, an innovator faces the complex task of complying with a welter of often murky governmental regulations, which increasingly require companies to show that new products not only do what's claimed, safely, but also are cost-effective relative to competing products.

As for *funding,* the innovator must work with insurers in advance of a launch to see to it that the product will be eligible for reimbursement (usually easier if it's used in treatment than if it's for diagnostic purposes). In seeking this approval, the innovator will typically look for support from industry *players* – physicians, hospitals, and an array of powerful intermediaries, including group purchasing organizations, or GPOs, which consolidate the purchasing power of thousands of hospitals. GPOs typically favor suppliers with broad product lines rather than a single innovative product. The intermediaries also include pharmaceutical benefit managers, or PBMs, which create "formularies" for health insurers – that is, the menu of drugs that will be made available at relatively low prices to enrollees.

Innovators must also take into account the economics of insurers and health care providers and the relationships among them. For instance, insurers do not typically pay separately for capital equipment; payments for procedures that use new equipment must cover the capital costs in addition to the hospital's other expenses. So a vendor of a new anesthesia technology must be ready to help its hospital customers obtain additional reimbursement from insurers for the higher costs of the new devices.

Even technologies that unambiguously reduce costs – by substituting capital for labor, say, or shortening the length of a hospital stay – face challenges. Because insurers tend to analyze their costs in silos, they often don't see the link between a reduction in hospital labor costs and the new technology responsible for it; they see only the new costs associated with the technology. For example, insurers may resist approving an expensive new heart drug even if, over the long term, it will decrease their payments for cardiac-related hospital admissions.

Innovators must also take pains to identify the best parties to target for adoption of a new technology and then provide them with complete medical and financial information. Traditionally trained surgeons, for instance, may take a dim view of what are known as minimally invasive surgery, or MIS, techniques, which enable radiologists and other nonsurgeons to perform operations. In the early days of MIS, a spate of articles that could be interpreted as an attempt by surgeons to protect their turf appeared in the *New England Journal of Medicine* claiming the techniques would cause an explosion of unneeded surgeries.

A little-appreciated barrier to technology innovation involves *technology* itself – or, rather, innovators' tendency to be infatuated with their own gadgets and blind to competing ideas. While an innovative product may indeed offer an effective treatment that would save money, particular providers and insurers might, for a variety of reasons, prefer a completely different technology.

One technology-driven medical device firm saw a major product innovation foiled by several such obstacles. The company's product, an instrument for performing noninvasive surgery to correct acid reflux disease, simplified an expensive and complicated operation, enabling gastroenterologists to perform a procedure usually reserved for surgeons. The device would have allowed surgeons to increase the number of acid reflux procedures they performed. But instead of going to the surgeons to get their buy-in, the company targeted only gastroenterologists for training, setting off a turf war. The firm also failed to work out with insurers a means to obtain coverage and payment – it didn't even obtain a new billing code for the device – before marketing the product. Without these reimbursement protocols in place, physicians and hospitals were reluctant to quickly adopt the new procedure.

Perhaps the biggest barrier was the company's failure to consider a formidable but less-than-obvious competing technology, one that involved no surgery at all. It was an approach that might be called the "Tums solution." Antacids like Tums – and, even more effectively, drugs like Pepcid and Zantac, which had recently come off patent – provided some relief and were deemed good enough by many consumers. As a result, the technologically innovative device for noninvasive surgery was adopted very slowly, permitting rival firms to enter the field.

Similarly, a company that developed a cochlear implant for the profoundly deaf was so infatuated with the technology that it didn't foresee opposition from militant segments of the hearing-impaired community that objected to the concept of a technological "fix" for deafness.

In business model innovation. The integration of health care activities – consolidating the practices of independent physicians, say, or integrating the disparate treatments of a particular disease–can lower costs and improve care. But doing this isn't easy. Many management firms that sought to horizontally integrate physician practices are now bankrupt. And specialty facilities designed to vertically integrate the treatment of a particular disease, from prevention to cure, have generally lost money.

As with consumer-focused innovations, ventures that experiment with new business models often face opposition from local hospitals, physicians, and other industry *players* for whom such innovation poses a competitive threat. Powerful community-based providers that might be harmed by a larger or more efficient rival work to undermine the venture, often playing the public *policy* card by raising antitrust concerns or making the most of prejudices or laws against physician-owned businesses.

Nonprofit health services providers cannot easily merge, because they tend to lack the capital to buy one another. While capital is usually available for *funding* for-profit ventures that are based on horizontal consolidation, vertically integrated organizations may encounter greater difficulties in securing investment, because there typically isn't reimbursement for integrated treatment of a disease (think of breast cancer). Instead, payment is piecemeal. Although Duke University Medical Center's specialized congestive heart failure program reduced the average cost of treating patients by $8,600, or about 40%, by improving their outcomes and therefore their hospital admission rates, the facility was penalized by insurers, which pay for care of the sick and not for improving people's health status. The healthier its patients were, the more money Duke lost.

Technology also plays a part in the success or failure of such operations. Without a robust IT infrastructure, an organization won't be able to deliver the promised benefits of integration. This may not be immediately obvious to people in the health care industry, which is near the bottom of the ladder in terms of IT spending and uniform data standards.

Such obstacles contributed to the problems of MedCath, a North Carolina–based for-profit chain of hospitals specializing in cardiac surgical procedures. In each of the 12 markets where it opened in the late 1990s and early 2000s, the company faced resistance from general-purpose hospitals. They argued that instead of offering cheaper care and better outcomes because of its specialized focus (as the company claimed), MedCath was simply skimming the profitable patients. In some cases, local hospitals strong-armed commercial insurers into excluding MedCath from their lists of approved providers, threatening to cut their own ties with the insurers if they failed to blackball MedCath.

The resistance was further fueled by resentment among local doctors toward

MedCath physicians, all of whom were part owners of the chain. The ownership issue also raised problems on another front. Spurred by arguments that conflicts of interest were unavoidable at MedCath and other physician-owned hospitals, Congress in 2003 placed a moratorium on the future growth of such facilities.

Avoiding the Obstacles

Only legislators can remove the barriers to health care innovation that are the result of current laws and regulations (see the sidebar "Prescriptions for Public Policy"). But companies are far from helpless. A few simple steps can position your business to thrive, despite the obstacles. First, recognize the six forces. Next, turn them to your advantage, if possible. If not, work around them, or, if necessary, concede that a particular innovative venture may not be worth pursuing, at least for now.

Companies are far from helpless in the face of obstacles to health care innovation. A few simple steps can position your business to thrive.

MinuteClinic, a Minneapolis-based chain of walk-in clinics located in retail settings such as Target stores, avoided some of the obstacles that hobbled Health Stop in its effort at *consumer-focused innovation.* Like Health Stop, MinuteClinic offers basic health care designed with the needs of cost-conscious and time-pressed consumers in mind. It features short waits and low prices – even lower than Health Stop's, because MinuteClinic treats only a limited set of common ailments (such as strep throat and bladder infections) that don't require expensive equipment. But the big difference is that MinuteClinic hasn't antagonized local physicians. Because care is provided by nurse practitioners, the company doesn't represent a direct competitive threat. Although some doctors have grumbled that nurse practitioners might fail to spot more serious problems, especially in infants, there has been no widespread outcry against MinuteClinic, making the establishment of in-network relationships with major health plans relatively easy.

Medtronic was one of the first makers of implantable heart pacemakers, but over the years, the Minneapolis-based company branched into other medical and surgical devices. The company's success is partly based on its ability to avoid some of the barriers to *technology innovation* that beset the previously mentioned developer of an acid-reflux device. For example, when Medtronic expanded into implantable heart defibrillators, it worked directly with the surgeons who would be implanting them so that the company could identify problems and set procedures. It confirmed the devices' safety and efficacy in clinical trials, which greatly simplified reimbursement approval from insurers. And, of course, there was no effective Tums equivalent as an alternative.

HCA (originally known as Hospital Corporation of America) successfully pioneered a *business model innovation* that allowed it to consolidate the management of dozens of facilities and thereby realize economies of scale unknown in the fragmented health care industry. The national chain – currently 190 hospitals and 200 outpatient centers – succeeded in part because it didn't try to compete head-to-head with politically powerful academic medical centers. Instead, it grew mostly through expansion into underserved communities, where customers were grateful for a local hospital and where doctors welcomed the chance to work in modern facilities. The certainty of reimbursement from insurers and Medicare enabled HCA to borrow heavily for construction, and its access to the equity markets as a public company offered funding that was unavailable to nonprofit hospitals. In the late 1990s, HCA was investigated for Medicare and Medicaid fraud and paid

Prescriptions for Public Policy

In the United States, a few policy changes would jump-start the health care industry's ability to innovate.

Universal coverage. Ensuring that the 46 million or so uninsured people in the U.S. have health insurance would spur innovation by dramatically increasing the size of the market. But is it achievable? Universal coverage is, after all, one of the most contentious political issues of our time. Switzerland offers some possible answers. The country requires people to buy health insurance, subsidizing the sick and those who can't afford coverage. Although the Swiss government constrains the design of benefits, Swiss insurers have greater incentives to respond to consumer needs than do U.S. insurers, which sell primarily to employers or to government-based organizations. Switzerland's excellent health care system costs only 11% of GDP, versus 16% for the United States. More detail on the Swiss experience can be found in an article I coauthored, "Consumer-Driven Health Care: Lessons from Switzerland" (*Journal of the American Medical Association*, September 8, 2004).

A consumer-driven system. Giving U.S. consumers control over their health insurance spending would transform the health insurance market, better aligning consumers' and innovators' interests. We are already seeing this in the case of the increasingly popular low-cost, high-deductible health insurance policies offered by many employers. To create a completely consumer-driven system, we'd need to replace tax laws favoring employer-based insurance with individual tax credits for health insurance spending, thereby prompting the transfer of funds that employers currently spend on employee health insurance to the employees themselves.

Market-based pricing. A system in which insurers set the prices that providers charge consumers is inefficient and a barrier to innovative attempts to integrate health care activities. Think of Duke University Medical Center's innovative congestive heart failure program: The problem has been that the more patients it could successfully treat without lengthy and expensive hospital admissions, the less money it would make in insurance reimbursement. Disincentives to provide lower-cost care are common; making patients healthy usually doesn't pay. And integrating care – offering the medical equivalent of an automobile, rather than a wheel, an engine, and a chassis – typically doesn't have a reimbursement code.

An SEC for health care. In a consumer-driven health care market, how can you shop if you don't know the prices or, more important, the quality of what you're buying? The best mechanism for transparency exists in the financial markets in the form of the U.S. Securities and Exchange Commission. While it has its flaws, the SEC generally ensures that consumers have adequate information by requiring companies to publish financial results that are verified by an independent auditor. In health care, the outcome data of individual providers of care are rarely available, and, when they are, they may be of dubious integrity because they aren't audited by certified, independent professionals.

a settlement of $1.7 billion, the largest fraud settlement in U.S. history. No criminal charges were brought against the company, and some people wondered whether a nonprofit institution would have paid so dearly for its alleged misdeeds. But the publicly traded company weathered the crisis and, with a new management team in place, has continued to perform well.

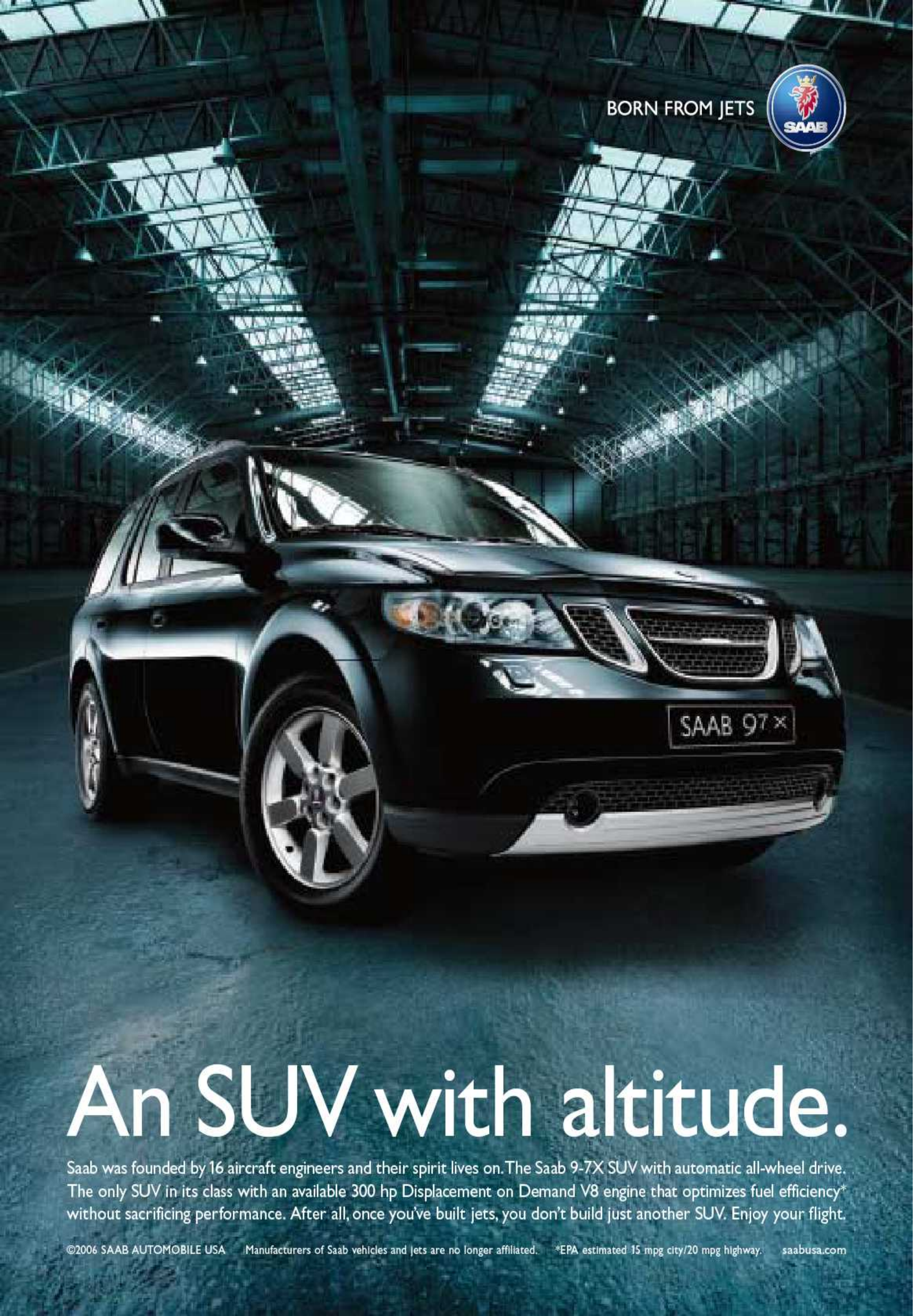
An All-Purpose Treatment

The framework described in this article – the three types of health care innovation and the six forces that affect them – offers a useful way to examine the barriers to innovation in health care systems outside the United States, too. For example, in certain European countries, the government's role as the primary payer for health care has created a different interplay among the six forces.

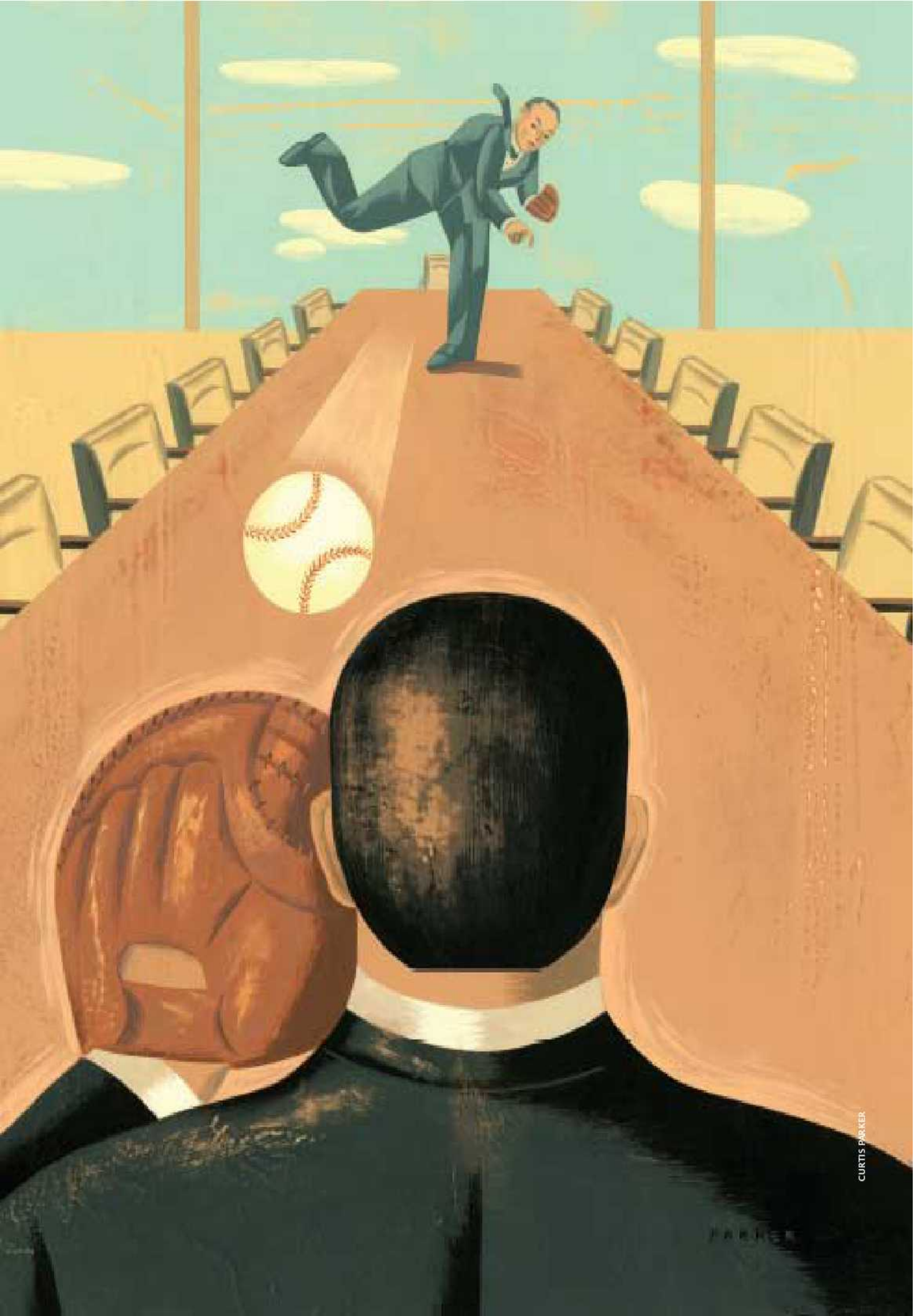
For obvious reasons, the single-payer system hinders customer-focused innovation. But it also seriously constrains technology-based innovation. The government's need to strictly control costs translates into less money to spend on care of the truly sick, who are the target of most technology-based innovation. Consequently, a large venture-capital community hasn't grown up in Europe to fund new health technology ventures. Centralized health care systems, with their buying clout, also keep drug and medical device prices low – delighting consumers but squeezing margins for innovators. The centralized nature of the systems would seem to offer the potential for innovation in the treatment of diseases where a lot of integration is needed, but the record is mixed.

Modified to fit the situation, this framework can also be used to analyze the barriers to innovation in a variety of industries. Cataloging the types of innovation that can add value in particular fields and identifying the forces that aid and undermine those advances can uncover insights on how to treat chronic innovation ills – prescriptions that will make any industry healthier.

Reprint R0605B; HBR OnPoint 4303
To order, see page 159.


BORN FROM JETS
SAAB
SAAB 97X
An SUV with altitude.
Saab was founded by 16 aircraft engineers and their spirit lives on. The Saab 9-7X SUV with automatic all-wheel drive. The only SUV in its class with an available 300 hp Displacement on Demand V8 engine that optimizes fuel efficiency* without sacrificing performance. After all, once you've built jets, you don't build just another SUV. Enjoy your flight.
©2006 SAAB AUTOMOBILE USA
Manufacturers of Saab vehicles and jets are no longer affiliated.
*EPA estimated 15 mpg city/20 mpg highway.
saabusa.com


* this man will live forever.
The next two decades will usher in the biggest wave of retirees in history. Are you ready? IBM Human Capital Management teams are already working with HR leaders on the issue. Some boomers are open to semi-retirement plans; some, like Ed, will have their knowledge extracted and kept forever as a resource (no, it doesn't hurt). Human Capital Management is one of many IBM capabilities that can help you thrive. Want innovation in HR? Talk to the innovator's innovator. Call on IBM. For our paper on the maturing workforce, visit ibm.com/innovation/hcm
what makes you special?
IBM



CURTIS PARKER

SECOND IN COMMAND

THE MISUNDERSTOOD ROLE OF THE CHIEF OPERATING OFFICER

by Nathan Bennett and Stephen A. Miles

When Larry Ellison, founder and CEO of Oracle, and his chief operating officer, Ray Lane, parted ways in 2000, the event inspired the kind of breathless reporting usually reserved for celebrity divorces. Forbes.com reporter David Einstein wondered in print, "Did Lane quit or was he fired?" and wished he had "a clue as to why Ellison's second banana for the past eight years suddenly was cleaning out his office." Soon afterwards, CNET News.com weighed in with this: "The story of Lane's plight at one of the most powerful companies in technology is one of hubris, greed, betrayal and personal epiphany…" Readers were left with two puzzles to sort out. First: why Lane was leaving his position, given what seemed to be an unbroken string of admirable achievements. And second: why the event was wrapped in such drama. Executives change posts all the time, yet the story, with its hints of palace intrigue and titanic clashes, was inherently captivating.

For us, it was another example suggesting that the role of the COO is, well, different. Our research since then has put a finer point on the difference. Through in-depth conversations with dozens of executives who have held the position and with CEOs who have worked with COOs, we've gained insight into a subject that has been largely neglected by organizational scholars. Our discoveries shed light not only on the dramatic executive breakups that intermittently make headlines but also on the successful experiences of many unsung COOs. In this article, we share the success and failure factors we've identified, as well as our analysis of such related questions as: Are there circumstances in which a number two role is particularly useful? Are there situations when it will inevitably produce tension and discord?

Understanding what makes for a successful chief operating officer is vital because the effectiveness of COOs (or ranking operations executives by whatever name they are called) is critical to the fortunes of many companies – and could be to many more. As we will suggest, the second-in-command executive is a role that by rights should become increasingly prevalent. It is prevented from doing so, perhaps, because it is so misunderstood.

A Unique Point of Reference

When you start to examine COOs as a class, one thing immediately becomes clear: There are almost no constants. People with very different backgrounds ascend to the role and succeed in it. This variability makes the job difficult to study; it's hard to know whether you are making proper inferences when comparing one COO with another.

Salespeople or marketers who have developed the tools of their trade in one company can usually apply them to good advantage in another, even in a dramatically different industry. Financial and human resource executives likewise are schooled and practiced in standard ways of doing things. But it's hard to discern whether a COO who has succeeded in one company has what it takes to be COO in another; the skill set is neither generic nor very portable. Even within a single company, the right qualifications for the COO role can shift. Maynard Webb, COO at eBay, described for us the difference between his own technology background and that of his predecessor: "The first COO, Brian Swette, had a job that was nothing like my job.…Brian was a sales and marketing guy. He had the business units reporting directly to him and spent no time on any of my role."

It's difficult to pinpoint the kinds of environments in which COOs thrive. While there is a general sense that COOs are most prevalent in operations-intensive businesses, they appear in every kind of company, and every sector also features firms without them. Moreover, the same organization may sometimes operate with a COO and sometimes without one. A 2003 study by Crist Associates, for example, showed that only 17% of the corporations that promoted a COO to CEO in the previous year had replaced the COO.

Finally, there is no single agreed-upon description of what the job entails or even what it's called. Often, companies turn responsibility for all areas of operations over to the COO – this typically includes production, marketing and sales, and research and development. In some firms, the job is to be Mr. Inside to the CEO's Mr. Outside. In others, the mission is focused on a specific business need. For example, last summer Microsoft filled the long-vacant position of COO with Kevin Turner from Wal-Mart. In announcing his appointment, the company stated that Turner was expected to use his retail experience to lead Microsoft's effort to grow the consumer products business. The most cursory survey of COO job designs shows real disparity in spans of control, decision rights, reporting structures, and the like.

How can a title accommodate such diversity and still be meaningful? Answering that question requires a shift in perspective. The key is in the orientation of the role. While other jobs are primarily defined in relation to the work to be done and the structure of the organization, the COO's role is defined in relation to the CEO as an individual.

As we will explore in the following section, that relationship can take various forms. In many cases, the COO is there to help make the CEO's vision a reality. Sometimes, the COO is expected to make the CEO more effective or more complete. Often, the plan is for the COO ultimately to fill the CEO's shoes. But in all of these constructions, the CEO is the magnetic force with which the COO must align. This makes asking the question "What makes a great COO?" akin to asking, "What makes a great candidate for U.S. vice president?" A Southern Baptist? A foreign-policy wonk? A charismatic campaigner? A centrist? It all depends on the other half of the equation, the first name on the ticket. This, then, is why COOs remain mysterious as a class: The role is structurally, strategically, socially, and politically unique – and extraordinarily situational.

Nathan Bennett *(nate.bennett@mgt.gatech.edu) is the senior associate dean and a professor of management in the Business School at Georgia Tech in Atlanta.* ***Stephen A. Miles*** *(smiles@heidrick.com) is a partner in the Leadership Consulting Practice of Heidrick & Struggles also in Atlanta and a coeditor of* Leaders Talk Leadership *(Oxford University Press 2002). The two are the coauthors of* Riding Shotgun: The Role of the COO *(Stanford University Press, forthcoming in 2006), from which this article is adapted.*

Seven Kinds of COO

If the COO role is defined primarily in relation to the CEO, and no two CEOs are exactly alike, does that mean the job simply defies definition? Not quite. What became clear in the course of our research is that the differences among COO roles arise from the different motives behind creating the position in the first place. It turns out there are seven basic reasons why companies decide to hire a COO, and these yield seven roles that COOs can play vis-à-vis their CEOs. Readers will recognize that the seven reasons are not mutually exclusive, though in this initial presentation we treat them as such.

The executor. One role of a COO is to lead the execution of strategies developed by the top management team. It's simply a concession to the complexity and scope of the CEO's job today, with its numerous external commitments. Managing large, often global, enterprises sometimes requires two sets of hands; in such cases, the COO typically takes responsibility for delivering results on a day-to-day, quarter-to-quarter basis.

This is why the COO position is nearly ubiquitous in businesses that are operationally intensive, like the airline and automotive industries, as well as in organizations that operate in hypercompetitive and dynamic marketplaces like high-tech firms. At Seagate Technology, for example, CEO Bill Watkins relies on COO David Wickersham to keep the business performing at its peak. It's not that Watkins lacks an execution mind-set himself; in fact, he ascended to his post after excelling as COO to the previous CEO, Stephen Luczo. But the demands of managing an $8 billion vertically integrated disk drive business are substantial. By bringing in a COO to lead and oversee the day-to-day operations, Seagate allows Watkins to focus on the strategic, longer-term challenges the company will face. CEO Watkins is clearly oriented with his "head up" to understand success in the future, whereas COO Wickersham has his "head down," focused on the operational details necessary for success today.

The change agent. Just as Microsoft did when it hired Kevin Turner, some companies name a COO to lead a specific strategic imperative, such as a turnaround, a major organizational change, or a planned rapid expansion. While the mandate is not as broad as the general execution of strategy, the magnitude of the challenge demands that the change-agent COO have a degree of unquestioned authority similar to that of an executor COO. This was, in fact, what led to Ray Lane's arrival at Oracle. Larry Ellison hired Lane from consultancy Booz Allen Hamilton and tasked him with turning around the deeply troubled sales and marketing organizations. His efforts ultimately contributed to a tenfold increase in sales, from $1 billion to more than $10 billion, and a threefold increase in net profits. Similarly, AirTran CEO Joe Leonard recruited COO Robert Fornaro to lead a dramatic turnaround. The company, in Leonard's words, was "running on fumes" and needed dramatic efforts to stave off bankruptcy.

The mentor. Some companies bring a COO on board to mentor a young or inexperienced CEO (often a founder). A rapidly growing entrepreneurial venture might seek an

HOW CAN A TITLE ACCOMMODATE SUCH DIVERSITY AND STILL BE MEANINGFUL? ANSWERING THAT QUESTION REQUIRES A SHIFT IN PERSPECTIVE.

industry veteran with seasoning, wisdom, and a rich network who can develop both the CEO and the emerging business. One could logically hypothesize that as the CEO develops, this COO role might either disappear or be heavily restructured.

By many accounts, this was what prompted the young Michael Dell to hire Mort Topfer in 1994. Dell was growing at a pace that threatened to get ahead of its founder's managerial experience. Michael Dell was self-aware enough to acknowledge that he needed some seasoned executives around, both to capitalize on the market opportunity and to accelerate his own development as a leader. Topfer was in his mid-fifties at the time and was completing a successful career at Motorola. He clearly had no aspirations of becoming the chief executive officer at Dell – he was there to help the 29-year-old Michael. We've seen very similar arrangements at Netscape, where James Barksdale has served as mentor to cofounder Marc Andreessen, and at Google, where Eric Schmidt was recruited to support the cofounders, Larry Page and Sergey Brin.

The other half. A company may bring in a COO not as a mentor, but as a foil, to complement the CEO's experience, style, knowledge base, or penchants. Observers have viewed the relationships between Bill Gates and two of his previous COOs, Jon Shirley and Michael Hallman, in this light. Jon Shirley, according to one observer, provided a "calm, self-effacing balance" to Gates's brilliant and often intimidating affect. In such cases, the COO role is usually not meant to lead to a higher position – but sometimes it is. When Ken Freeman, now a managing director of Kohlberg Kravis Roberts, was CEO at Corning spin-off Quest Diagnostics, he deliberately sought an heir with a different collection of skills than his. He ultimately hired Surya Mohapatra just when Quest was closing a deal to acquire another large testing business. "I thought, in a company that was going from $1.5 billion in revenues to $3.2 billion," he explained to us, "it would be helpful to have somebody around that had strong health care experience – especially given that I had grown up in the glass business!"

The partner. Sometimes, the CEO is simply the kind of person who works best with a partner. This can lead to what's been called a "two in a box" model and is similar to what authors David Heenan and Warren Bennis have termed "co-leadership." Indeed, Heenan and Bennis contend that more companies should create and cultivate co-leadership arrangements. But it's probably true that, just as there are doubles specialists in tennis, only some executives are more effective when paired. In any case, Michael Dell and Kevin Rollins, whom Dell introduced as COO in 1996, seem to operate in this mode. Dell, as chairman, and Rollins, now as CEO, are committed to leading the firm together, even choosing to "co-office" in adjoining work spaces separated by only a glass partition.

The heir apparent. In many cases, the primary reason to establish a COO position is to groom – or test – a company's CEO-elect. The broad purview of the job allows an heir apparent to learn the whole company: its business, environment, and people. Recent examples of firms using the COO position to develop the successor to the CEO include Continental Airlines, where CEO Gordon Bethune (who himself originally joined the airline as COO) recently passed the torch to his COO, Larry Kellner. Similarly, in the time after Rex Tillerson was appointed to the number two position at Exxon, observers noted that he was increasingly exposed to the public – a deliberate effort to facilitate his succession to CEO Lee Raymond. And when Norfolk Southern appointed Charles Moorman as second in command, the transportation company touted him as the heir, continuing its avowed "practice of picking an executive young enough to lead the company for at least a decade."

Certainly, being identified as a likely heir does not represent anything approaching a guarantee. On the one hand, an otherwise valuable senior executive may leave if the top job ultimately goes to someone else – or isn't offered soon enough. On the other hand, the COO's performance can indicate that the heir title was inappropriately or prematurely bestowed. In the past few years, we've seen several prominent COOs who seemed to be on the glide path to the CEO's office instead leave their companies; they include John Brock (Cadbury Schweppes), Mike Zafirovski (Motorola), John Walter (AT&T), and Robert Willumstad (Citigroup). Regardless of whether each left because he was passed over for the CEO position, because the timing was not as advertised, or because he found greener pastures, the succession plan unraveled.

The MVP. Finally, some companies offer the job of COO as a promotion to an executive considered too valuable to lose, particularly to a competitor. This appears to have been the case at News Corporation's Fox Entertainment Group subsidiary. It recently announced that its president and COO, Peter Chernin, had signed a new employment agreement preventing a rumored move to rival Disney. Similarly, when McDonald's restructured the roles of its U.S. and Europe presidents during the summer of 2004, that was interpreted by analysts as an effort to ward off poachers. With this strategy, an organization may try to hedge its bets by stopping short of identifying a specific heir or setting a timetable for leadership succession, in an effort to keep its high-potential executives intrigued about what the future might hold for them, should they stay on board.

Elusive Lessons

In truth, as we've said, the seven roles are not mutually exclusive. Though it's hard to imagine a single person wearing several of these hats all at once, it's quite possible that a COO could wear two of them simultaneously. Understanding the roles distinctly, however, and considering their differences reveals a few things clearly.

First, the typology we've outlined makes it easy to see why COOs have been hard to investigate in any scientific sense. Even where studies have been done, it's often impossible to draw useful lessons from them. For example, one of the few empirical examinations of the role was conducted by Donald Hambrick of Penn State and Albert Cannella, Jr., when he was at Texas A&M. As they reported in the October 2004 issue of *Strategic Management Journal,* a review of ten years of data on 400 companies showed that firms with a CEO-COO structure had underperformed relative to their industry peers. It's a provocative finding, but its implications are far from apparent. Is the structure itself to blame? Or was a COO hired to compensate for a weak CEO? Put another way, is the COO part of the problem or part of the solution? Hambrick and Cannella offered both explanations, and other theories could be constructed. Our work suggests that divining answers from such broad surveys is inherently difficult because the nature of the COO job is so deeply contextual.

Second, knowing the variety of roles that COOs play sheds light on the phenomenon of the "vanishing COO." Some observers, counting the instances of companies declining to fill vacated COO spots, have concluded that the position is headed for extinction. After a COO departs, it often appears that his or her duties have been divided up among top managers without much disruption. When Steve Heyer left Coca-Cola, his responsibilities were dispersed in this fashion, and the position was not filled. When COO Gary Daichendt left Nortel Networks (after just three months), his tasks were assumed by the then

"ASKING WHAT MAKES A GREAT COO?" IS AKIN TO ASKING, "WHAT MAKES A GREAT CANDIDATE FOR U.S. VICE PRESIDENT?"

CEO, Bill Owens. But the job is oftentimes reinstated or created in a company that didn't use it before. At Microsoft, for example, rumors of the COO job's death turned out to have been exaggerated. Although it sat idle for several years after Rick Belluzzo's departure, it was revived when Kevin Turner was hired.

Finally, the tremendous variation in COO roles and responsibilities manifestly implies that there is no standard set of "great COO" attributes. This makes finding suitable candidates difficult for executive recruiters (as one of the authors can attest). More important, it stymies the CEOs and boards who must select among the candidates. The existence of seven different roles suggests at least seven different sets of attributes on top of the basic – and infinitely variable – requirement that there exist a personal chemistry between the COO and the current CEO.

The Underpinnings of Success

Even though the role is so contingent, we have identified some success factors that came up consistently in our interviews with executives in widely varying situations. The single element most critical to the success of a CEO-COO pairing, we quickly saw, is the level of trust between the two individuals. To speak of trust is almost a cliché, but the vehemence with which our research participants stressed it suggests they consider it more crucial here than in any other business relationship. Wendell Weeks, who rose from COO to CEO at Corning, referred to the need for a "true partnership, in every sense of the word." The trust has to be absolute, he said, "because there are those in the organization who are always seeking to drive wedges if they can." Other executives specifically used the metaphor of having one another's back. Hearing their comments, we were reminded of Harry Levinson's insightful 1993 article, "Between CEO and COO," in the *Academy of Management Executive.* In it, he wrote, "The relationship…is fraught with many psychological complexities. Perhaps it is the most difficult of all organizational working relationships because more than others, it is a balancing act on the threshold of power." Levinson went on to explore the dysfunctions that can arise in such situations: unhealthy rivalries, defensiveness, overcontrol, rigidity, misconceptions, and doubt.

How can a pair of executives get past such perils and develop an extraordinary level of trust? Again, consistent themes in our interviews suggest the answer. The CEO must feel certain that the COO shares the vision, is not gunning for the top spot, and can get the job done. Conversely, the COO must be sure that the CEO will provide whatever is needed to do the job, will not put any obstacles in the way, and will not thwart future career advancement. Let's explore this question more fully, framing it in terms of what each party owes the other.

What the COO Owes the CEO

True respect. Because a chief executive relies so heavily on the second in command to accomplish mission-critical goals, it's essential that the COO wholeheartedly believe in the CEO's strategic leadership. Chief operating officers, by virtue of their inherent talents and their organizational position, are highly visible and powerful. If the COO is not aligned with the CEO's vision, or not convinced that the CEO can find the best path forward, then that lieutenant is capable of real mischief. Dan Rosensweig, COO at Yahoo, described for us the hours he spent talking with CEO Terry Semel before joining the company. Rosensweig invested the time because, in his words, "you have to get in sync with the CEO. If you have an agenda that is different than his or hers, you will absolutely fail the company."

An ego in check. In the interviews we conducted – particularly those with COOs – we heard repeatedly how critical it is for seconds in command to check their egos at the door. It's a tricky balance to achieve, given that COOs must obviously be self-confident leaders. "You have to lead while serving," stressed eBay COO Maynard Webb, immediately adding, "It has been the hardest job that I have ever done." Interestingly, he then followed up with another reason why the job is hard: "It is not as immediate with gratification as any of the line jobs that I had.

When you are solving technology issues, such as is the site up or not, it is pretty black-and-white, and you see some of the results pretty quickly. But you are working on things through a lot more layers as COO, and the results come much slower." These sound like two very different reasons for a job to be hard, but we suspect they may be intertwined. Often, the results do come more slowly – and often they come in a way that makes their proper attribution more difficult to discern. Regardless, the COO is not necessarily in line to receive the kudos for a job well done.

An eye on execution. Back in the 1990s, people in organizations jokingly picked up on a phrase from the television series *Star Trek: The Next Generation.* In it, starship captain Jean-Luc Picard, having settled on a course of action, would simply instruct his crew to "make it so." CEOs in general can't quite get away with that, but to the extent that they are focused on strategy, they rely on COOs to oversee much of the implementation. They must be able to trust that they can afford to address longer-term and bigger picture issues because their second in command will maintain a focus on the here and now. Even COOs who are not primarily playing the executor role should have an execution mind-set and a bias toward action.

Coaching and coordination skills. A COO must be able to direct and coach others throughout the business. Steven Reinemund, now chairman and CEO at PepsiCo, gave us his thoughts on the challenge. He was promoted to COO after having led a business unit and, he told us, "I had to think long and hard about whether I really wanted to move out of running the day-to-day business into a role where I coach and coordinate." Being a division president, he explained, "is a hands-on job. You get to mold the strategy; you get to direct the efforts every day. You have the functional people that you work with, and that team performs against a mission, and it is an exciting experience." The COO job, by contrast, requires an individual who "can step out of doing day-to-day, hands-on directing and leading of a business, and direct and teach and coach others." Again, regardless of which of the seven roles a COO plays, the CEO must be able to trust that these skills are in place.

What the CEO Owes the COO

Communication. The COOs we spoke with understood that the onus was on them to embrace the CEO's strategy and work to make it real. But no one can execute against a plan that's not being communicated clearly and directly. CEOs constantly have fresh thoughts with operational implications; they must be in the habit of discussing those with their COOs without delay. Ken Freeman told us how he and Surya Mohapatra kept the lines of communication active at Quest Diagnostics. "Sunday at 4:00 PM became the time for us to have lengthy discussions....We would see each other at the office, too, of course, but there we would be scurrying around working on the integration of the [merged] companies, driving the company's performance, and making things go. We had each other's undivided attention via telephone starting at 4:00, virtually every single Sunday for five years." Another CEO we interviewed admitted an early mistake: locating his new COO's office in a separate building, thereby failing to capitalize on the rich communication afforded by physical proximity.

Clear decision rights. To a person, the executives we interviewed stressed the need for explicit and reasonable lines of demarcation between CEO and COO responsibilities. While there was no consensus on what exactly should be part of each job, everyone agreed that the matter had to be sorted out at the start of the relationship. It's far easier to delineate boundaries when the two individuals clearly have complementary competencies and each naturally gravitates to different areas of expertise. The greater the overlap in competencies, the greater the likelihood that the COO might feel (perhaps accurately) that the CEO is micromanaging and second-guessing decisions. Such behavior on the part of the CEO communicates to the COO a lack of trust that is likely to engender friction in the relationship. When we raised this point with Bob Herbold, another former COO at Microsoft, he responded: "To me, this is a key issue. The way it gets worked out is the individuals – through trial and error, as well as through discussions – figure out who is going to be doing what and who needs to check with who on key decisions....How the pair will make that happen needs to be agreed to very early in the relationship."

A lock on the back door. Obviously, the creation of the COO role adds a layer of management; executives who previously had direct access to the CEO now have an intermediary to address. One of the COO's first challenges is to develop relationships with direct reports that discourage them from seeking backdoor access to the CEO. At the same time, the COO must depend on the CEO to block efforts by those who might want to circumvent the position. This is not to say that restricting access to the CEO is the goal. Ed Zander, now CEO of Motorola, previously served as COO of Sun Microsystems under Scott McNealy. Zander says the two made it clear that any of the COO's direct reports was entitled to go to McNealy to talk about things. But the lines of responsibility were still respected. "One thing that Scott did very well was to never undermine me," Zander told us. "He always backed all my decisions. He would hear people out but then send them to me."

A number of the people we interviewed noted how much personal discipline is required on the CEO's part to maintain this kind of line. "I have been working on nailing that back door shut for a while," eBay COO Webb told us. "I think it is a tough, tough thing to do, especially when

CEOs CONSTANTLY HAVE FRESH THOUGHTS WITH OPERATIONAL IMPLICATIONS; THEY MUST BE IN THE HABIT OF DISCUSSING THOSE WITH THEIR COOs WITHOUT DELAY.

you have a CEO that actually loves to get involved in problem solving and wants to help. I think what you have to do in that case is to enable, not control, communication and be transparent."

A shared spotlight. Without exception, the COOs we interviewed accepted the fact that their job was to make the CEO successful – and that in doing so they in many ways rendered their own contributions less visible. But, especially for COOs who aspire to the top job, that creates a dilemma. Jim Donald, president and CEO of Starbucks, noted that what gets executives to the role of president and COO "won't necessarily earn them a CEO role. Once you are in the COO role, you have to…broaden the network of things you do. You need to work with the board, work with the CEO, and work to lead others to be successful."

It falls upon the CEO's shoulders to make sure that this development takes place and to share the spotlight whenever appropriate. If the CEO is not deliberate about this, then the board will have no reason to be impressed by the number two, who may then prove ultimately unpromotable. Kevin Sharer, who was COO at Amgen before he became CEO, lays heavy emphasis on this point. He told us that the success of the CEO-COO relationship is "75% dependent on a few things that the CEO does." He framed those things for us as a series of important questions:

> Does the CEO give the number two real authority, real operating responsibility, power that is real, power that is seen by the rest of the company as real? Second, does the number one actually encourage and let the number two person have his or her own voice in board meetings and operating reviews? Third, does the CEO give coaching, counseling, and really see the success of the number two as part of the company's success?

A Role on the Rise?

Ask anyone who has worked as or alongside a COO – the job is demanding. Now we know it's unique, as well. Perhaps that's why COO is the only C-suite title to which there is no magazine devoted. It's a trivial observation but perhaps a telling one; the common set of issues and interests that would imply simply does not exist.

Is it a role in decline? Some observers, as we have said, certainly think so. The Hambrick and Cannella study, for example, found a 22% decline over ten years in the number of firms with executives holding that title. Yet in the last few years, companies in a wide range of industries have announced new COOs, including Microsoft, RadioShack, Airbus, Allstate, KPMG's U.S. subsidiary, Alcatel, Chiron, Nissan, BellSouth, Comcast, Eli Lilly, Apple, and Medtronic.

We can easily argue that there is a growing need for the role. First, consider the widening scope of the CEO's job. Today, we have bigger companies, with expanding global operations, aggressively pursuing acquisitions. CEOs are asked to be public figures, communicating with many constituencies at the same time that increasingly democratic and knowledge-based organizations require them to spend a great deal of time campaigning internally for any change they hope to make. Second, companies are becoming more deliberate about succession planning. Boards are anxious to identify and groom heirs and often see the COO title as a useful step in the process. Finally, the easy mobility of top talent means companies must find ways to hold on to their most valuable non-CEO executives. The COO title can be effective in staving off wanderlust.

In light of these trends, it's surprising that COOs are not more common. Our suspicion is that they would be if there were less variability and confusion surrounding the role. Board members aren't sure when the position will add value. Recruiters don't have an obvious pool to tap. CEOs don't know whom to trust. Potential COOs don't know whether the job is right for them. This is why it's vital to build on the work we've outlined here. As we continue to demystify the role of the COO, more companies will benefit from more effective leadership.

Reprint R0605C
To order, see page 159.

For most companies, there's a big difference between the growth markets expect of them and the growth they can deliver through new product development or acquisition. Top managers can close the gap by identifying and populating families of strategic opportunity.

CREATING NEW GROWTH PLATFORMS

BY DONALD L. LAURIE, YVES L. DOZ, AND CLAUDE P. SHEER

SOONER OR LATER, most corporations reach a point where their ability to generate growth internally falls well short of the growth rates expected by the board and CEO and demanded by investors. As the chart "Sustaining Growth Is Hard to Do" shows, companies entering the *Fortune* 50 averaged 9% to 20% growth rates in revenues during the five years prior to entering this elite group and 29% the year they entered – often via a large acquisition. Unfortunately, 93% of these companies never achieved revenue growth levels above 2% again. The equity markets were completely unforgiving: The companies' share prices fell by an average of 61% following these collapses.

MATT DENNIS

To some extent, these businesses have all been victims of their own successes. They were able to sustain high growth rates for a long time because they happened to be in high-growth industries. But once the growth rates of their industries slowed, their business units could no longer deliver the performance investors had come to take for granted. In some cases, organizations tried to kick-start growth at the unit level by extending business models to areas where they did not fit well or by developing business models the companies were unable to operate. More often, companies have resorted to acquisition. But this strategy has had a discouraging track record. Over time, 65% of acquisitions have destroyed more value than they create. As the CEO of one corporation we worked with noted: "We have a history of making wrong purchases, of paying too much, and of ineffective integration that fails to deliver anticipated performance. In the past, instead of adding value, these activities have squeezed out funds required for internal growth." Although acquisition plays an important role in any growth strategy, acquisition cannot substitute for growth.

So where does new growth come from, real, profitable, strategic growth that leverages the corporation's capabilities and know-how? For the past 12 years, Oyster International has been researching and advising companies on this issue. With the support of researchers at Harvard Business School and Insead, and in particular Professor D. Quinn Mills, we instituted a research project titled "The CEO Agenda and Growth." We identified and approached 24 companies that had achieved significant organic growth and interviewed their CEOs, chief strategists, heads of R&D, CFOs, and line managers who had delivered material growth to their companies. We asked these executives and managers the same basic question: "Where does your growth come from?" And we found a consistent pattern in their answers. All the companies grew by creating what we call new growth platforms (NGPs) on which they could build families of products, services, and businesses and extend their capabilities into multiple new domains. The platforms provided a framework in which acquisitions served less as a direct driver of growth and more as a way of acquiring specific capabilities, assets, and market knowledge. These are not small, fledgling ventures that might be funded by a business unit or an encouraging executive. The scale of the platforms is strategic and material to the corporation.

As we shall demonstrate, identifying NGP opportunities calls for executives to challenge conventional wisdom. The companies we studied all had top management teams deeply committed to the idea that NGP innovation was very different from traditional product or service innovation. They set up independent, senior-level units with a standing responsibility to create NGPs, and their CEOs spent as much as 50% of their time working with these units. The payoff has been spectacular and lasting. (The Minneapolis-based medical devices company Medtronic is a case in point. From 1985 to 2004, the company grew revenues at 18% per year, earnings at a CAGR of 20%, and market capitalization at 30% per year.)

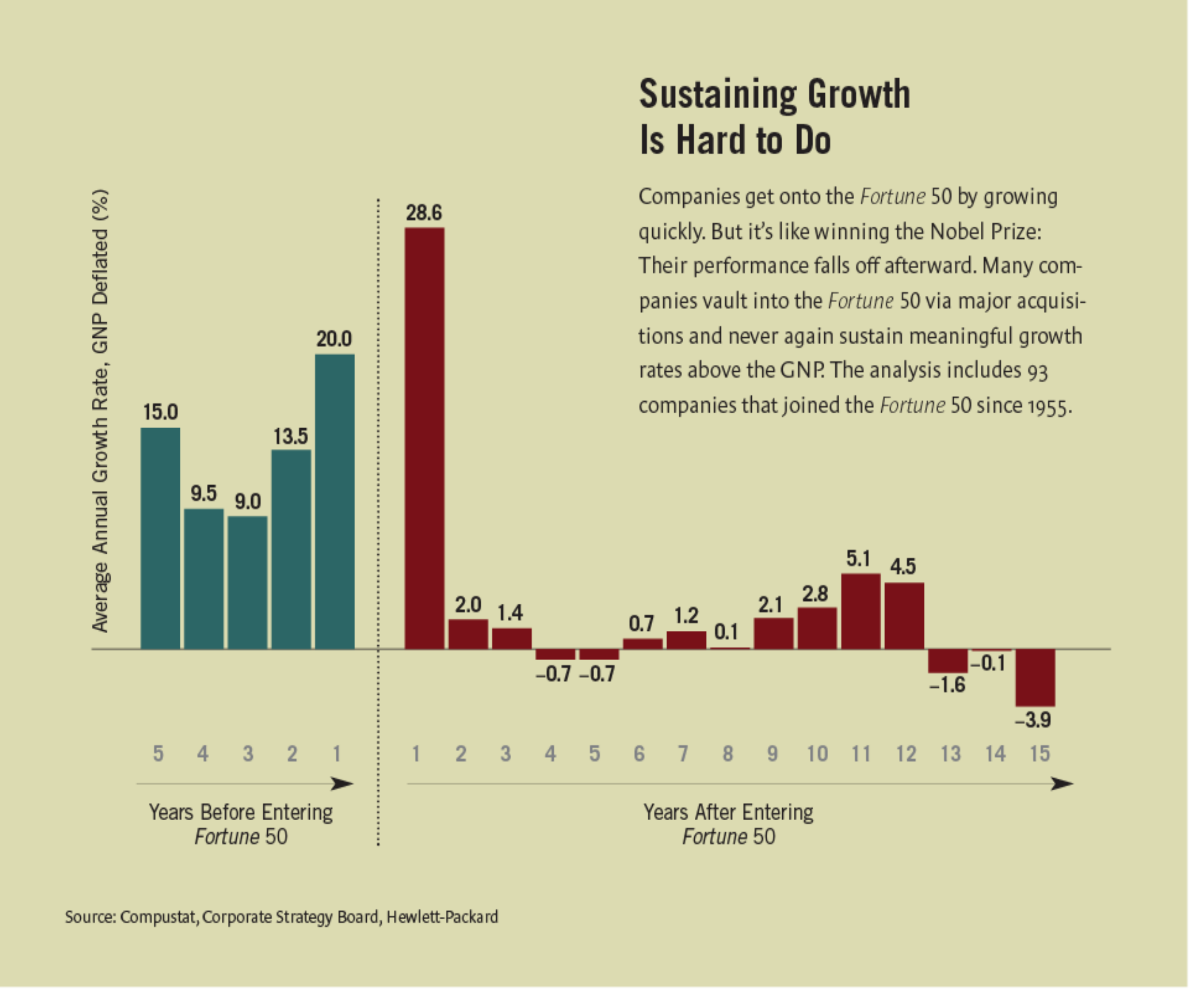
Platforms Are Different

Possibilities for forming new growth platforms arise when forces of change – such as new or converging technologies, changing regulatory environments, or social pressures – create the opportunity to satisfy some unmet or latent customer need. (See the exhibit "What Is a New Growth Platform?") When a corporation identifies a potential NGP, it can assemble the right portfolio of capabilities, business processes, systems, and assets that are required to deliver products and services that satisfy these customer needs.

Some of the capabilities needed for an NGP come from redeploying the talent and technology that the company already has. STMicroelectronics is applying the microfluidics capabilities it developed in working with Hewlett-Packard on ink-jet cartridges to blood-testing equipment for consumer use.

Capabilities can also come from the company's external networks through, for example, technology-licensing agreements and strategic partnerships. Once the company has listed the technologies and other capabilities it can access internally or through its partners, it needs to consider what capabilities it must obtain through acquisition. Inverness Medical Innovations, for example, realized that the intradermal needle technology of Integ, a small company that manufactured blood glucose handsets, could be applied to its diabetes testing products. Inverness purchased the company, identified ten of the 40 employees whose skills recommended them for further work on Inverness's diabetes testing products, and focused them on this work. The remaining 30 employees were let go, and the acquired company was shut down. In other cases, a company may possess a technological capability but will have to acquire the production or distribution assets to exploit it.

__Donald L. Laurie__ (don@oysterinternational.com) is a managing partner at Oyster International, a Boston-based consulting firm focused on leadership and growth. Laurie coauthored "The Work of Leadership" (HBR January 1997). __Yves L. Doz__ (yves.doz@insead.edu) is the Timken Chaired Professor of Global Technology and Innovation at Insead in Fontainebleau, France, and the director of research and education at Oyster International. Doz coauthored two prior HBR articles, most recently "Collaborate with Your Competitors – and Win" (January–February 1989). __Claude P. Sheer__ (claude@oysterinternational.com) is a managing partner at Oyster International.



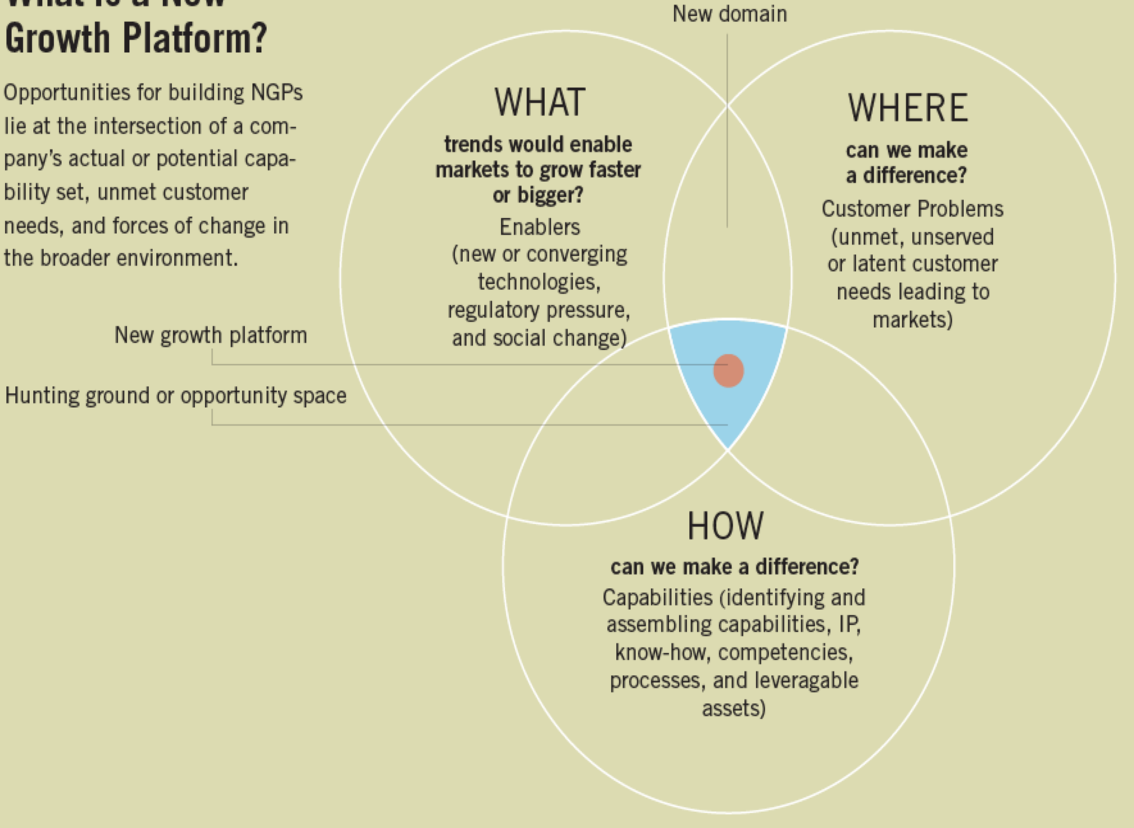
The number of potential platforms that could be developed to satisfy unmet customer needs is usually much larger than most companies realize. In large measure that's because senior managers are used to thinking in terms of developing a particular product or service to beat the competition or acquiring a company to provide a product or service complementary to the existing lines. Managers hardly ever look at their capabilities with a view to creating a whole new family of products or services that meet customer needs that the company has never before addressed. But this approach is precisely what distinguishes the high-growth companies we studied.

That's not to say that the two kinds of innovation are unrelated. Indeed, in the early stages, it can be difficult to see a difference between a new product or service and a new platform. That's because many new platforms start as product or service ideas. The differences in managerial mind-sets become clear as the idea develops. Parcel delivery giant UPS's creation of its Service Parts Logistics (SPL) unit is a good example. Since the early 1900s, UPS has specialized in small-parcel delivery. In the mid-1990s, UPS CEO Oz Nelson realized that the industry was maturing and that UPS and competitors FedEx and the U.S. Postal Service could anticipate only lower (GDP-level) growth rates. He identified a growth gap of $1 billion in revenue and framed the challenges as needs for "new strategic positioning" and "new growth platforms."

To deliver on his challenges, he established an organization of direct reports. He realized that his commitment would be only one of the components necessary for success: "I had always had the attitude of bringing smart, credible people on board. They teach me how to solve the problem; I help them be effective." An NGP group was formed and eventually was led by Mike Eskew, a senior operating executive who would later become the CEO. The group was composed of a team of senior people who had diverse backgrounds, credibility within the organization, and the strength to frame and address issues that cut across business and political interests. One team member had been involved in transforming UPS's IT and communications infrastructure; another had been involved in the start-up and building of the UPS airline. Membership in this group was not a job for up-and-coming middle managers or innovative misfits. It was for mature and

What Is a New Growth Platform?

Opportunities for building NGPs lie at the intersection of a company's actual or potential capability set, unmet customer needs, and forces of change in the broader environment.

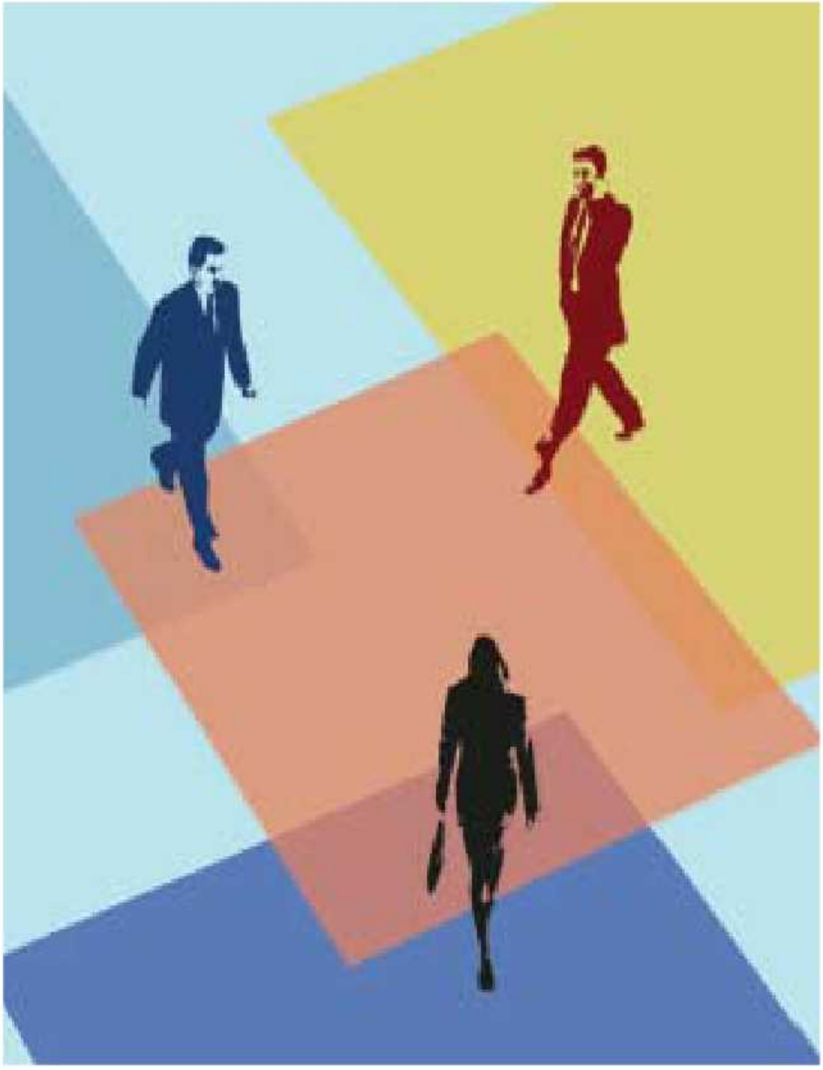


accomplished executives curious and dissatisfied with the status quo.

The team knew that, on a basic level, the company was in the package delivery business, but the team pushed beyond that definition. "Who are we?" the team kept asking. "We know we deliver packages, but we are also a technology company, an airline (the ninth largest airline worldwide), an insurance company, and one of the largest purchasers of railcar capacity in the world." This led to another question: "What are our capabilities, know-how, and assets?" The team concluded that UPS's strengths were its unique market position of providing the physical connection between buyer and seller, as well as operational excellence, network planning, and global infrastructure. Once the team reached that understanding, it started to identify the trends that could shape opportunities in UPS's various market spaces in which the company searched for customers' unmet needs. The group found, for instance, that customers needed to understand and control the flow of goods during transport. The enabler was technology that could globally integrate information, transportation, and payment.

At this point, one of UPS's customers approached the company with a problem. A major PC manufacturer's customer service representatives routinely received calls that required them to send PC boards and chips to users. Initially, the users were satisfied with two-day delivery; then they wanted one-day and then same-day – sometimes within two to four hours. This was challenging: The PC manufacturer managed four shipping locations in the United States, four in Europe, and two in Asia, and the work involved overseeing central stock, field stock, transfer, and returns. The reps simply couldn't manage the various activities and deliver in the reduced demand time, so they turned to UPS.

The team saw that this project represented an opportunity to use existing capabilities to enter a new type of business: managing the flow of goods for UPS customers. So the team met with the PC company to understand the computer industry value chain from customer calls to inventory and logistics management to installation at the customer location. The team identified which activities the PC company wanted to manage and which it was willing to outsource. Out of those conversations the UPS team developed a solution, in the form of SPL (Service Parts Logistics), a unit that would initially operate within UPS's NGP unit. The team engaged in a very systematic stock taking of UPS's portfolio of existing capabilities and



assets as well as those it would have to acquire or otherwise obtain to create SPL. (See the exhibit "Assembling Capabilities at UPS.") The aim was to retain SPL within NGP while it prototyped and market-tested its offering. Once SPL had proved its execution capabilities and reached critical mass, it could be established as a new operating unit or integrated into a UPS core business (in this case, the latter occurred).

As UPS began testing the new service, the team noticed that SPL often had to send several machine parts to solve a problem that customer service couldn't precisely identify. This discovery led UPS to recognize an opportunity: It could use the unused parts that would be returned to inventory, as well as the one replaced part that would be refurbished. Then, through learning from customers and matching UPS capabilities to opportunities, the NGP team evolved further in its thinking about the services UPS could provide. Why not provision parts on behalf of customers from other manufacturers? Or beyond that, why not take over managing inventory for these clients' customer service divisions? UPS realized that it could aggregate components in its supply chain – creating a warehouse in action – to minimize the inventory that its customers had to carry and reduce the steps in the supply chain. In solving one PC company's customer service problem, UPS had developed a highly leveraged industry solution that was relevant for logistics management for every major PC manufacturer.

Once the capabilities of SPL were solid, the NGP team started looking for applications and opportunities to offer the same kind of supply chain management services to other industries with similar issues. The next target was the medical research and health care supplies business, which also needed to quickly transport goods that might be needed on very short notice (for example, blood and tissue samples). Once again, the team carefully inventoried the skills and assets it had for serving this market. That led to the acquisition of Livingston, a company that dealt with Drug Enforcement Agency and FDA regulation and the freezers and vaults required to maintain medical supplies and tissue cultures in transit.

Today, the SPL business has taken a leadership position in the emerging \$3.2 trillion market for outsourced logistics management. Better yet, through the SPL project, UPS has institutionalized the capabilities and skills for identifying and developing opportunities for NGPs, which currently represent a potential \$6 billion per year in profitable revenues.

Platforms as Business Models

UPS is not the only company that explicitly looks for platforms rather than products. Originally, Medtronic was highly focused on pacemakers, but under former CEO Bill George and current CEO Art Collins, it has leveraged its market knowledge and capabilities to establish broad platforms for products assisting in the treatment of cardiovascular, neurological, and spinal diseases, as well as diabetes. Branded consumer goods manufacturer Procter & Gamble has also cottoned on to the platform concept. In 2000, within six months of becoming CEO, A.G. Lafley established FutureWorks, a stand-alone business unit whose charter is to build growth platforms for P&G and search for opportunities between and beyond the scope

Assembling Capabilities at UPS

The critical assembly leading to execution is beyond the scope of normal business activities. Assembling, testing, and building new growth platforms combine large scale, rapid action; frequent change; and the management of highly interdependent activities. In creating what became the Service Parts Logistics unit (SPL), the new growth platform team at UPS systematically took stock of the company's internal capabilities and those UPS could deploy through its external network. That enabled the team to work out what it needed to acquire and integrate groups of networks or partnerships.

Internal		External	
What IP, technology, and know-how do we have?	• Tracking capabilities • Specs from order to delivery and postdelivery analysis	**What can we learn from patent analysis?**	• N/A
What capabilities can we leverage?	• Operations • Network planning • Global infrastructure	**What operating processes must we develop?**	• Corporate venturing • RFID
What operating processes are relevant?	• Pick up • Sort • Pick and pack • Warehouse management and so on	**Where should we seek to establish technology or distribution agreements?**	• Delivery networking • Field-stocking location • Parts returns • Inventory returns
What orphan businesses might we include in the mix?	• Roadnet Technologies • Sonic Air • Inventory Express • IS Repair	**What IP/technology can we in-license (acquire licenses or rights to produce products)?**	• Warehouse management planning • Help desk environment know-how
What staff competencies are missing?	• N/A	**Could a partner support our goals?**	• MIT and ID labs

Acquisition and Integration of Capabilities	
What new technologies, know-how, processes, or capabilities should we acquire and integrate?	• Regional footprint for SPL in Latin America, Asia, and Europe • Health care know-how

of existing business units. Although these and the other companies we studied and worked with differ in specifics, they approach the challenge of platform focus in remarkably consistent ways. Specifically, they:

Put credible chief growth officers in charge. In every successful case we observed, the head of an NGP unit, or chief growth officer (CGO as we called him or her), was a future contender for the CEO position or a unique senior executive with credibility, organizational skill, and a deep interest in opportunities beyond the current mix of businesses. These executives typically had a sense of curiosity, an external focus, and authority to act. UPS's Mike Eskew, as we noted, subsequently became CEO. At Medtronic, physician Glen Nelson was also vice chairman and responsible for research and development, strategy, mergers and acquisitions, corporate venture initiatives, and new business/platform development. One company we worked with looked at three candidates for the job. Two of them were leaders of core business units, and the third was a senior manager who had been president of three venture-backed businesses, the most recent one having been acquired by this company. NGP leaders also had close relationships with their CEOs, which made other executives take more notice of the units. Medtronic's Nelson, and then-COO Collins, were both part of the office of the CEO at Medtronic. Lafley handpicked a young general manager, Dan Rajczak, to lead FutureWorks. Rajczak had worked in Asia when Lafley was running that regional business.

Believe that the team is more important than the idea. Many executives take the view, "Show me a good idea and I will build a team around it." But most, by our count, only see a good idea every few years, and most are not good judges of what they'd need to make it work. That's not to say that plenty of new ideas don't exist. They do, but they are often underdeveloped or unrecognizable as potential successful businesses. To identify and develop them, you cannot rely on the smarts of a single senior executive; you need an organized and empowered team in place. Think back to UPS. A critical point of that story was that Eskew's team was established to develop a pipeline of new growth platforms over time in order to become a long-term strategic partner for growth in areas beyond the scope and reach of the business units. It was not an innovation group established to pursue ideas on an ad hoc basis. Indeed, concurrent with SPL, the team was hard at work conceiving six other platforms, each with a potential comparable to SPL.

The NGP team should consist of three or four senior executives who not only possess a thorough understanding of the company's markets and operations but who are also entrepreneurial and have experience in building new businesses. They should have the ability and authority to make big decisions quickly on major investments such as acquisitions, and they should be able to advise the operating managers they recruit for the individual businesses created on the platform. CEO Ron Zwanziger explains it from an Inverness perspective: "We like people who see the future and make connections. It's an attitude we want throughout the business. We don't want a production manager cutting costs and driving efficiencies that take away the manufacturing flexibility we need as we develop a new platform for the future."

Have NGP units that are independent and embedded. NGP units are both independent from and highly dependent on the corporation's existing businesses, bureaucracy, way of working, and related norms and rules. They have to be independent because looking for NGP opportunities requires a longer performance horizon than a typical business unit has and an ability to step out of an existing business model and culture. When the potential for an Implantable Cardioverter Defibrillator was first recognized at Medtronic, Nelson and Bobby Griffin, president of the pacemaker business unit, knew that, for the technology to be successfully developed and commercialized, it would have to be split off as an independent business unit and led by a high-potential manager. This move allowed the new ICD technology to develop without as much pressure to deliver short-term financial results and without oversight of traditional approaches in the pacemaker organization. It also required a collaborative relationship with the pacemaker unit because much of the technology resided there. As president of both divisions, Griffin could referee and enable functional interaction, resource allocation, and priority setting. At the same time Nelson could use his authority to champion the organization structure and allocation of resources while making certain this small unit received the same level of attention as the larger units by the office of the CEO. "It didn't lack for sunshine," he explained.

Too often, the business unit's priority is to deliver the annual plan, which means increasing productivity; that is, reducing cost while pursuing predictable, iterative growth such as product-line extensions, geographical expansion, and acquisitions of closely related businesses. Today, implantable defibrillators provide 25% of Medtronic's revenues. While a strong measure of freedom is important, an NGP unit must be well embedded in the corporation in order to identify and use existing knowledge, IP, processes, and assets. Although the important strategic thinking capabilities are often resident at corporate headquarters, the comprehensive knowledge about customer problems and how these might be resolved are inevitably embedded deep within the organization in people with full-time day jobs. To tap into talent and information successfully, the unit must be closely tied to and have credibility within the company. It won't take long for experienced operating managers to realize that the support functions (HR, IT, finance, and legal, for instance) that have a mandate to ensure consistency across the business may have difficulty supporting an NGP unit with a significantly different mission.

Guarantee financial independence. Top management needs to ensure that the financing for an NGP unit is not crowded out by the core business-unit demands. Nothing is more soul destroying for a small, dedicated NGP unit than having to put in six to eight weeks a year to competing in the annual budget cycle against business units with budgets in the hundred million- or billion-dollar range. Financial planners looking for savings in the annual budget cycle inevitably challenge the unit's resource requirements: "Can't they use our corporate strategy people rather than have a dedicated person? Can't they wait until they have a platform before we assign an NGP executive to the group? Do they really need a dedicated venture and acquisition person?" And although some business-unit executives see the NGP unit as another horse in the race, others find it threatening to their authority and a waste of resources they believe would be better deployed in established units that know their customers' needs. Typically, therefore, we found that, in successful companies, investment capital – for the unit and the new products or businesses within the new platforms it identified – was separated from the budget and operated as a discretionary enterprise growth fund of some kind. The fund investments were authorized by the investment committee or a representative group within the executive team office. P&G's FutureWorks and the new platform opportunities it identifies are funded by P&G's Corporate Innovation Fund, which is managed by the CEO, CTO, and CFO. Every CEO we know who developed growth platforms describes the initial investment as "peanuts" when compared with the value created. They all recall, however, the agony of early budget debates. In every case, the CEO's personal intervention provided budget air cover during the early years.

Systematize the NGP creation process. Successful NGP companies like UPS, P&G, Medtronic, and Inverness had all systematically defined the processes of NGP creation and the roles of the various participants. The CEO framed the challenge. The executive team selected the CGO, created the unit, established the mission, identified new domains, and took stock of core capabilities. The NGP team shaped the new platforms, identified capabilities to be assembled, and noted potential acquisitions. Together, they determined the roles and way of working with the core business. This careful attention to articulating the process of platform innovation and related activities is important not only for ensuring that NGP creation becomes a continuous activity but also because it builds companywide commitment to the very idea of NGPs. Unless the activities involved in creating platforms are well defined, talented line managers will never buy into the idea that NGP innovation needs to be separate from the incremental innovation that their units already undertake. They need to understand the implications and rules of engagement for cross-unit collaboration and "what this means to me in my area of responsibility."

Leading Platform Growth

Oz Nelson of UPS observes: "If a CEO didn't comment on poor package handling, workers and supervisors might conclude everything must be all right. The same holds true for the long-term future of the company. The CEO needs to believe the work is important, establish business innovation as a priority, take the best people with him, become engrossed in the work, and feel that he will learn and the answers will come."

Nelson's point is that while CEOs do not head up NGP units, their relationships with those units are critical to their success. For a start, at companies that have successfully created NGPs, the CEO has always set and framed the growth challenge. At UPS, Nelson took the lead in identifying the revenue gap between the sum of the business-unit plans and the goals established by the board of directors, CEO, and executive team. That forced the board and other executives to more carefully evaluate and compare different paths to growth. Could they fill the revenue gap by allocating the business units more investment dollars or by acquiring adjacent businesses, or did the company really need new platforms? And if the company needed a unit to develop platforms, what should be its goals and resource needs?

The CEOs of NGP companies always make sure that they and their senior managers spend time with customers. Medtronic's Bill George, for example, would visit hospital laboratories to understand the problems researchers were addressing and explore the potential solutions. To bring customers into the planning process, George changed the format of management review meetings from all-day internal discussions about numbers and performance issues to a one-hour review, which was followed by the

At companies that have successfully created NGPs, the CEO has always set and framed the growth challenge.

When Innovation Fails

In the course of our work and research, we have encountered many companies that explicitly or implicitly recognized that their continued growth depended on their ability to identify and develop new growth platform (NGP) opportunities yet failed in their attempts to do so. We observed a remarkably consistent pattern in these failures and have identified four causes, any and all of which can derail a company attempting to create an NGP group. To some extent, these problems are shared by the new-product initiatives of business units, but NGP units that stand apart from the core business units are especially vulnerable.

Business-unit success. Many business units are attempting to grow earnings faster than revenue. This limits the options and investments in growth as cost reduction is the more immediate and important priority. There will always be tension between investing in new platforms and delivering earnings. Genuine and significant cost reductions should always take place. The challenge is identifying cost reductions that won't affect current and future revenue, the long-term R&D projects that are sometimes the first targets of cost reductions, but such an approach risks depleting the pipeline.

As the business units grow and succeed, they also become more insular and resistant to new ideas both from the corporation and from the outside. They become too busy to share technology and ideas with the company's other business units. There is also the natural resistance to consider potentially disruptive ideas from the outside. As Glen Nelson, formerly the vice chairman of Medtronic explained, the easiest answers to new ideas are, "It won't work," "We tried that before," and so on. It is easy because once we say no, we are not required to commit resources or risk failures, but this will result in inaction rather than action and in missed opportunities.

Opposition from key executives. CEOs should not underestimate how strongly the heads of business units may resent the creation of an independent NGP unit. When the CEO of a multibusiness company we studied told his executive team to launch a cross-business, growth platform initiative, the unit heads immediately started pulling in different directions. One executive indicated he had initiatives going and timing was bad; another wanted to go along but didn't want to disturb the six different but related new business initiatives in four divisions. Passive-aggressive resistance to change was rampant. In the end, the executive team (believe it or not) held the CEO to ransom, and he decided against establishing a separate organization and investment approach to pursue the work. The CEO abandoned his plans and allocated growth goals back to the business units.

Delegation of the work. Even when CEOs see the need for a special unit to focus on major growth projects, they often make the mistake of delegating the work. They preside over the work as authority figures rather than participate as active members of the group. Some corporations believe process inhibits creativity and give considerable freedom and no milestones to corporate mavericks. But, without the benefit of managerial experience, these people often end up spending tens of millions of dollars on overambitious projects that they eventually have to abandon. Other companies make the opposite mistake. They establish innovation initiatives guided by project managers accustomed to delivering projects on budget, on time. Too often, these individuals are neither sufficiently curious nor able to bring a penetrating strategic thought process to the work. The result is order without insight. We have observed many project managers prematurely shut down interesting but underexplored opportunities. More generally, it's a mistake to expect innovations to come from staff accustomed to working within the logic of existing business systems and operating processes. Often the team that is mobilized is made of functional experts applying their expertise to a new problem. But their functional expertise may be less applicable (or even irrelevant) in an emerging and ill-defined market. The source of insight in discovering new platform opportunities is the collective intelligence of the team, not members' individual function, expertise, or contributions.

Failure to sustain commitment. Senior managers always generate high energy and expectations at the outset of a new growth initiative. If you're the boss, that's not hard to do. But unless you remain committed and ensure that the development process is rigorous and orderly, your initiatives will likely flounder. In some companies, innovation initiatives get repeated every three or four years, and talented, high-performing employees with ten, 15, or more years of experience become extremely hesitant to commit to initiatives they view as temporary and peripheral. Even senior managers often discourage promising executives from being involved in initiatives that, given the history, could fail and disrupt their careers. This cynicism and lack of confidence in turn contribute to the probability of failure: The best employees avoid getting involved in the new projects. They recognize that staying in operations and on track for the next promotion really means delivering the annual plan – despite the rhetoric.

Unwitting overconfidence. Corporate executives sometimes misconceive or underestimate the nature of the challenge and conditions required to succeed. Returning on a 40-foot sailboat from Nantucket, one of the authors invited his guest, the former captain of a U.S. Navy nuclear aircraft carrier, to dock the sailboat. "No, thanks," said the Navy captain, "I wouldn't know how to dock this little boat in these high winds and strong currents." Why then, when asked if they can manage new business development, do so many corporate executives reply, "If I can manage big, I can manage small"? Also, many rely on a focus that is opportunistic rather than strategic – pursuing an attractive idea rather than institutionalizing the capabilities that will help them develop and build a stream of new platforms.

management team leaving the office to visit customers. He once told his CFO: "I know you know finance. I want you to understand how doctors use our products with patients – that means you have to spend time in the field."

Most important, the CEO needs to be an active participant in the NGP unit's discussions, not just the person the unit reports to. The best platform CEOs bring insight to frame and reframe the opportunities and mobilize their own personal networks to help the NGP team do the same. As Jim Tobin, CEO of medical device maker Boston Scientific observes: "Fifty percent of my time goes to new platform growth; 50% goes to current operational management. You have to have a maniacal focus on growth," he says. "And I was the Chief Maniac." Tobin claims to understand less than 20% of what he terms "science talk." But his active involvement, experience, and insights have been key factors in the company's success: Since his appointment in 1999, revenues have doubled.

The most common trap for CEOs is to focus on the performance and morale of the large core businesses. Often these businesses are operating in fiercely competitive environments. Many CEOs see themselves as generals responsible for rallying the troops, so they spend a lot of time in the field doing just that. One of the CEOs we followed closely over a six-month period spent no time at all with his company's customers. After half-day business-unit review meetings, he would arrange to meet the next-level managers. It wasn't until we arranged two days of meetings with leading-edge technologists at MIT, Stanford, and the Max Planck Institute that he had any contact with external thought leaders in his industry. Much of his time was taken up by a sector or business unit that was underperforming and, he believed, required his active leadership in the turnaround. In addition, considerable time was devoted to reviewing and approving (or not) potential acquisitions of competitors and adjacent markets. The primary driver in each acquisition decision was the company's ability to achieve operating efficiencies – a necessary but very different line of thought than acquisitions developed in a new growth platform strategy that leverages capabilities. This CEO did establish a growth platform team but found it difficult to explain the work of the group in the context of the corporate vision and mission.

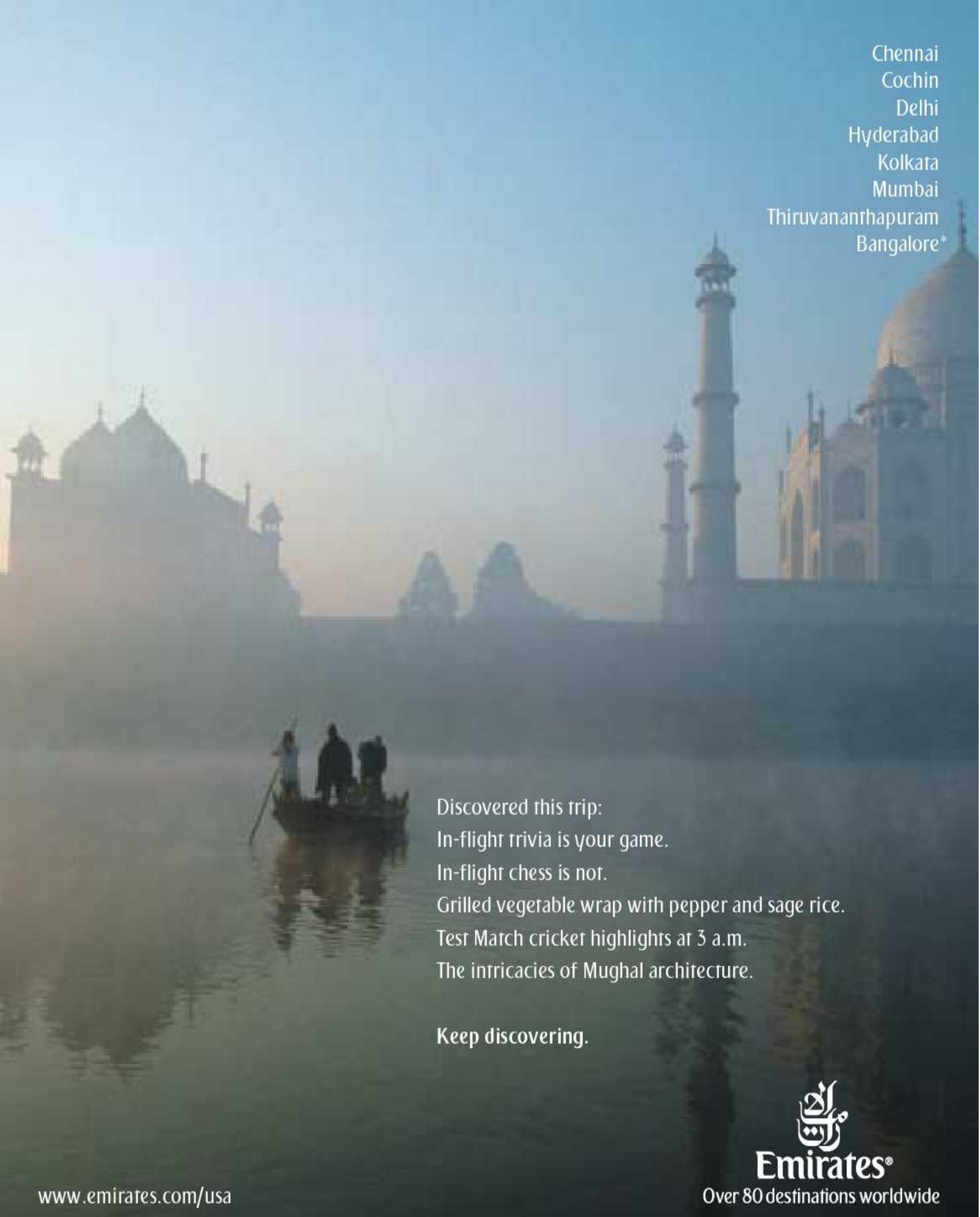
We're not saying that the growth initiatives and performance problems of core business units aren't important. They are. But if CEOs are to be serious about closing the growth gap, they will have to be willing to leave those responsibilities to others. Like Lafley and Tobin, Medtronic's George spent more than 50% of his time on platform-based growth. We asked him whether he would advise CEOs of struggling companies to do the same. Without hesitation, he replied, "Wouldn't it be more important to spend even more time on new-platform growth in that situation? Otherwise, how would you ever get out of the problem?" To free up his time to work with Glen Nelson and the rest of the Medtronic NGP team, Bill George relied heavily on then-COO Art Collins who took on bottom-line responsibility for the operating performance of the five business units. UPS's Oz Nelson similarly relied on his head of operations, Jim Kelly: "He kept me informed about day-to-day performance and major issues. That allowed me to devote about 50% of my time to the development and implementation of UPS's new platform growth opportunities."

The enterprise growth gap is large and growing, and it cannot be closed through periodic innovation initiatives.

• • •

Process-driven companies invest many millions of dollars in HR, supply chain, and other operating processes in the quest for continuous improvement. By contrast, astonishingly little investment and attention goes into processes for developing growth platforms or institutionalizing capabilities. Yet, for many companies, the enterprise growth gap is large and growing, and it cannot be closed through periodic innovation initiatives or incremental improvements to core processes. As a result, their innovations languish at the one-product or single business level and never take on the scale and scope of a platform. Gil Cloyd, chief technology officer of P&G, explains: "Now when we identify a new product opportunity, we examine it through the new platform lens. We are looking for the products, services, or businesses that can be created from this innovation that we had not yet begun to consider. By doing that we accelerate time to market and generate hundreds of millions of dollars in additional revenue."

Reprint R0605D
To order, see page 159.



Fly non-stop twice daily from New York to Dubai and beyond to India.

*Bangalore to launch in October 2006. Book online at www.emirates.com/usa. Contact your local travel agent or Emirates at 800-777-3999. Discover frequent flyer benefits at www.skywards.com

ARE LEADERS PORTABLE?

Stock prices spike when companies hire new CEOs from talent generators like GE, but longer term, these executives may not deliver. Even the best management talent won't transfer unless it maps to the challenges of the new environment.

by Boris Groysberg, Andrew N. McLean, and Nitin Nohria

Is management talent portable? The market certainly seems to think so. When a company hires a CEO from General Electric – widely considered in the United States to be the top executive-training ground – the hiring company's stock price spikes instantly. We studied 20 former GE executives who were appointed chairman, CEO, or CEO designate at other companies between 1989 and 2001, and with only three exceptions, the hiring announcement provoked a positive

AARON GOODMAN

stock-market reaction – an average gain of about $1.1 billion across the group. When, in 2000, Jeffrey Immelt signed on to replace Jack Welch as GE's own CEO, two rivals were almost immediately lured to other companies – James McNerney to 3M, which right away saw its market value increase more than $6.5 billion, and Robert Nardelli to Home Depot, where shareholder value jumped almost $10 billion. Such leaps in stock price reflect a favorable opinion of the way GE develops managers, a bet that GE executives will replicate GE's success, and an assumption that an executive's skills can be readily transferred from one setting to another.

But not all GE alumni deliver on their promise. While Steve Bennett, with more than two decades of GE experience behind him, generated a 60.9% annualized rate of abnormal return (stock returns of a company relative to the returns of a similar group of companies matched by industry, size, and stock volatility) during his first three years at Intuit, Tom Rogers, for instance, produced a –30.2% annualized rate of abnormal return over three years after joining Primedia. Rogers was a 12-year NBC veteran, a star who'd launched GE's cable channels. If managerial skill is transferable, and both executives started with the same top-notch management pedigree, what accounts for the difference? Context.

When a company hires a new executive, it gets a bundle of abilities and experience. Some general management skills such as setting a vision; motivating employees; organizing; budgeting; and monitoring performance have been shown to translate well to new environments. Conventional wisdom holds that a second category of management skills – those specific to a given company, such as knowledge of idiosyncratic processes and management systems – don't transfer as well. Switching employers, it is thought, leads to a short-term decline in a manager's performance until the individual develops new skills specific to the new company. But executives who come from corporations such as GE, known for strong leadership development processes, can be expected to have first-rate skills of the transferable type – general management skills. This assumption accounts for the market reaction.

But our research tells a more complex story. We looked closely at the individual performance of our 20 GE alumni, as well as the needs and strategies of the organizations that hired them. We found that company-specific skills can prove valuable in a new job, under the right circumstances. Our research on GE alumni, as well as other new CEOs who are protagonists in the leadership cases we teach at Harvard Business School, also uncovered several other types of skills and experience that shape performance in one job and may influence performance in a new one, again depending on the circumstances. These other types fall under three headings: *strategic human capital,* or the individual's strategic expertise in cost cutting, growth, or cyclical markets; *industry human capital,* meaning technical and regulatory knowledge unique to an industry; and *relationship human capital,* or the extent to which an individual manager's effectiveness can be attributed to his experience working with colleagues or as part of a team. The advantages conferred by these skills are more likely to transfer to an executive's new role when the new environment is similar to the old. (See the exhibit "Advancing the Theory of Human Capital.")

Even gifted executives with the best and most admired management training don't necessarily make star CEOs.

We focused our research on GE alumni because of the organization's distinctive reputation as a prime source of talent. Other companies – notably, Honeywell (and its predecessors), AT&T, McKinsey, and IBM – are known to be talent generators as well, but only GE sends executives into unrelated industries, and the company is disproportionately represented, year after year, among sitting CEOs in the S&P 500. (See the exhibit "The Class of GE.") Our most recent data show 12 CEOs from GE in 2004, followed by eight from IBM and six each from Honeywell and AT&T. (When a star executive leaves GE, that company's stock price doesn't dip; investors assume that GE is loaded with talent and a single departure won't affect its fortunes.)

Our findings? Even gifted executives with the best and most admired management training don't necessarily make star CEOs. By probing the facts behind such fabled talent, we concluded that companies need to look beyond corporate pedigree when choosing a new leader, and that the type and likely portability of an executive's skills are better indicators of a good match. In this article, we'll

__Boris Groysberg__ (bgroysberg@hbs.edu) is an assistant professor, __Andrew N. McLean__ (amclean@hbs.edu) a research associate, and __Nitin Nohria__ (nnohria@hbs.edu) the Richard P. Chapman Professor of Business Administration at Harvard Business School in Boston.

describe the types of human capital we studied, starting with the most portable – strategic – and moving to the least portable – company specific.

Strategic Human Capital

Not all managers are equally suited to all business situations. The strategic skills required to control costs in the face of fierce price competition are not the same as those required to improve the top line in a rapidly growing business or balance investment against cash flow to survive in a highly cyclical business. Such skills are usually transferable to new environments – and are the most portable type of human capital other than general management skills – but they won't offer an advantage if the strategic needs of the company don't match the manager's skills. When the telecommunications industry was deregulated and challenged by new entrants, for instance, few former Bell System managers were able to successfully transition to the fast-moving, entrepreneurial, growth-oriented environment, despite being seasoned veterans of what was considered one of America's best-managed companies.

By the 1990s, GE's Appliance and Lighting businesses required careful attention to costs given mature industries and highly unionized labor forces. Its Aircraft Engines, Power Systems, Industrial Systems, and Transportation Systems businesses were cyclical and required careful management of capital. GE Capital, Plastics, Medical Systems, and NBC were areas of growth, whether organic or through globalization or acquisitions.

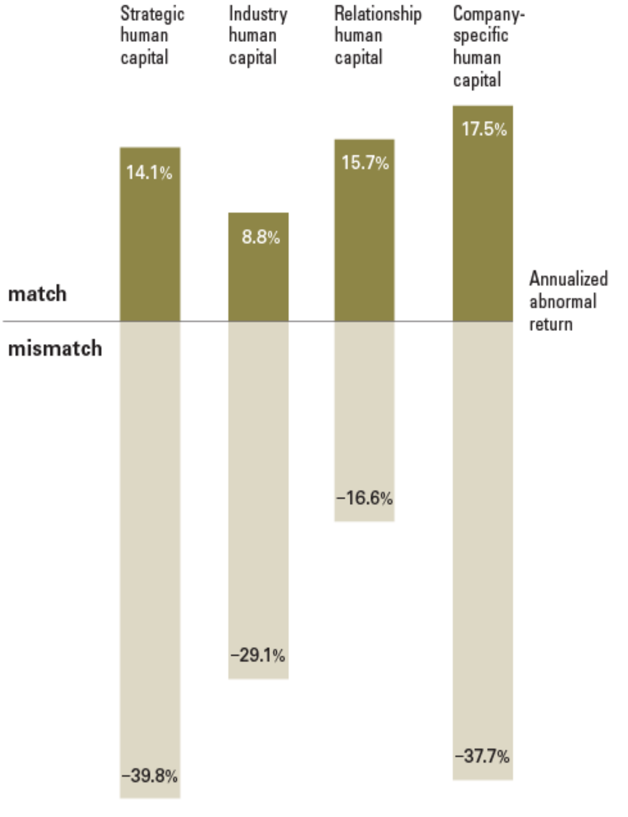
By coding our GE managers' résumés, we were able to determine their strategic skills and categorize these individuals as cost controllers, growers, or cycle managers on the basis of their line management experience at GE. Using S&P industry reports, we then coded the strategic challenges facing each new company the former GE managers were hired into. Nine of the 20 executive transitions we studied involved strategic skill matches, meaning that, for instance, a savvy cost-cutter was hired into a company where cost management would turn out to be the key driver of success. The other 11 constituted mismatches. When the strategic need matched the strategic experience of the hired GE executive, companies saw annualized abnormal returns of 14.1%, while mismatched pairings saw returns of –39.8%. (See the exhibit "The Impact of Fit.")

Consider the experience of Paolo Fresco, whose success spearheading GE's growth into Europe did not follow him when he became chairman of Fiat in 1998. Fiat was not cost competitive, and yet Fresco's attention was diverted by investments in technology and a Web presence, as well as by acquisitions meant to diversify the company's portfolio. After the carmaker slid into a protracted liquidity crisis, Fresco and his board supported a politically explosive plan to divest Fiat's core automobile business; when that was rejected by creditors and shareholders, he resigned in 2003. Consider, too, John Trani, who in 1997 left a long career at GE Plastics for toolmaker and hardware manufacturer Stanley Works. Trani had led GE Plastics through a long period of extraordinary growth. When he joined Stanley Works, the company had emerged from a period of expansion and, with sales flattening, had to shift its focus to cost control, a type of expertise Trani lacked. Three years into his tenure, he delivered a –10% annualized abnormal return.

However, knowing how and where to cut was clearly a plus for Carlos Ghosn, who is not a GE alumnus but is one

The Impact of Fit

The companies our 20 GE executives were hired into did well (or poorly) relative to the market depending on whether the executives' human capital was a good fit with the company. For example, those executives whose strategic skills were a good match with their company's strategy had a high rate of annualized abnormal returns.*



* We computed abnormal returns, a measure of corporate performance, with an asset pricing model widely used in the field of finance. The model controls for four factors: market, size, book-to-market, and price momentum. Thus, a firm's abnormal returns show how well it does in comparison to the market and similar firms. We calculated abnormal returns from day 2 of the new CEO's hire through the next three years of his tenure. We have replicated the analysis using other performance measures and found results that are consistent with those reported here.

ADVANCING THE THEORY OF HUMAN CAPITAL

While the idea of human capital – productive assets in the form of human competencies – was in use well before economist Gary Becker began his Nobel Prize–winning research, he was the first to bring the rigor of economic modeling to the use and development of human capital. One of the most influential concepts in Becker's work is the distinction between firm-specific knowledge, which is useful at only one company, and general knowledge, which is useful in other companies as well. Investment in general human capital raises workers' productivity in many companies, he concluded, whereas firm-specific training increases the value of workers to only one company.

Our study builds on Becker's theory but suggests that human capital is better conceived as a portfolio of different skills and assets, some of which are more portable than others, though all can to some extent create value in a new job. Listed from most portable to least, we have identified five types of human capital.

Portfolio Model of Human Capital

OFTEN PORTABLE

General management human capital encompasses the management skills to gather, cultivate, and deploy financial, technical, and human resources. It includes leadership and decision-making capabilities as well as functional expertise. While this skill type is highly portable, executives must develop new general management human capital, such as interacting with investors and Wall Street as well as with boards, when they become CEOs or, more generally, when they take on any new job with expanded responsibilities.

Strategic human capital is expertise gained from experience in situations that require specific strategic skills such as cutting costs, driving growth, or maneuvering in cyclical markets. This type of human capital is highly portable to firms facing similar strategic challenges; experience in a growth environment, for instance, tends to translate well to other such environments.

Industry human capital is the technical, regulatory, customer, or supplier knowledge unique to an industry. Industry-specific knowledge acquired in a company that operates under one type of regulation – by the U.S. Food and Drug Administration, for example, or the Federal Energy Regulatory Commission – is not useful in an industry that operates under different rules. Similarly, the technical know-how that comes from medical, engineering, or scientific training in some industries probably won't be as useful in less-technical industries, just as experience selling to large business customers is not as useful in a retail-industry setting.

Relationship human capital reflects a manager's effectiveness stemming from established relationships with other team members or colleagues. Moving with other colleagues can help general managers achieve a high level of performance at a new firm. Solo movers need to create a network of effective relationships and social capital in their new firms that can build only over time.

Company-specific human capital includes knowledge about routines and procedures, corporate culture and informal structures, and systems and processes that are unique to a company. This type of human capital is the least portable of the five, but CEOs, unlike the rank and file, are uniquely positioned to capitalize on this knowledge by implementing familiar systems and processes.

RARELY PORTABLE

of the cases we teach on a new CEO widely known for transforming the nearly bankrupt Japanese auto manufacturer Nissan into one of the world's most successful car manufacturers. Having previously turned around Michelin operations in Brazil and overseen the integration of the Goodrich-Uniroyal acquisition, Ghosn earned the nickname "*le* cost killer" for his role in the Renault turnaround. His Nissan revival plan included cutting purchasing costs, closing plants, rebuilding the sales organization, establishing a new market-driven personnel system, improving cross-functional collaboration, and simplifying product development.

Steve Bennett was hired in 2000 as CEO at Intuit in large part because of his reputation as a driver of growth. While at GE, he had increased profits in equipment financing 150%, launched several new businesses, and been named executive vice president of GE Capital. Both Intuit founder Scott Cook and outgoing CEO Bill Campbell believed that the entrepreneurial, consensus-managed, decentralized, and somewhat laid-back Intuit needed process discipline and more strategic focus if it was to improve margins and top-line growth. They wanted someone who could continue to build the 4,000 employee, $1 billion company and who could execute. In addition to making numerous organizational and management changes, Bennett refocused Intuit's development strategy so that it was more customer driven – more focused on creating new markets and rolling out new products. Along with improving its business and tax software and restoring healthy profits to the seemingly mature Quicken, this approach led to a host of successful new innovations. Bennett achieved double-digit revenue growth within his first year; in his first five years, annual revenues increased an average of 17%, and annual income an average of 24%. The company also achieved the second-highest margins in the industry, after Microsoft.

Industry Human Capital

Most managers operate under constraints that are particular to an industry, such as regulatory supervision in the food, drug, and utility businesses or the deeply competitive nature of the consumer goods business. So we weren't surprised to find that relevant industry experience had a positive impact on performance in a new job, but that these skills didn't transfer to a new industry. In cases where a GE executive moved into an industry similar to the one that had formed the core of his experience at GE, his new company generated annualized abnormal returns of 8.8%; when the executive moved into a very different industry relative to his experience, his company generated annualized abnormal returns of –29.1%. Little wonder that some managers stay in a single industry throughout their careers. Pepsi's managers often go to other food or beverage manufacturers; Bristol-Myer Squibb's managers to other health care companies. Most executives at IBM, Motorola, and Hewlett-Packard, also breeding grounds for general management talent, remain in high tech. The first wave of companies in the disk drive industry were established by former IBM managers. In each of these industries, skills and knowledge are neither firm specific nor generally portable across all industries.

Industry expertise also includes relationships with customers, suppliers, regulators, and even competitors that can confer an advantage. In 1989, General Dynamics, one of GE's major customers, announced the hiring of William Anders, former general manager of GE Aircraft Equipment, as vice chairman and subsequently chairman and CEO. At the time, the F-22 program – then an estimated $67 billion project to develop the successor for

General Dynamics' highly profitable F-16 – was facing ill favor in Congress over costs. Calling on his industry knowledge and relationships, Anders badgered joint development partner Lockheed to sell its share of the program to him, and instead eventually agreed to sell General Dynamics' entire fighter unit to Lockheed for $1.5 billion, because his prior experience in the then-rationalizing defense industry led him to believe that consolidation was inevitable.

Industry advantage also includes familiarity with a customer set. As vice president of IBM's Microelectronics Semiconductor Products, Christine King established the division as a dominant manufacturer of application-specific integrated circuits. When AMI Semiconductor lured her away in 2001, the company specifically cited her outstanding relationships with customers as "a tremendous asset for AMIS."

Entering a new industry, by contrast, often entails a steep learning curve – a factor companies in crisis should keep in mind in the hiring process. In 2001, Larry Johnston left GE Appliances, where he'd risen to president and CEO and won kudos for moving the division into China and had spearheaded the successful launch of upscale appliance lines, to become Albertson's CEO. Like other grocery chains, Albertson's was under attack, most acutely from Wal-Mart, and needed an executive who could act quickly and decisively. Though he was a skilled cost cutter, Johnston was unprepared for an industry with few unique brands and inflexible labor and real-estate costs. Stymied in his efforts to match his competitors' organic growth, Johnston took four years to abandon plans to expand through acquisition and eventually engineered the sale and breakup of Albertson's portfolio of stores.

The Class of GE

We studied 20 executives who left GE between 1989 and 2001 to become chairman, CEO, or CEO designate of other companies. The list of companies and names is below.

Hiring company	CEO's name	Hiring announced
Albertson's	Lawrence Johnston	2001
Allied Signal	Lawrence Bossidy	1991
Comdisco	Norman Blake	2001
Conseco	Gary Wendt	2000
Fiat	Paolo Fresco	1998
General Dynamics	William Anders	1989
General Signal	Michael Lockhart	1994
Great Lakes Chemical	Mark Bulriss	1998
Home Depot	Robert Nardelli	2000
Intuit	Stephen Bennett	2000
Iomega	Bruce Albertson	1999
McDonnell Douglas	Harry Stonecipher	1994
Owens Corning	Glen Hiner	1991
Polaris Industries	Thomas Tiller	1999
Primedia	Thomas Rogers	1999
SPX	John Blystone	1995
Stanley Works	John Trani	1997
Terra Lycos	Joaquim Agut	2000
3M	W. James McNerney, Jr.	2000
TRW	David Cote	1999

Relationship Human Capital

The social capital an executive develops over the course of a career – ties to other executives – can prove to be a valuable asset. Such skills overlap with company-specific skills in that key relationships often come from company experience, and indeed in our study, we looked at the effect of bringing along a team of former colleagues on subsequent performance. We found that GE executives fared better when they could bring in other GE alumni. Companies that hired a team of three or more GE executives showed annualized abnormal returns of 15.7%, while those that hired just one (or none) achieved annualized abnormal returns of –16.6%.

The advantage of working with executives you are familiar with is no secret to general managers; there are numerous examples throughout management history of new executives populating a team with former colleagues. When Lee Iacocca joined Chrysler in 1978, he was able to handpick a staff that could help him carry out a high-risk turnaround of a nearly bankrupt company. In his first four years, to help him tackle Chrysler's financial, organizational, and creative crises, he replaced 33 of 35 vice presidents, many with people known to him from his long career at rival Ford. Similarly, when Don Burr founded discount airline People Express in 1981, he hired a corps of former colleagues from Texas International Airlines, including its core regulatory, staffing, and operational experts. Without these long-standing ties to highly motivated and knowledgeable staff, Burr wouldn't have been able to so quickly launch the new venture, in which management and line responsibilities were freely and informally shared.

Eight of the 20 former GE executives we studied brought in at least one former colleague, though only four brought along three or more. Steve Bennett was among them, making five new appointments – two in his first few months at Intuit and another three by the end of three years. If he'd been unable to fill key positions with highly capable people he knew well, the retirement of longtime and stock-wealthy Intuit employees could have been operationally devastating. What's more, the hires gave him the flexibility to reach down into the organization and offer stretch assignments to promising employees; putting known quantities into certain critical roles allowed him to balance the risk of placing unproven executives into other key jobs.

An executive's social capital can help, even if he doesn't directly hire any of his former colleagues. Welch, for example joined Fiat's board (his only outside board membership) when Paolo Fresco took charge of the company. In other cases, past ties may help facilitate the ongoing sharing of best practices, as occurred between GE and Allied Signal when Larry Bossidy, a GE alumnus, was its CEO. Social ties can also facilitate doing deals. SPX, for example, under the leadership of GE veteran John Blystone, bought General Signal at the end of another former GE executive Michael Lockhart's tenure.

Company-Specific Human Capital

Company-specific skills include tacit knowledge about unique routines and procedures, corporate culture and informal norms, and experience with specific management systems and processes. These are traditionally considered nonportable assets – skills that star performers can't take with them when they switch companies.

CEOs have an advantage over other employees: They may have the authority to install a management system to their liking.

But CEOs have an advantage over other employees: They may have the authority to install a management system to their liking, whereas the rank and file probably have to live with existing systems. Indeed, the former GE managers we studied performed better when they took over or built a management system that resembled GE's. The success of the executives we studied correlated directly to how similar the systems and culture of the new company were to GE's, and the executives' ability to put their GE tool kit to work. The ten companies that most resembled GE showed annualized abnormal returns of 17.5%, while the other ten, those with a lesser degree of fit, showed annualized abnormal returns of –37.7%.

Look again at John Trani and his troubled tenure at Stanley Works, the pairing in our study that produced the lowest match in terms of management systems and culture. Earlier, we noted the mismatch in strategic skills, but Trani also didn't introduce to Stanley Works the GE practices with which he was intimately familiar. For example, he didn't make any effort at Stanley to implement the storied way GE teaches and coaches leaders and encourages them to do the same with their direct reports. Nor did he make any deep-rooted systemic changes, such as implementing GE's disciplined process orientation to increase productivity, which could have given Stanley a cost advantage in a consumer industry characterized by oversupply.

Contrast Trani's approach with Bennett's at Intuit, where Bennett essentially remade the company along the lines of GE's celebrated management system. To name a few adjustments: He developed a leadership course, which he taught to senior managers, who in turn taught it to their reports. He overhauled performance evaluation, stepping up the objectivity of measurement criteria and rewards for highly rated employees. He applied new rigor to the budget review process, demanding that managers explain every aspect of their budget in terms of its strategic impact. And he implemented the Six Sigma process he had learned at GE, funding the program himself at a corporate level so that division leaders who in some cases resisted the effort stood to reap all the benefits and bear none of the costs.

James McNerney, too, enjoyed great success when in 2000 he left GE for 3M, a company that had become "fat and happy," in the words of one analyst, and was ripe for GE-style management discipline. Though in very different businesses, the two companies scored a high match on our scale, as 3M adopted several GE practices. In McNerney's first year in office, 3M made several acquisitions (the company had formerly prided itself on growing organically and serendipitously) and a wave of cutbacks focused in struggling businesses that eventually shed 11% of the workforce. At the same time, McNerney led efforts to rationalize and improve processes across the board, in part to control costs but primarily to kick-start growth through better R&D investments. He also opened a leadership development institute and shifted the seniority-based pay structure to a performance-based structure similar to GE's. These initiatives paid off: In 2003, 3M's profits and stock price both climbed 35%.

What was the key to McNerney's success? Even as he imposed certain GE practices, he took advantage of 3M's existing company traditions to get the organization behind his changes. He repeatedly praised the 3M culture and enlisted 3M's scientists, the core of the organization, in his initiatives. The technically savvy and performance-oriented organization embraced the process improvements, and its focus shifted heavily and swiftly toward execution.

It seems that McNerney took advantage of both a receptive organization and the opportunity to rebuild a familiar set of systems. But not everyone enjoys those advantages. A lack of receptivity can turn organization-specific skills intended to be a new executive's secret weapon into his Achilles' heel. For example, while CEO at recreation equipment company Brunswick from 1995 to 2000, Peter Larson tried to impose the decentralized brand-focused management system he'd learned at Johnson & Johnson. He chafed at what he perceived to be a lack of initiative and pushed to acquire a number of new businesses that didn't fit with the company's tradition of continuity and nurturing a long-established brand. By the end of his tenure, profits had disappeared.

Amazon.com similarly erred in early 1999 when it recruited Joe Galli as its first COO from the number-two position at Black & Decker, with the object of injecting some old economy discipline into the new economy darling. Galli quickly cut costs and aggressively built operations staff, in line with Black & Decker's customer service and fulfillment orientation. But Amazon's success was built on technical prowess, and shifting its model from erecting barriers to entry with innovations made by the technical staff to attracting and holding customers with customer-service staff would have entailed a fundamental organizational shift.

The effort failed, and Galli's tenure lasted a little over a year. When he left, founder and CEO Jeff Bezos eliminated the position of COO. Galli later became CEO of Newell Rubbermaid, where he outperformed the market during the first three years of his leadership. A customer-oriented, branded products company was a better match for Galli; he was able to focus on product innovation free from concerns about the organizational alignment between producers and salespeople.

• • •

When star executives switch companies, they leave an environment in which their skill sets allow them to be effective. The more closely the new environment matches the old, the greater the likelihood of success in the new position – a factor managers would do well to consider when deciding to change jobs. They should also remember that certain skills – most likely, company-specific ones – won't be relevant in the new job and will have to be unlearned, which takes time. The mixed success of star GE executives in replicating their success in a new job mirrors our earlier research with Ashish Nanda on star investment analysts, who are also seen as highly portable but meet with mixed success when they move. (See "The Risky Business of Hiring Stars," HBR May 2004.)

The variation in performance among our 20 GE managers should also be a cautionary tale for boards of directors and investors. Such high-profile managers tend to come at a premium, so in addition to looking at their prior performance and corporate pedigree, hiring companies would do well to assess the portfolio of human capital possessed by each CEO candidate and the extent to which these skills will transfer and be relevant to the new situation. If the board and senior management team are determined to make an offer, even in the case of a less-than-perfect fit, they should be prepared to make the changes necessary to allow the newcomer to succeed – whether that entails a wholesale change in leadership (allowing the new CEO to bring along some familiar faces), major changes in systems and processes, or changes to the business portfolio. With careful attention to a candidate's experience and the firm's strategy, and a willingness to make bold systemic and strategic commitments, a hiring company can do well wherever it turns for talent.

Reprint R0605E; HBR OnPoint 429X
To order, see page 159.

PATRICK HARDIN

The best service anticipates your needs. To help you arrive feeling ready for business, our Arrivals Lounge at Heathrow has the services of a spa. You can step off the plane and straight into a shower, a robe, even a Molton Brown facial - all while your suit is being pressed. Our goal is simple: to deliver the best service you could ask for, without you having to ask. So whether you're enjoying a gourmet meal, or our infinitely more comfortable flat bed, we think you'll find our business class like no other.

Visit ba.com/clubworld

Business class is different on **BRITISH AIRWAYS**

Fitting In

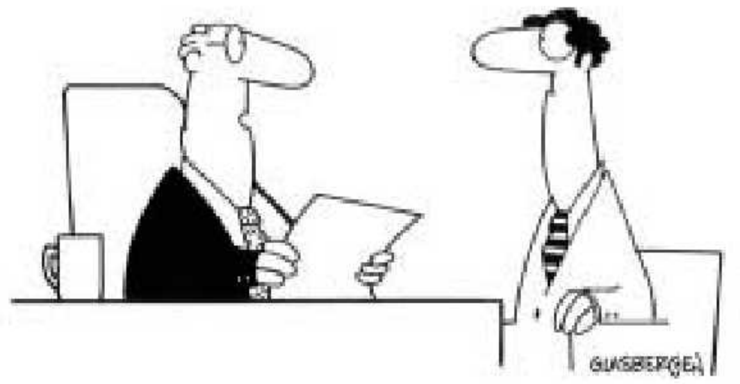
"Networks can function well if you are an insider – you know the right people, hear the right gossip. Those on the outside often feel lost in the organization, mistreated by it, or simply unable to affect processes or products in any real way."

Rob Goffee and Gareth Jones
"What Holds the Modern Company Together?"
Harvard Business Review
November–December 1996

"We need nicknames."

"Day 24: Haven't gained their trust. Still can't get past secretary."

DAVE CARPENTER, ROY DELGADO, RANDY GLASBERGEN, AND SCOTT ARTHUR MASEAR



"We think you'd make a fine addition to our sales force. We found traces of greed in your urine."

"Jocko, Binky, Fratboy, Stretch – how do we respond to the allegations of cronyism?"

"Ed, your lack of procrastination is causing some morale problems with the rest of the staff."

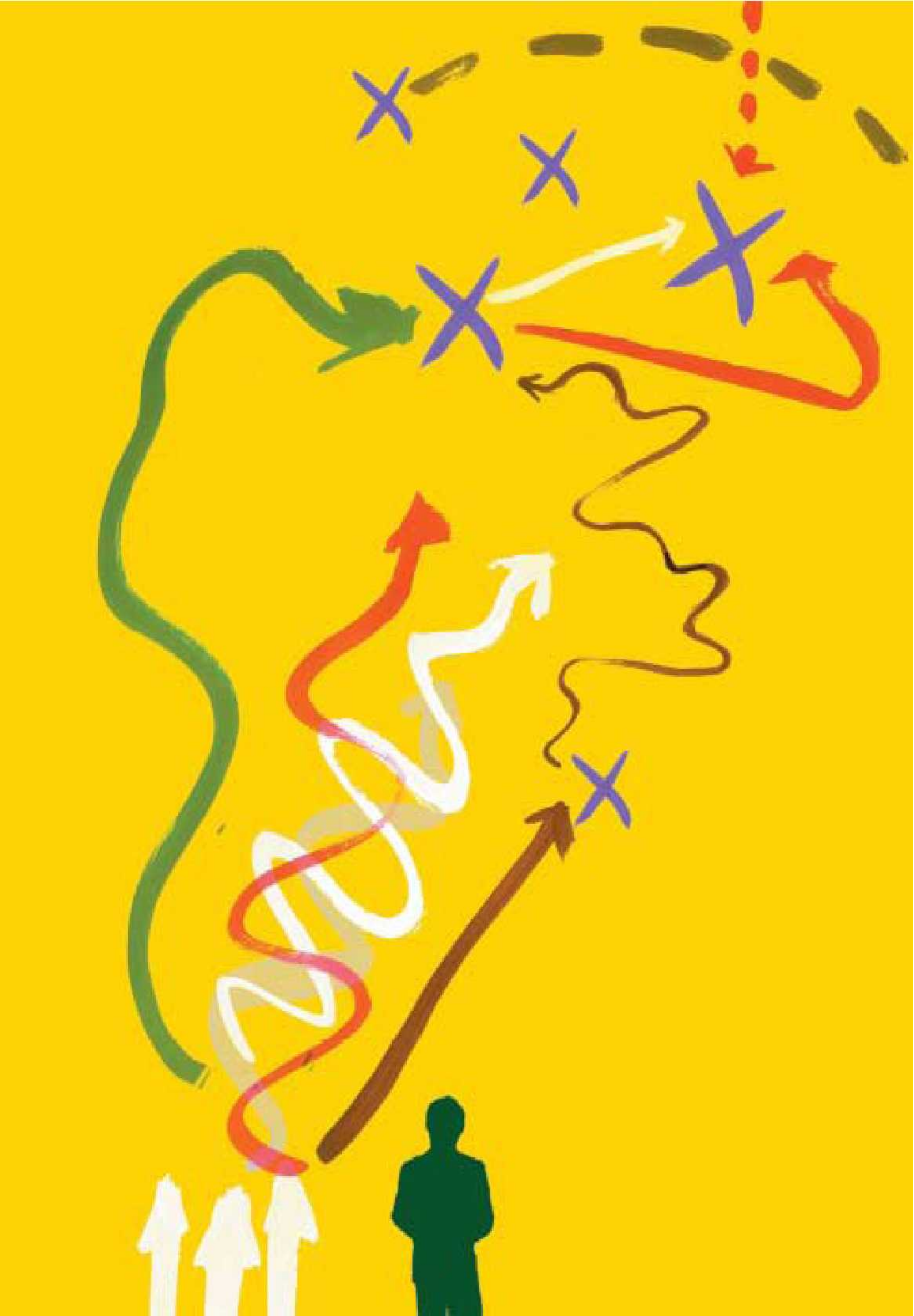
By describing the landscape of unmet customer needs and analyzing where new offerings have worked before, you can chart a path that will produce successful innovations time after time.

Mapping Your Innovation Strategy

by Scott D. Anthony, Matt Eyring, and Lib Gibson

To a casual observer, American football seems pretty simple: You run, you pass, you kick, you pause an inordinate number of times for car commercials. However, any aficionado knows that football is, in reality, dizzyingly complex. A professional team's playbook looks about as thick as the Manhattan phone book. On any given down, the coach selects a formation and a specific play to run from that formation. All the players know their precise assignments for each play and how to adjust them if necessary.

SIMON PEMBERTON



Good coaches know the keys to winning consistently in ever changing circumstances. They need great playbooks that exploit the strengths of their rosters. They need to select plays on the basis of their opponents' strengths and weaknesses and the circumstances of each game. They must be prepared to adjust their game plans midstream. Players need to be flexible, too, ready to change on the fly in reaction to moves by their opponents. Teams that can accomplish these things, week after week of a grueling schedule, emerge as champions.

Most managers would grant that creating innovative growth businesses is at least as complicated as professional football. Yet all too many companies approach innovation without a game plan that positions them for success. Instead, they take the strategies that worked in the past and try to execute them better. Or they fumble in their search for markets that might welcome the technologies incubating in their labs. Ultimately, many companies come to some uneasy realizations: Their old plays are no longer effective. Their unsystematic efforts to create growth lead to random and often disappointing results. After repeated struggles, some managers throw their hands up and declare that bringing predictability to innovation is impossible. Indeed, there is a general sense that a fog enshrouds the world of innovation, obscuring high-potential opportunities and making success a hit-or-miss affair.

It doesn't have to be that way. Over the past five years, we've helped dozens of companies apply Harvard Business School professor Clayton Christensen's insights into disruptive innovation. Our work suggests that a few simple principles can help companies speed through the fuzzy front end of innovation. By creating a playbook for new growth, using it to identify the best opportunities, investing a little to learn a lot, and changing the corporate discourse, companies can develop a process that produces high-quality innovations more quickly and with much less up-front investment.

Pick Your Playing Field

Before deciding *how* to play the innovation game, companies have to decide *where* to play. The good news is that, unlike professional sports teams that go where the schedule makers dictate, companies can choose to play in many different markets. But that is also the bad news. Too much choice can be overwhelming. And the innovation process can slow to a crawl if managers pursue opportunities that don't have a realistic chance of seeing the light of day.

One way to narrow down choices is to clarify what the company *won't* do. For example, a newspaper company that was looking into the wireless market set strict boundaries: no gaming, no gambling, and no personal ads. The company knew those boundaries left promising growth opportunities on the table, but they also kept middle managers from wasting time on ideas that senior managers would ultimately kill.

Paradoxically, these kinds of constraints can be liberating, helping to focus managers' creative energy. The search for new growth, however, can still be daunting. Most companies intuitively sense that the best place to look for growth is outside of – but not too far from – their core business. But where? We believe that strategies based on disruptive innovations have the highest chances of creating growth. Generally speaking, these innovations offer lower performance along dimensions that incumbent firms consider critical. In exchange, they introduce benefits such as simplicity, convenience, ease of use, and low prices. To spot markets that have a high potential for a disruptive approach, we ask three basic questions. (For a closer look at the three questions, see the sidebar "The Disruptive Playbook.")

What jobs can't our existing customers get done? As Christensen has pointed out, when customers buy products, they are in essence hiring them to get important jobs done. Companies can start the search for growth opportunities by examining why customers hire their current products. That understanding can point to related jobs that customers can't get done.

Consider how software provider Intuit developed the insight that led to its massively successful QuickBooks package. In the early 1990s, Intuit observed that many people who used Quicken, the company's personal financial software, were small-business owners. That was curious because Intuit hadn't designed the software to manage a business. The company realized that the job these customers had to get done was a simple one: Make sure I don't run out of cash. Software programs such as Peachtree that were designed for the small-business market were generally packed with complicated functions like depreciation schedules, which small-business owners found unnecessary and intimidating. Intuit realized that users enjoyed Quicken's simplicity and easy-to-navigate user interface. Intuit adapted that program for small-business owners, branded it under the QuickBooks name, and quickly became the dominant player in the category. "We uncovered a giant opportunity," Intuit cofounder Scott Cook said. "The majority of small-business people do not

Scott D. Anthony *(santhony@innosight.com) is the managing director of Innosight, a consulting firm in Watertown, Massachusetts, and a coauthor, with Clayton Christensen and Erik Roth, of* Seeing What's Next: Using the Theories of Innovation to Predict Industry Change *(Harvard Business School Press, 2004).* ***Matt Eyring*** *(meyring@innosight.com) is the managing director of Innosight Capital, an early stage investing company in Watertown.* ***Lib Gibson*** *(lib.gibson@bell.ca) is a corporate adviser in the office of the CEO at Bell Canada Enterprises in Toronto.*

have the skill to utilize debit- and credit-based software, but they have to keep books."

As the Intuit example shows, it's important to notice if your customers are using existing products in unusual ways, stretching them to do something they were not designed for, or "kludging" several together for a suboptimal solution. Those compensating behaviors signal that customers do not have access to the ideal product. None of the solutions small-business owners hired for the "don't run out of cash" job – pen and paper, Quicken, Excel spreadsheets – were a perfect fit, which spelled opportunity for innovation.

Who are the industry's worst customers? An industry's worst customers might sound like the last place to look for new growth. But thinking about ways to serve seemingly undesirable customers can point to novel strategies. Global silicone leader Dow Corning, for example, found a successful growth strategy by focusing on the low end of its customer base. The company produces the world's highest-quality silicones, used in applications ranging from shampoos to space shuttles. Dow Corning's scientists provide high value-added services to its customers. Yet the company found that its traditional business model actually overshot the needs of customers looking for basic silicones at reasonable prices. Those seemingly unattractive customers were turning to low-cost competitors that provided less-advanced products and no-frills service.

As the industry's largest player, Dow Corning would be able to take advantage of scale economics to play in this tier of the market – if it could reconstitute its business model. In 2002, it launched a distribution channel called Xiameter, designed to compete at the commodity end of the silicone business. By embracing a business model that differs sharply from its core model, Dow Corning is prospering in a very challenging market space.

Where are there barriers that constrain consumption? Throughout history, some of the most powerful growth strategies have democratized markets, blowing open select groups of the few, the trained, and the wealthy and thereby dramatically expanding consumption. Companies should scan for markets limited in various ways. Sometimes markets are constrained because products are too expensive for mass consumption. Sometimes the need for expertise limits a market to those with special training. Sometimes the need to go to a centralized setting, such as having to go to a doctor's office for a diagnosis, makes it difficult for individuals who prefer to "do it themselves."

Looking for such pools of bottled-up consumption led Turner Broadcasting System, a multibillion-dollar subsidiary of Time Warner, to a counterintuitive growth strategy. All of Turner's successes had been cable channels, like Cable News Network (CNN), Turner Classic Movies (TCM), and the Cartoon Network. In each case, the company had

The Disruptive Playbook

At the core of the disruptive innovation theory developed by Harvard Business School professor Clayton Christensen is a simple principle: Companies innovate faster than people's lives change. Most organizations make products that are too good, too expensive, and too inconvenient for many customers. This happens for a good reason. After all, managers are trained to seek higher profits by bringing better products to the most demanding customers. But in the pursuit of profits, companies overshoot less-demanding customers who are perfectly willing to take the basics at reasonable prices. And they ignore nonconsumers who may need to get a job done but lack the skills, wealth, or ability to adopt existing solutions.

Companies seeking to create growth through disruption can run three basic plays, each of which is suited to certain circumstances.

The Back-Scratcher: Scratch an Unscratched Itch

What it is: Make it easier and simpler for people to get an important job done.

When it works best: When customers are frustrated by their inability to get a job done and competitors are either fragmented or have a disability that prevents them from responding.

Historical examples: Federal Express, Intuit's QuickBooks.

Current examples: Procter & Gamble's Swiffer products, instant messaging technology.

The Extreme Makeover: Make an Ugly Business Attractive

What it is: Find a way to prosper at the low end of established markets by giving people good enough solutions at low prices.

When it works best: When target customers don't need and don't value all the performance that can be packed into products and when existing competitors don't focus on low-end customers.

Historical examples: Nucor's steel mini-mill, Toyota Corona.

Current examples: India-based Tata's sub-$3,000 automobile, exchange-traded mutual funds.

The Bottleneck Buster: Democratize a Limited Market

What it is: Expand a market by removing a barrier to consumption.

When it works best: When some customers are locked out of a market because they lack skills, access, or wealth. Competitors ignore initial developments because they take place in seemingly unpromising markets.

Historical examples: Personal computers, balloon angioplasty, Sony Walkman, eBay.

Current examples: Blogs, home diagnostics.

succeeded by obtaining basic content at a reasonable price and then shaping and molding it into a differentiated offering.

To find new growth, Turner looked for nontelevision markets that might have desirable content consumers couldn't easily access. The search led to gaming. Gaming companies had vast stores of content they pulled off the shelves years ago, just like the old movies that air on TCM. A consumer looking for one of those games had to put up with inferior online replications or try to find the original game on eBay – and that option would work only if the consumer owned the console on which the game operated.

Turner's strategy attempted to expand consumption of out-of-circulation games. The company licensed thousands of games – from timeless classics like Pong and Asteroids to more recent hits like Tomb Raider and Splinter Cell – and in 2005 launched a Web-based subscription service called GameTap. Although it is too early to measure results, the company's approach is consistent with other democratizing innovations that have created substantial growth businesses.

MOST COMPANIES intuitively sense that the best place to look for growth is outside of – but not too far from – their core business.

Build Your Growth Playbook

Once a company has identified the market space it wishes to target, it's time to look more specifically at how to serve that market. As an example, consider MinuteClinic, an emerging provider of health care diagnostic services. Its kiosks, located in stores such as Target and CVS, offer a menu of services for diagnosing about 25 straightforward ailments, including strep throat and pinkeye. The nurse practitioner who staffs the kiosk can reliably diagnose the conditions in less than 15 minutes and write a prescription that the customer can fill in the in-store pharmacy.

MinuteClinic shares the following characteristics with other disruptive innovations:

• *The target customer is looking for something different because existing solutions are too expensive, too complicated, or don't quite get the job done.* MinuteClinic's customers aren't looking for better-trained doctors; they are looking for speed and convenience.

• *The solution is good enough along traditional performance dimensions and superior along other dimensions that matter more to target customers.* MinuteClinic can't treat everything. If a customer comes in and says, "I feel dizzy" or "Something is wrong with me, but I don't know what," MinuteClinic refers the patient to a physician in a traditional setting. But MinuteClinic has better performance along dimensions its customers care about – speed and convenience.

• *The business model has low overhead and high asset utilization, allowing companies to offer low prices or serve small markets.* MinuteClinic, with its lean overhead and effective software systems, can provide a lower-cost solution that is extremely appealing to insurers and corporate sponsors.

• *The strategy is not one that powerful incumbents initially want to pursue themselves.* Many primary care physicians welcome MinuteClinic's solution because it frees them to work on the more complicated problems that are a better fit with their training.

While this basic disruptive pattern holds true across industries, companies need to customize an approach that reflects the idiosyncrasies of their particular markets. Thus they need to develop checklists that spell out the market circumstances where the approach has the best chance of succeeding and identify criteria to which successful strategies should conform.

One way to develop such a checklist is to analyze ten to 15 major innovations in the market segment's history. Look at both successes and failures, particularly the "surefire" strategies that flopped and the "unpromising" ones that were runaway successes. Figure out the elements shared by the truly successful strategies. Combine the results of this historical analysis with the basic disruptive principles, and you have your customized checklist, or playbook. For example, a consumer health care company identified at-home diagnostics as a key growth area. It was interested in understanding why some consumer-based diagnostics, such as pregnancy kits and blood glucose monitors, took off while others, like home drug tests, floundered. By analyzing the history of home diagnostics from a disruptive perspective, the company identified the characteristics shared by successful innovations. It then created a 20-point checklist to assess new products that included elements such as the following:

- Is the diagnostic job important to the consumer?
- Is diagnosing currently very difficult, inconvenient, or expensive?
- Are results conclusive without further testing or triaging of symptoms?

Build Your Innovation Game Plan

Now it's time to create a short list of innovation ideas for your target market and to assess whether those ideas adhere to the general pattern of success you've uncovered and to your specific checklist.

The discipline of checking seemingly high-potential ideas against a rigorous list of questions should keep you from moving forward with a plan that's similar to something that worked in the past but different in some crucial way. For example, Procter & Gamble has time and again leveraged its massive distribution power to muscle itself into a product category. To take just one example, in 1999 the consumer products giant purchased Iams, a niche pet food provider, for $2.3 billion. By improving an already good product and bringing it to tens of thousands of grocery stores, where it competed against fragmented providers, P&G created a blockbuster brand. However, when P&G tried to enter the prepackaged cookie market with its Duncan Hines soft-baked cookies in the 1980s, it was a different story. The market was not fragmented, and strong competitors Keebler and Nabisco reacted ferociously to P&G's entry. Although P&G claimed the rivals had infringed its patents (and ultimately won a lawsuit), it had to exit the market. P&G's classic consolidation-and-distribution play worked when competitors were fragmented but failed when two powerful incumbents were among them. A checklist that included questions about the clout of potential competitors might have alerted managers to the problem.

- Is the diagnostic linked to treatment or follow-up action?
- Are we capable of developing the necessary technology?
- Can we communicate effectively to the target consumer?
- Will influencers (such as professional caregivers and insurers) actively support the diagnostic?
- Will our competitors have difficulty duplicating this product?

The checklist allowed the company to look at any opportunity from multiple perspectives, including those of consumers, competitors, the channel, and regulators. The diversity of perspectives allowed the company to avoid a classic trap: a myopic focus on innovation within a company's comfort zone. For example, a firm with a strong engineering culture might focus primarily on whether it can solve a tough technological problem. This kind of focused question is important, but companies that don't also develop a holistic sense of an opportunity run the risk of missing important elements that can come back to bite them.

With these guidelines in hand, companies can then begin to move from generic plays to specific opportunities for innovation.

Creating specific opportunities. Let's look in detail at how one company identified, then assessed, a potential innovation. Ethicon Endo-Surgery, a multibillion-dollar company, sells equipment for minimally invasive surgeries. In analyzing the industry's pattern of success, EES managers realized that the most successful new medical devices typically enabled less highly trained (and less costly) practitioners to treat patients themselves instead of referring them to specialists.

EES managers then looked methodically for an existing surgical procedure characterized by a lot of seemingly avoidable high costs. They learned that more than a quarter of colon resections–painful, invasive, high-cost procedures–remove a benign growth. That figure seemed high, so EES managers started talking to leading gastroenterologists, many of whom had a rule of thumb: Any growth of more than two centimeters gets referred to a surgeon because the gastroenterologist can't efficiently remove such polyps, which are often cancerous. Once EES identified this circumstance, which had high potential for a novel approach, it started looking for a specific technology to bring to the market. Some internal brainstorming, followed by an intensive survey of external technologies and development work, led to a project to develop a device that would enable gastroenterologists or clinicians to remove large polyps noninvasively, during a colonoscopy. Clinicians who have used the device say that it has the potential to become the new standard of care, allowing more practitioners to treat patients less invasively and in less centralized settings.

The process of assessing an opportunity against a checklist often leads a company to go ahead with the project–but adjust it in some crucial way to fit the pattern of successful innovations. For example, a team at P&G was evaluating a strategy to bring one of its leading brands to China. The team knew its solution had to be very low cost and still perform adequately along dimensions that consumers cared about. But to get the product to a low enough price point, P&G would need to strip out functionality that demanding consumers in the country's largest cities considered critical. This assessment led P&G to start in smaller Chinese cities, where consumers for whom existing alternatives were too expensive would embrace P&G's limited first-generation product. As P&G works out the inevitable kinks in manufacturing such a low-cost product and improves its functionality, it plans to introduce the product in larger cities.

Focusing on patterns instead of numbers. Many seasoned innovators might be asking themselves, "But what about the numbers?" Obviously, when you're planning to launch a product or service, you can't ignore financial data. However, our experience suggests that most companies force teams to develop detailed financial estimates way too early, when their accuracy will necessarily be low. Using metrics such as net present value (NPV) or return on investment (ROI) as rough guidelines is fine. Using them as rank-ordering tools to make decisions is counterproductive.

Here's why: Companies that rank projects using detailed financial metrics won't end up selecting ones aimed at the seemingly small, difficult-to-measure markets that are so often the footholds for powerful growth strategies. Instead, they'll likely move forward with projects in large, measurable markets–the ones that are usually hostile to disruptive innovations. As a result, new products often fail to deliver significant, differentiated new benefits, or the company suffers a devastating response from incumbents.

Instead of fretting over precise figures, play the "number of zeros" game. Determine whether the revenue created by an opportunity will have eight zeros on the end ($100 million) or five ($100,000). Focusing on the assumptions behind those estimates–what must be true for those estimates to be plausible–is meaningful. Arguing about whether an opportunity will produce revenues of $23 million or $28 million is pointless at this early stage.

Detailed metrics make sense for product extensions in known markets. Innovation strategies that are markedly different need an appropriately different evaluation process. A company's early focus has to be on how well the innovation fits with the pattern of success. Had the P&G team mentioned earlier focused on detailed metrics too

Changing the Innovation Mind-Set

Implementing the principles we discuss can allow companies to embrace new innovation mind-sets:

- **Good enough can be great.** Many companies unintentionally slow the innovation process by pushing for perfection. eBay CEO Meg Whitman, quoted in a March 2005 issue of *USA Today,* put in nicely: "It's better to put something out there and see the reaction and fix it on the fly…It's another way of saying 'perfect' is the enemy of 'good enough.'"

- **Step, don't leap.** Great leaps forward, when companies spend many years and millions of dollars seeking to jump over existing companies, almost never work. Companies have a much greater chance of success if they start with a simple springboard. Think about the journey of P&G's Febreze brand. P&G initially positioned Febreze as a "removing odor" brand by packaging it to look like other household cleaners and placing it in the laundry aisle next to such powerhouse brands as Tide and Downy. The company then introduced Air Effects, thus moving Febreze toward a "clean the air" brand. In early 2006 P&G introduced Febreze Noticeables, a plug-in air freshener that alternates between two scents. P&G has obviously moved squarely into the air freshening market, but it has done so in a thoughtful, staged way.

- **The right kind of failure is success.** Most well-run companies naturally consider failure to be highly undesirable. But remember, most of the time the initial strategy for a growth business is going to be wrong. Managers need to recognize that learning what's wrong with an approach and adapting appropriately is a good thing, not a failure. The Mayo Clinic gives a "queasy eagle" award to individuals who fail for the right reason. Managers must balance the confidence to start going in an uncertain direction, the humility to recognize that the direction is wrong, and the fortitude to listen, learn, and adapt.

soon, it probably would have decided to start in China's largest cities. After all, that approach would appear to yield the highest first-year sales and NPV figures. By paying attention to its playbook, however, the team saw that starting in the big cities would actually lead to failure.

Execute and Adapt

If everything went exactly as coaches diagrammed, football would be a pretty boring game (rugby fans might argue that it already is pretty boring). The result of any play would be perfectly predictable. In reality, however, plays often unfold in completely unanticipated ways. Companies need to make sure that as they begin to execute their new-growth game plans, they, too, encourage adaptation and flexibility. They can do this by following a simple mantra: Invest a little, learn a lot.

Big companies often think their deeper pockets give them an advantage over start-ups. But sometimes extra financing is a curse. Project teams with too much money may keep going in the wrong direction for too long. Those with scarce resources, however, must scramble to find novel approaches that they might not otherwise discover.

One powerful example of this principle is Teradyne's efforts in the late 1990s to create a disruptive product in semiconductor test equipment. Teradyne's CEO at the time, Alex d'Arbeloff, recognized that emerging technologies would allow the company to create machines that were dramatically smaller, cheaper, and simpler to use than the products it currently sold to market leaders like Intel. The new machines wouldn't be as functional, but they might be good enough for some market segments. It felt like a classic case of disruptive innovation.

D'Arbeloff gave the team, code-named Aurora, modest revenue expectations – $1 million in year one and $11 million in year two – but demanded that it achieve profitability before he invested significant sums of money. By constraining the team's financial (and therefore engineering) resources, he forced it to find a foothold market it could attack quickly. The team just didn't have the luxury of spending years in development to make the product good enough for Teradyne's core customers. Although team members occasionally muttered not-so-nice things under their breath about d'Arbeloff, scarcity compelled them to experiment with novel approaches. Ultimately, the team found a surprising way into the market by targeting manufacturers who produced inexpensive commodity semiconductors that perform basic computations in household appliances such as toasters. Historically, these customers couldn't afford Teradyne's expensive, complicated test equipment, but they loved the simpler, cheaper Aurora product. The product took off and created a substantial growth business for Teradyne.

Some managers might be nodding their heads at this point, thinking, "We get this. We have brought the venture capital approach into our organization." Our experience suggests that many companies that think they are following an "invest a little, learn a lot" approach are actually falling into one of three classic traps: They are unwilling to kill projects that have fatal flaws; they commit too much capital too soon, allowing a project team to follow the wrong approach for too long; or they fail to adapt their strategies even in the face of information that suggests their current approach is wrong.

To avoid these mistakes, companies should be rigorous about staging their investments. Early investments should focus on resolving critical unknowns. Identifying where the team should focus is straightforward. Just ask the following questions: What is the consequence of being wrong about an assumption? Is it catastrophic or potentially harmless? How much certainty do I have that I am right? Enough to bet my job on it? How long would it take and how much would it cost to become more knowledgeable?

By answering these questions and identifying critical assumptions, teams can direct their investments to the appropriate experiments. After running the experiments, companies then have one of four options:

- *Double down:* Information clearly points to a winning strategy with no obvious deal-killing uncertainties, so move forward rapidly.
- *Continue exploring:* All signs look positive, but there are still untested assumptions, so keep experimenting.
- *Adjust the game plan:* Investigation suggests that the current strategy is not viable, but another approach might be, so change the approach and begin experimenting again.
- *Shelve:* There is no clear path forward, so move on to other projects until something else changes.

NOTICE IF your customers are using existing products in unusual ways, stretching them to do something they were not designed for, or "kludging" several together for a suboptimal solution.

The key is to make decisions rapidly. We have seen companies seeking to build their innovation capabilities try to move dozens of ideas forward simultaneously. Starting with a lot of ideas is important, but success requires the fortitude to shut down the unpromising ones and redirect those that are heading in the wrong direction. If companies wait too long to make these decisions, they end up diverting resources toward fruitless efforts or continuing to execute a fatally flawed strategy. Consider the words of a newspaper editor who faced this difficulty as his company attempted to innovate on the Internet: "Given the pace of our expansion, I don't think we made mistakes fast enough, and we didn't learn from them often enough. The problem wasn't just turning [the experiments] on, sometimes it was turning them off."

Change Your Role

It will come as no surprise that senior management has an important role to play in building a strong capability around growth and innovation. Creating a separate pool of resources for growth initiatives and fiercely protecting that pool is one obvious step. But senior managers need to do more than provide resources. They need to shield innovation projects as if they were viruses threatened by corporate antibodies. And they need to work with innovators to solve vexing strategic issues.

Blocking the antibodies. Consider a chemical company that was working with a wide array of suppliers to quickly bring customized products to the marketplace. The strategy was very different from the one the company used in its core business, where it worked with just a few suppliers and followed a very rigorous and lengthy process to ensure that suppliers met high quality standards. That process worked extremely well when the company was adding another core supplier. However, it crippled the new approach, which focused on mix-and-match, fast customization. By the time a supplier received clearance, a window of opportunity had slammed shut.

With this realization, senior management gave the team "process FastPass" cards modeled on Disney's program that allows people to cut to the front of lines on popular rides. As long as the team had convincing evidence that using a supplier would not get the company in trouble, it could bypass the standard approval process. Fortunately, most of the suppliers in question worked with other industry players and so easily passed that litmus test.

Mobile phone giant Motorola applied a similar principle while developing its ultra-thin Razr phone. Usually, when Motorola planned to develop a new phone, representatives from each of the company's major geographic regions (Europe, Asia, and so on) weighed in on the concept. The regions would request the sorts of features and functions they wanted in the design. Each region would then forecast how many units of the model it thought would sell. The aggregated regional plans would help Motorola decide whether to invest in the phone.

It was always a complicated dance. If a development team ignored features that a specific region deemed critical, that region would project low sales, which would make it tougher for the development team to get approval for the project. Teams knew, then, that they had to appease each of the regions. Although this system ensured that products reflected some critical feedback from the regions, it could force designers to develop compromise products that were acceptable to everyone yet delightful to no one.

With the Razr, Motorola's management sensed an opportunity to buck industry trends. Whereas competitors were racing to cram more features and functionality onto handsets, Motorola decided to limit features and focus on form, creating the smallest, thinnest phone on the market. Luckily, management recognized that it had to buffer the Razr team if it wanted to introduce this blockbuster innovation. Senior management exempted the Razr from the company's standard development process, giving the team freedom to create a novel product that delighted customers and caught competitors off guard. The Razr exceeded the company's total lifetime projections for the product in its first three months, turning into a massive success story for Motorola.

Changing the conversation. In addition to shielding project teams, senior managers must also change the discourse with them. As more and more companies have adopted stage-gate processes to manage innovation, an us-against-them mentality has emerged. Teams present to senior managers, who then act as gatekeepers, either opening the gate to let projects through or locking it until the team comes back with better numbers or more proof. When the right strategy is unknown and unknowable – as it so often is with novel growth initiatives – senior managers need to be problem solvers, not dictators.

Now, of course senior management can't be deeply engaged in every project. If a project is in a well-known market, it's appropriate for senior management to act as a traditional gatekeeper. Nor should senior managers abdicate their role as decision makers who determine when a team has learned enough to continue moving forward. But if neither management nor the team knows the answer, senior managers ought to break out of the us-versus-them mind-set and use their strategic thinking skills to help the team solve problems. (See the sidebar "Changing the Innovation Mind-Set" for other important changes.)

• • •

Companies can pierce the fog of innovation. An unpredictable innovation process teeming with trade-offs between speed, quality, and investment can become better, faster, and cheaper. By allocating resources more efficiently and accelerating the highest-potential innovations, companies can enjoy a winning streak of innovation successes that will throw competitors off balance.

INSTEAD OF FRETTING over precise figures, play the "number of zeros" game. Determine whether the revenue created by an opportunity will have eight zeros on the end ($100 million) or five ($100,000).

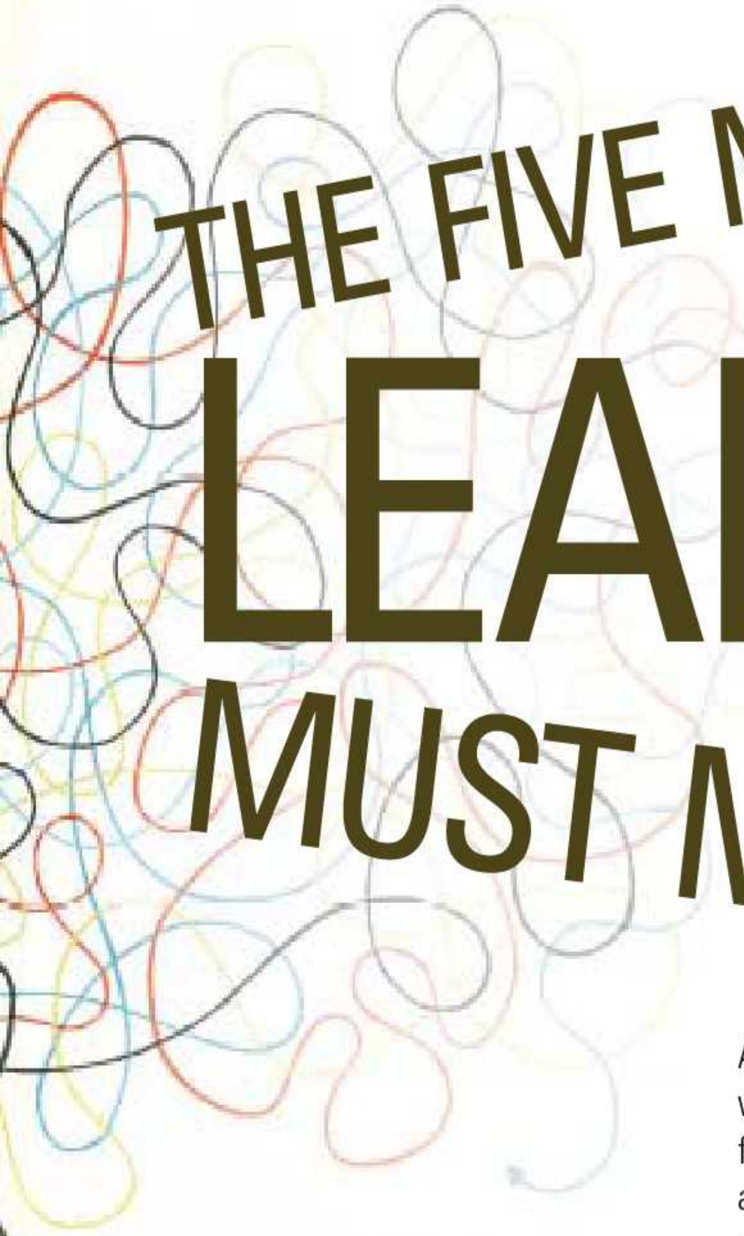
Karl Ronn from P&G embodies this notion. Ronn, the vice president for research and development for the company's home care division, oversees such brands as Mr. Clean, Dawn, Swiffer, and Febreze. When a team is working on an incremental line extension, Ronn receives results at predetermined milestones. But when P&G is developing extremely novel products, such as the Mr. Clean Magic Eraser or Flick (a version of Swiffer that cleans carpets), Ronn acts differently. Instead of reviewing results of agreed-upon decisions, he and the business unit president go into the labs to review early prototypes and participate in daylong brainstorming sessions. Such deeper engagement allows senior managers to get a better feel for the new products and share their collective wisdom with the team. "This is not like a Skunk Works where we cut out the middle managers," Ronn said. "Rather, we are there with them to help and also to learn about the business before we have to invest in it."

Generally, senior managers overseeing novel growth strategies need to engage frequently with the managers developing and implementing them. Quarterly meetings either slow progress or lead teams to make critical decisions without senior management's guidance.

But the opportunity that now exists to build a competitive advantage through innovation won't last forever. That's because problem-solving approaches evolve in a predictable way. When people first encounter a new type of challenge, they must solve it using an unstructured, trial-and-error approach. Over time, as they learn more about that particular challenge, clear rules emerge to guide problem-solving efforts. We believe that innovation is now somewhere between random trial-and-error and perfectly predictable, paint-by-number rules. We think of this transitional period as the era of pattern recognition, during which companies can create competitive advantage by becoming world-class at defining and executing against patterns. As the patterns we've identified become more obvious – and as others emerge – it will once again become difficult to base a sustainable competitive advantage on innovation competencies. But for the moment, forward-thinking companies can head out in new directions by learning how to see patterns where others see chaos.

Reprint R0605F; HBR OnPoint 4281
To order, see page 159.


JOSHUA GORCHOV



THE FIVE MESSAGES LEADERS MUST MANAGE

All too often, leaders fail to explain what they mean when they talk about organizational structure, financial results, their own jobs, time management, and corporate culture. Left unclear, these concepts can throw a firm into turmoil–but when given proper focus, they confer extraordinary leverage.

by John Hamm

IF YOU WANT TO KNOW WHY so many organizations sink into chaos, look no further than their leaders' mouths. Leadership, at any level, certainly isn't easy–but unclear, vague, roller-coaster pronouncements make many top managers' jobs infinitely more difficult than they need to be. Leaders frequently espouse dozens of cliché-infused declarations such as "Let's focus on the key priorities this quarter," "Customers come first," or "We need a full-court press in engineering this month." Over and over again, they present grand, overarching – yet fuzzy – notions of where they think the company is going. Too often, they assume everyone shares the same definitions of broad terms like vision, loyalty, accountability, customer relationships, teamwork, focus, priority, culture, frugality, decision making, results, and so on, virtually ad infinitum.

Even the most senior managers nod in polite agreement when the CEO uses inflated terms like these, but the executives may feel somewhat discomfited, wondering whether they've truly understood. Rather than asking for clarification – a request they fear would make them look stupid – they pass on vague marching orders to their own troops, all of whom develop their own interpretations of what their bosses mean. In the absence of clear communication that satisfies the urgent desire to know what the boss is really thinking, people imagine all kinds of motives. The result is often sloppy behavior and misalignment that can cost a company dearly. Precious time is wasted, rumors abound, talented people lose their focus, big projects fail.

By contrast, think of the way a high-reliability team – say, an emergency room staff or a SWAT team – works. Every member has a precise understanding of what things mean. Surgeons and nurses speak the same medical language. SWAT teams know exactly what weapons to use, and when and how and under what conditions to use them. In these professions, there is absolutely no room for sloppy communication. If team members don't speak to each other with precision, people die. People don't die in corporations, but without clear definitions and directions from the top, they work ineffectively and at cross-purposes.

For the past five years, I've worked with hundreds of CEOs as a leadership coach, a board member, a venture capital investor, and a strategy consultant. I've also been a president and CEO myself (my company, Whistle Communications, was acquired by IBM in 1999). The companies whose CEOs I've worked with – typically technology firms – range in size from about 100 to several thousand people. In observing CEOs, I've come to the conclusion that the real job of leadership is to inspire the organization to take responsibility for creating a better future. I believe effective communication is a leader's single most critical management tool for making this happen. When leaders take the time to explain what they mean, both explicitly (by carefully defining their visions, intentions, and directions) and implicitly (through their behavior), they assert much-needed influence over the vague but powerful notions that otherwise run away with employees' imaginations. By clarifying amorphous terms and commanding and managing the corporate vocabulary, leaders effectively align precious employee energy and commitment within their organizations.

In researching this topic, I have discovered that many leaders don't take the time to define specifically what they mean when they use generalized terms or clichés. They don't want to feel that they are talking down to people by providing what seems like unnecessary detail or context. Leaders simply assume that the exact meaning of their words is obvious; they're surprised to learn not only that their message has been unclear but that their teams crave definitions so they aren't forced to guess what the boss has in mind.

If we accept that the leader's job, at its core, is to inspire and support the organization's collective responsibility to create a better future for the company, then what are the keys to effectiveness? What tools do leaders need at hand for this mission? What mental models must they have? I like to think of good leaders as comparable to skilled locomotive drivers. The train is controlled by a set of switches and levers. When the driver pulls one lever, the train goes forward; when he pulls another, it stops, and so on. When an organization is well aligned, all the managerial levers are easily and neatly moved. They function smoothly so that driver, passengers, and train gracefully move forward as one.

In my experience, five such topics control the train: organizational structure and hierarchy, financial results, the leader's sense of his or her job, time management, and corporate culture. Messages on these subjects wield extraordinary influence within the firm. When leaders take it for granted that everyone in the organization shares their assumptions or knows their mental models regarding the five subject areas, they lose their grip on the managerial levers and soon have the proverbial runaway train on their hands. But properly defined, disseminated, and controlled, the five topics afford the leader opportunities for organizational alignment, increased accountability, and substantially better performance.

Before examining each one, I'd like to address a few possible objections head-on. First, why do these five particular topics matter so much – why would defining corporate culture be a higher priority than, say, defining customer relationships? Certainly, other terms carry a premium in some organizations, but I've found that these five are excellent places to start and are highly representative of the kind of difficulties that exist for leaders as they speak to their teams day to day. The topics not only present the sharpest examples of the dangers of imprecise communication, but, when mastered, they also produce the greatest leadership leverage.

I am hardly suggesting that in defining the five concepts precisely, leaders should become dictators or blowhards.

John Hamm (johnhamm@mac.com) is a general partner at VSP Capital in San Francisco and the author of "Why Entrepreneurs Don't Scale" (HBR December 2002). He led a CEO "boot camp" in the Bay Area for four years.

On the contrary, I am suggesting that when a leader defines what he or she really means and sets a clear direction according to that definition, relationships and feedback improve, action is more efficient and on-strategy, and improved performance follows.

Organizational Structure and Hierarchy

MESSAGE 1

The organizational chart, because it represents individual power or influence, is an emotionally charged framework even during a company's most stable times. But when the corporate structure is changing, the org chart can truly become fearsome, particularly in companies where, because of the political culture, employees worry about risk to their personal status.

If a CEO fails to take definitional control of a reorganization, with its prospect of job losses, boss changes, and new modes of working, the whole company can grind to a halt. Consider what happened when one well-known former CEO allowed the default assumptions surrounding the term "reorganization" to take hold. A few years ago, Carly Fiorina decided that Hewlett-Packard needed a top-to-bottom reshuffling. She had a fixed idea that reorganizations must be managed with extreme care, and she implicitly communicated her belief by the cautious way she floated her ideas with senior managers. She worried that a reshuffling plan would open a Pandora's box of political sensitivities, especially among middle managers. For this reason, everyone assumed that "reorganization" was cause for fear and trembling.

For two months prior to Fiorina's official announcement, work slowed or stopped as employees, not knowing precisely what to expect or fear, shifted their focus to the upcoming changes. Managers, jostling for power and position, got lost in political battles. Motivation plummeted. Contractors were put off, since no one knew who would be managing which divisions after the reorganization. When the new organizational structure was finally communicated, still more time passed unproductively as employees settled into their new positions. A total of 12 weeks – a full quarter – were effectively lost. If you multiply that time by employee salaries, and factor in the inevitable lapses in customer service and product innovation during the period, you can conservatively estimate the damage to the company.

It may be unreasonable to blame Fiorina for failing to realize that she was communicating her trepidation, or to fault her for not divining the consequences of talking about her reorganization ideas months ahead of time. After all, leaders cannot be held to perfection in execution. But they *can* be held to a standard when communicating a vision and its rationale. If Fiorina had laid out the master plan behind the reorganization more clearly, made her decisions more quickly, and communicated more explicitly, the troops at HP would have gained a better understanding of the process, the reasons for the extended time frame, and their future places within the company.

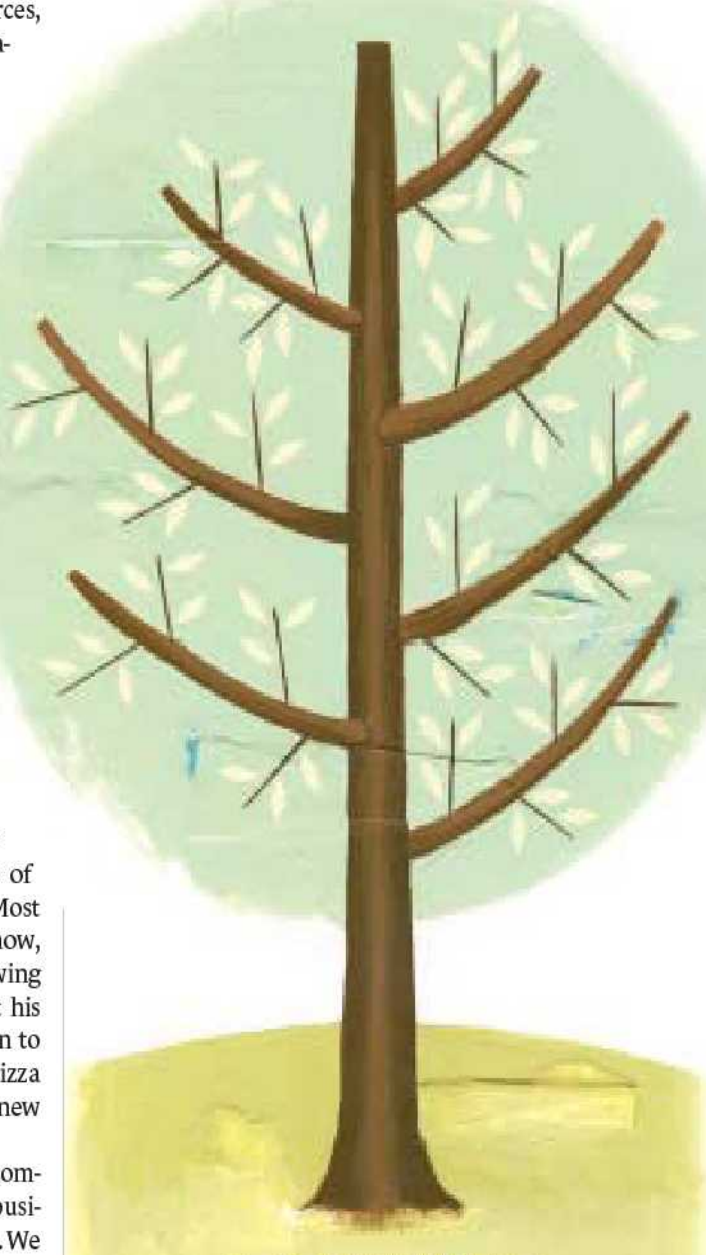
A leader who quickly takes charge of the communication around a reorganization can prevent the discourse from engendering fear. The most productive way for a leader to think about organizational structure is as a flexible map

of accountability for action and, thus, results–a guideline whose purpose is to define goals and optimize resources, not to oust or devalue employees. When a reorganization is presented as such, it loses its reputation as a proxy for personal power shifts, whether real or imagined.

The CEO of a 150-employee software company shows how a leader can prevent political fears from taking hold by keeping communications brief and to the point. Rather than viewing the org chart as a source of anxiety, and communicating that attitude to the company, the CEO chose to see it as simply a temporary structure for optimizing resources. When a new strategy or direction was called for, he enlisted people as active agents of change, so they wouldn't be left to wonder whether they were to become victims. For example, the CEO realized at one point that he needed to realign internal resources because a close competitor was gaining an advantage. He called an all-hands meeting for a Monday morning. "Team," he said, "we're in a war for market share. I get paid to win it, and so do you. But right now I don't think we're properly configured to win the particular battle we're fighting, so I'm changing the structure of resources so that we can execute more effectively. Most of you will continue to do the jobs you're doing now, but you may have a different supervisor." After showing everyone the new organization chart, he looked at his watch. "It's 10:45 now," he said. "You have until noon to be annoyed, should that be your reaction. At noon, pizza will be served. At one o'clock, we go to work in our new positions."

The CEO later explained what he did: "We had a competitor who was showing us a better way to win the business. We were both like captains of firefighting teams. We each had seven people and a full set of buckets and hoses. My team had five guys armed with buckets and two with hoses. His team had three guys with buckets and four with hoses. We just weren't organized to compete and win. I wasn't trying to shift power; I was just trying to optimize our resources. I wasn't willing to let this change be viewed as a political event. I wanted it to be seen as a business necessity to remain competitive."

Obviously, it's one thing to shift personnel in a 150-person company and quite another to do so in a giant corporation like HP. But I would argue that the value of clear, honest, explicit communication rises exponentially with the size of the organization. In fact, a large company can be reshuffled much more quickly when the CEO deliberately decides not to inflate the political balloon and won't tolerate others doing so.



84 GREAT THINGS

To get an idea of what can happen when a CEO manages time constraints by setting reasonable expectations, imagine that you have seven direct reports, each of whom commits to completing no more than three important, very doable initiatives each quarter. If these reports and their teams meet their goals, four quarters will yield 84 significant accomplishments. If your company were able to do anywhere near 84 significant things in a single year, the results would no doubt be astonishing. The real enemy to accomplishing 84 great things is the temptation to work on the 85th objective and beyond before, or at the expense of, the higher-priority goals. To keep people on track, a leader must communicate objectives very clearly and demand that action flow to the real priorities first.

Having gathered the data and made her decision, Fiorina was under no obligation to provide previews of coming attractions. Within 48 hours of the announcement, she might have held a companywide meeting, complete with a Webcast, to explain why the change was necessary. To keep people's minds off who was headed down and who was headed up, she could have asked everyone involved in the changes to identify and submit, in short order, explicit goals for the next 60 days. She thus would have communicated that the organization chart has nothing to do with politics and everything to do with organizational effectiveness.

Financial Results

MESSAGE 2

"Results" is another powerful concept that, left unmanaged, poses a risk to a company's long-term health. When a top executive tells employees they need to "focus on our promised results," senior managers often interpret that as meaning "Do whatever it takes to meet investors' expectations." By losing sight of the connection between employee behavior and results, and failing to take advantage of learning opportunities, leaders miss out on building long-term value for their firms.

One CEO I knew truly believed that the only purpose of his job was to make aggressive predictions and promises about quarterly results and then achieve the numbers by any means possible. By the ninth week of every quarter, when projections fell short, he put enormous pressure on his sales professionals and finance people. His implicit message was: "These are the results I need; I don't care how you get it done." He fully expected the company to thrive.

Quite the opposite occurred. Because the CEO defined "results" so narrowly and failed to properly motivate or compensate his selling team, the sales force had no compunction about stuffing the sales channel. Though the company never met with any punitive action, its poor practices forced recalculations of results and exposed it to huge write-downs. Revenues stalled at $10 million a quarter, and the company was eventually acquired at a discount to its annual revenues.

In the long term, consistently positive results spring from intelligent strategy and an incessant focus on quality of execution. Think of a golf pro like Tiger Woods, whose best bet for winning major championships is to master his aim, setup, and swing. Once the ball is in the air, there is no way to control it; it will land where it will. Similarly, effective leaders understand that there is more leverage in using quarterly results as a metric for long-term improvement than in worrying only about short-term market wins. By using results as a diagnostic tool in the service of improving future execution, and by asking employees to participate in the analysis, effective leaders encourage honesty and engage their troops in open dialogue. Employees are more likely to generate good ideas, and the firm is more likely to surpass financial expectations quarter after quarter.

I had the pleasure of working for six years under John Adler, former CEO of the technology firm Adaptec. During his 12 years at the helm, Adler drove the company's valuation from $100 million to over $5 billion because he had a very healthy attitude about business goals and financial results. For him, results were not a punitive weapon but a useful diagnostic and learning tool. When the firm, at one point, missed a quarterly goal, he and his management team analyzed all the factors contributing to the shortfall. They discovered that, as a result of an unusual quality-control issue, the company had been unable to make some end-of-quarter shipments. Instead of reacting emotionally and assigning blame, Adler asked rigorous questions of the senior management team, which was able to uncover the root cause of the problem. He communicated this information broadly to ensure organizational learning. By focusing on and taking responsibility for the truth, Adler made others in the company feel safe to discuss the issue without fear of an emotional response that might lead to arbitrary punishment.

Through his actions, Adler sent an implicit message that the past was over and tomorrow was another day. Rather than being immobilized by uncertainty and wondering who would be forced to take the heat, software engineers and quality assurance technicians worked together to improve their processes to minimize the probability of missing sales projections because of last-minute quality or manufacturing glitches. From that point forward, the company's track record for quality was the envy of the industry. By adjusting his "swing," Adler was able to achieve accurate, consistently excellent results for the duration of his tenure.

The Leader's Sense of His or Her Job

MESSAGE 3

CEOs wear many hats and play many roles in the service of leadership, but, surrounded by people who seek their feedback and approval, some fall into the trap of thinking that their responsibility is to be the person who has all the answers. (This is especially true of entrepreneurial CEOs who are also founders, because their identities are closely tied with their companies.) The "answer man" falsely believes himself to be the final arbiter of conflicts, decisions, and dilemmas. This puts him in a very lonely, isolated position where information becomes unreliable and useful input is stifled.

A CEO I'll call Jim, who ran a once blazingly successful and now defunct desktop-publishing software firm, had been told his whole life that he was brilliant–and he was.

When a reorganization is presented as simply a guideline for defining goals and optimizing resources, it LOSES ITS REPUTATION AS A PROXY for shifts in personal power.

The recipient of an MBA from Stanford and a PhD from MIT and the holder of ten software patents, Jim was also a Midas: Everything he touched seemed to turn to gold. It wasn't much of a leap for him to assume that because he was so smart, he necessarily knew what was best for the company. Jim took great comfort in this assumption; indeed, since he was deeply insecure in other leadership areas, his identity rested on it.

Though Jim made a point of hiring the best and the brightest from top engineering and business schools, he didn't listen to his new team. Strategy, for example, was not Jim's strongest suit, but he believed he knew best how to combat competitive threats. When his managers made suggestions for staving off the competition, Jim ignored them, using his positional power to drown out discussion. He'd say of a rival company: "There's no way those guys could be close to our technology. I've met the CEO there and I know we can beat them. I will explain what we have to do." While forceful and somewhat persuasive, he was out of touch with market reality, and his team knew it. Frustrated, his managers soon grasped the implicit message that they were neither heard nor valued, and they began to flee the company, taking much intellectual capital with them. Jim, oblivious to perceptions of his own behavior, was baffled by the exodus, telling himself that the people who left didn't "get it."

Effective leaders, by contrast, understand that their role is to bring out the answers in others. They do this by very clearly and explicitly seeking contributions, challenges, and collaboration from the people who report to them, using their positional power not to dominate but rather to drive the decision-making process. The more collaborative and apolitical that process is, the less isolated the leader, and the greater the likelihood that the business strategy will be grounded in reality.

Contrast Jim's understanding and communication of his role to that of a CEO I'll call Chris, who ran a technology research firm. Chris, too, was brilliant and confident–top of his class at Harvard and a military hero in the Gulf War–but instead of expressing his intelligence arrogantly, he conveyed curiosity. In functional meetings, he communicated that for the duration of the session, he wouldn't wield his positional power as CEO but instead would be just another contributor of ideas. He listened to everyone's point of view before expressing his own. He posed questions and challenged opinions. In one meeting with his marketing team, he listened to presentations from public relations, marketing, and advertising managers. When he finally spoke, he noted that the company had outspent competitors in a bid to raise visibility for its flagship product but had yet to make a dent in competitors' market share. He asked that a smaller group convene within a week to find out why. Aware that the "boss's answer" would stifle the group's creativity and thus do more harm than good, he resisted the temptation to state his own theory.

In asking his team to be accountable for diagnosing the problem, Chris didn't accuse anyone or cast blame. He thereby conveyed that his role was to help the team process information. He made it clear to the people who worked for him that it was not his job to provide the answers, but rather to help find the best solutions. His authentically collaborative approach encouraged the smart people around him to contribute their ideas. The task force generated a half dozen thoughtful and feasible theories and several comprehensive recovery plans, the most compelling of which was put into action. It produced the hoped-for changes in market share in the next three quarters. In the process, several ideas for other successful marketing campaigns were born. As a result of his leadership, Chris's firm established itself as a powerhouse of intellectual capital in the technology arena. His company is now regarded as a unique source of market information and is paid handsome fees to publish its findings.

Like the Level 5 leaders Jim Collins describes, Chris led by separating his ego from his job. Leaders like Chris understand that their role is to ask great questions, and they know that answers can be found as long as employees feel safe offering them. Accordingly, the entire team moves the company forward.

Time Management

MESSAGE 4

Every executive feels that time is in short supply. Organizers, time management classes, and administrative assistants remind us of the time we don't have. Obsessed with deadlines, managers struggle against constraints by trying to squeeze, manipulate, and control the limited hours in the day. When the CEO gives employees the message that time is the boss, the "to-do list" mentality can easily subsume important goals.

Allow me to illustrate with an extreme-sounding but true example of a CEO with whom I worked. Alan, as I'll call him, was the busy head of a midsize technology firm in Silicon Valley. A former engineer who was ruled by his Day-Timer, to-do list, and BlackBerry, he started every day feeling that he was "behind," long before the opening bell on Wall Street. The time management system was his scripture, efficiency his credo, and prioritizing his Job 1. Alan's fixed idea was that time was the enemy; he communicated this message to his team, telling the members that by managing time better than their counterparts at rival firms, they could drive the company to success. His obsession with time created a palpable anxiety.

When economic conditions in the valley worsened, Alan was forced to impose a moratorium on head-count growth. Then the company received a request for proposal from BellSouth. Alan jumped at the opportunity to make a big software sale and focused his already stretched workforce on the project. Implicitly, time management became the operational currency of the organization. Alan became even more conscious of employees' use of time, so he separated elements of the project into streams, telling his direct reports where and how to use their hours and minutes to produce the RFP. When he was giving feedback to his direct reports, his first question was about how they used the time they devoted to their work. Despite everyone's efforts, however, there weren't enough hours in the day to keep up.

The company submitted the RFP on time, all its i's dotted and t's crossed, then waited with bated breath for what Alan was certain would be a positive response from BellSouth. But the company lost to a firm with inferior technology. The problem had less to do with the content of the proposal than with the way it was delivered. Alan and his team had created a perfect RFP but failed to invest in any relationship building with anyone at BellSouth. The competitor, by contrast, had developed close relationships with the telecommunications firm. Simply put, Alan's people were so obsessed with meeting tasks on deadline that they had lost sight of the project as a whole, and the customer in particular. It was as if the cooks at Alan's firm had made an exquisite, five-course dinner but had forgotten the wine, the tablecloth, and the flowers and had served the food cold. They delivered what Alan said he expected.

A CEO can be more effective if she communicates to the company that the resource of time must not be squeezed for all it is worth but instead must be strategically utilized. It's a subtle but important distinction. A leader who harps on time constraints and breathes down managers' necks, trying to get them to do too much in the allotted period, can make the organization frantic and, ultimately, ineffective. A leader who communicates that when time is tight, it's better to do fewer things – but do them very well – gives managers the confidence to make the best use of this precious resource. That way, everyone involved works within the time parameters to do what needs to be done.

CHANGE YOUR MIND-SET

When executives assume that managerial topics are understood the same way by everyone, they surrender the opportunity to lead effectively. Leaders who explicitly say what they mean are better able to leverage the energy and commitment of their followers.

MESSAGE	CONVENTIONAL MENTAL MODEL	TRY THIS
1 Organizational structure and hierarchy	Make the org chart a proxy for politics.	Optimize human resources.
2 Financial results	Penalize misses. Blame someone.	Perform a diagnostic to determine the root cause of any shortfalls.
3 The leader's sense of his or her job	The boss has the answers.	Everyone has answers – ask questions.
4 Time management	Time is scarce, so scramble against constraints.	Time is fixed, so choose wisely within constraints.
5 Corporate culture	Hand the responsibility to HR.	Create an environment in which everyone can help the team win.

If a top executive says employees need to "focus on our promised results," SENIOR MANAGERS OFTEN INTERPRET that to mean "Do whatever it takes to meet investors' expectations."

One leader who understands the importance of communicating properly about time is Mark King, the CEO of TaylorMade-adidas Golf. King desperately wanted to launch an industry-changing product to mark the company's 25th anniversary in the spring of 2004. The golf equipment business, like music, cars, and fashion, is trend driven; King knew that if his company could develop a breakthrough product and launch it at a very powerful point in the industry's history, the company would cement its status as golf's leading performance brand.

At first, King envisioned an entire new line of clubs based on the bold idea of movable weight, and he set all his best engineers working on development. They put in long hours, but as the six-month mark neared, he realized that his objective would be impossible to meet by the anniversary date. He could not ask for more time from the team, nor could he change the deadline. So he changed the goal. TaylorMade would develop a single golf club that would showcase the technology of movable weight, and the product would debut at the anniversary event in front of hundreds of reporters and industry influencers.

Instead of struggling against time, King shifted his choices within the time constraint. How, he asked himself, could his teams best use their hours? Instead of playing beat the clock by trying to do everything he wished, where could they best focus their energy? How could time be optimized? By understanding that he had a choice about how the limited time could best be used, he was able to free up needed technical and marketing resources and focus on quality and branding.

The new TaylorMade r7 quad driver, unveiled on the anniversary, garnered rave reviews. PGA and European Tour golfers snapped it up. By the time the 2004 PGA and European tours came to an end, half the professionals worldwide owned the new driver, guaranteeing its popularity among the golfing public. A dozen additional products followed, completing the team's vision for the line of clubs. The meal was well planned, cooked, and served. Today, TaylorMade is the fastest growing golf-equipment firm in the world, and its r7 driver is the flagship product in a multihundred-million-dollar product line.

Alan, the technology company CEO, sent the message that time was to be fought against, and he set unreasonable expectations. Mark King's message was that time was not the enemy, just a fact of the situation, and there were other, more controllable levers that could be used to meet the challenges at hand. Alan saw time as a fearsome, inflexible monster, best overcome by brute force; King saw it as a neutral phenomenon, best handled with flexibility. Both men had a strong vision of what success would look like, but King was willing to make trade-offs in the service of quality. (See the sidebar "84 Great Things.")

Corporate Culture

MESSAGE 5

What is corporate culture, and why is communicating clearly and precisely about it important? Culture is not created by declaration; it derives from expectations focused on winning. You can only have a culture that encourages performance if you hire the right people, require them to behave in a way that is consistent with the values the company espouses, and implement processes that will allow the company to win in the marketplace.

CEOs who fail to define success and communicate their vision of it, and fail to make their expectations clear to employees, produce meaningless cultures. The silly cultural activity arising from the high-tech bubble of the late 1990s is a wonderful example. I remember one Silicon Valley CEO who opened the "culture cupboard" and fed employees with all kinds of treats–Friday beer bashes, foosball tables, and the like. He even hired a "chief culture officer," an HR executive whose job was making employees feel fleetingly happy, even when the company lost a client or had a bad quarter. The idea was that if people felt good, if they were "empowered" and were working together, then good results would follow naturally. It was all about employee morale and attitude and teamwork. But managers lost sight of core business metrics. In the end, people wanted to work for a firm that did more than cheerlead them–they wanted a share in a successful IPO. Eventually, the company was acquired for mere asset value because instead of developing a winning strategy, the CEO engaged in indulgent avoidance.

A healthy culture is created and maintained by focusing on the right goals and creating the experience of winning in the marketplace. A telephony-software company CEO I'll call Jeff runs his firm like a high-performing sports team. A big, football-style scoreboard on a conference room wall displays the company metrics – sales, expenses, revenues – for all to see. All personnel in the company, screened for their collaborative as well as their analytical skills, work on six-person teams (according to the U.S. Navy SEALs, six is the ideal number of participants on any high-intensity project). Individuals are only as effective as their teams; everyone in the firm adheres to a strict set of values and basic standards of conduct. Finally, everyone in the company knows what winning looks like: a P/E ratio of 15, a market share of 20%, and 30% year-over-year revenue growth. If the company's goal is to make $20 million by the third quarter, the goal is broken down into strategic parts marked on the scoreboard. The spirit of the company is a function of its collective commitment to success, not the most recent company outing. Successful companies are places where people want to come to work – not to be coddled but to make a difference.

In companies with healthy cultures, employees aren't kept in the dark; rather, they are supported in the belief that they are part of an exciting future. They come to work with a fire inside them, a result of clearly stated leadership and business practices that everyone explicitly understands. Every person in the company knows how to individually contribute to its future.

• • •

By recognizing the impact of clear and direct communication and seeking feedback from their teams, leaders leverage, rather than abuse, their positional power. The most effective leaders I know, CEOs who understand that the risks of miscommunication are very high, ask themselves the following questions on their way to work: What needs to happen today so that we can get where we want to go? Where is there confusion in my company? What vague belief or notion can I clarify or debunk today? What have I not communicated completely or clearly? What kinds of things are people taking for granted?

In the end, the power of clear communication is really a game of leverage. A CEO who communicates precisely to ten direct reports, each of whom communicates with equal precision to 40 other talented employees, effectively aligns the organization's commitment and energy around a clear, well-understood, shared vision of the company's real goals, priorities, and opportunities. He or she saves the company time, money, and resources and allows extraordinary things to happen.

Reprint R0605G; HBR OnPoint 432X
To order, see page 159.

DAVE CARPENTER

"This ensures that we don't overanalyze."

BIOTECHNOLOGY

LEADS THE WAY

by April W. Klimley

Biotechnology has transformed the health care industry and has changed the way people are treated for disease. In three short decades, the industry has reached a new level of maturity. Now it is expanding into other fields—leading the way in sectors such as national defense and industrial development.

Signs of this expansion are everywhere, from the explosion in biotechnology hubs from Scotland to Singapore to a resurgence in VC financing and biotech IPOs. In the United States, state governments are actively vying for biotechnology investment, while the Department of Defense is exploring new ways to defend against bioterrorism using industry breakthroughs.

"Biotech is not just biotechnology and pharmaceuticals anymore," explains Scott Morrison, a leader in Ernst & Young's biotechnology sector. "There are a lot more uses for biotech, such as agricultural, industrial, and even nanotechnology. That is why so many countries are jumping into these initiatives."

Transforming health care

Of course, biotechnology has had the greatest impact on health care. Advances such as high throughput screening, which makes it possible to better identify targets for treatment, and DNA sequencing machines, which speed up the process of mapping the human genome, have transformed the way medicine is practiced. This new genetic knowledge has resulted in the development of a growing number of drugs targeting very specific diseases. Called biologics, these medicines or therapies are produced through biological processes rather than by chemical synthesis, as in the case of the "small-molecule" drugs produced by the large pharmaceutical companies.

Today, there are more than 300 biotech drug products and vaccines on the market that take aim at more than 200 medical conditions, including macular degeneration, multiple sclerosis, AIDS, and Alzheimer's disease. In addition, hundreds of important medical diagnostic tests have been developed in the last few decades, from the home pregnancy test to DNA fingerprinting.

Biotechnology firms reached a milestone in 2003 when they received more approvals for new compounds from the Food and Drug Administration (FDA) than the large drug companies. These firms have continued to build strong pipelines and have received approval for a steady stream of new therapeutics since then. Last year's crop included two drugs from Amylin Pharmaceuticals: Byetta and Symlin, both treatments for diabetes; and one from Celgene: Revlimid, a treatment for transfusion-dependent anemia.

Breakthroughs such as these have transformed the standard medical discovery paradigm from a single-minded focus on blockbuster drugs that treat widespread disease to a focus on targeted therapeutics for medical conditions that affect smaller populations. Simultaneously, they have turned many hitherto fatal diseases into chronic conditions—which warrant a different type of treatment, medication, and support services than in the past.

Personalized medicine becomes a reality

Some of these new therapeutics only work successfully in conjunction with diagnostic testing. By identifying which patients will benefit from certain medicines, genetic testing has created an entire new field called "personalized medicine" or pharmacogenomics. Genentech's Herceptin was the first well-publicized drug in this category. Approved in 1998, Herceptin reduces cancer recurrences in patients who carry the HER2 gene, a gene that regulates cell growth. Through genetic makeup screening, the patients who produce too much HER2 can be identified and given the drug.

This past year saw another advancement in personalized medicine: The FDA approved BiDil, a drug produced by NitroMed that is specifically targeted to African Americans to lower the incidence of deaths in those who have had congestive heart failure. This result was discovered in clinical trails. BiDil is the first drug to be targeted exclusively to an ethnic population.

Drugs like BiDil, Byetta, and Revlimid have been good for the biotech industry. Although these companies have yet to have blockbusters like the giant pharmas, the biotech industry as a whole now has at least three therapeutics in the top 10 list of prescription drugs sold in the United States.

Successes like these, coupled with a full pipeline, have brought the biotech industry steadily toward profitability. "The 2005 story of the day was therapeutic products," observes Ernst & Young's Morrison. He says this is a new, positive development, and contrasts this situation with the early 2000s when many biotech firms concentrated on the creation of new technologies to create therapeutics. Now, with more products in the marketplace, he predicts that the industry may be profitable by 2010 or even earlier.

In the last few years, the capital markets have also been kinder to biotech firms—an industry that traditionally has needed substantial funding, since development time for most biologics, like small molecule drugs, takes years, and hundreds of thousands of dollars. In 2005, according to Nick Galakatos of Clarus Ventures, a VC specializing in biotech funding, total VC dollars invested in life sciences including biotechs came back up from a dip in 2003 to $7 billion. In addition, he noted that "inflows and outflows" were balanced, suggesting that "the industry is very healthy."

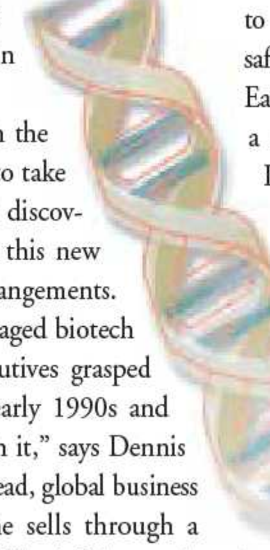
While most biotech companies remain very small and nimble, others have achieved so much success that the line between them and their larger pharmaceutical brothers is fading. Today at least three biotechs are in the top 15 pharmaceutical/biotechs in capitalization: Amgen, Genentech, and Gilead Sciences. Not only are these biotechs as big as some of the drug companies, they also have the integrated systems needed to take their compounds from discovery right through commercialization.

The large pharmaceutical firms, meanwhile, have tried to incorporate some of the nimbleness, speed and creativity of biotechs into their own product pipeline. They have done this a number of ways: by revamping their internal R&D discovery process; by forging alliances and in-licensing arrangements; and even by creating new research centers patterned after biotechnology firms.

The big drug companies adjust their pipelines

Biotechnology is changing how—and where—the big drugmakers do business. Swiss-based pharmaceutical giant

Novartis, for instance, recently built the Novartis Institute for Biomedical Research on MIT commercial property in Cambridge, MA, a hotbed of biotech research. The company said it was attracted by the strong pool of scientific talent in the area and it plans to center Novartis research activities there. In addition, this research center brings Novartis physically closer to some biotech alliance partners, such as Avalon Pharmaceuticals, based in Germantown, MD.



Alliances are another way in which the large drug companies have been able to take advantage of biotech inventions and discoveries. Roche is one of the leaders in this new world of alliances and in-licensing arrangements. It has one of the largest and best-managed biotech pipelines in the industry. "Our executives grasped the concept behind biotech in the early 1990s and had the courage to do something with it," says Dennis Burns, Roche's vice president, global head, global business development. Tamiflu, which Roche sells through a licensing arrangement with biotech Gilead Sciences, is one of Roche's most visible co-development successes. The company is highly regarded for its formal alliance process, as well as innovations such as its network of "global alliance directors."

Today, biotech firms are even forming alliances with one another—a true sign of maturity in the industry. In 2004, biotech-to-biotech alliances accounted for 57 percent of total industry partnerships. These arrangements enable biotech firms to maintain their independence longer and be less pressured to move from a licensing partner to being acquired by a much-larger pharmaceutical firm.

The "critical path" to FDA approval

While biotechnology has matured, the U.S. regulatory process has lagged behind the industry. In fact, over the past decade the FDA has seen its pipeline of compounds, drugs, and medical devices waiting for approval decline, not rise. This problem has been compounded by a number of negative incidents involving drug safety and production, most notably, the withdrawal of Merck's blockbuster drug Vioxx from the market in 2004.

These problems seem to have strengthened the FDA's resolve to find new tools and techniques to better evaluate the new generation of therapeutics and drugs. In 2004, the FDA issued its Critical Path Initiative (CPI) report, which described the pressing need to modernize the product-development process, i.e., the Critical Path. This past March, the FDA issued another paper, a Critical Path Opportunities List and Report, which offered examples of how new discoveries could be applied to improve the accuracy of FDA tests and predict the safety and efficacy of investigational medical products. Earlier in the year, the FDA announced its partnership with a new, publicly funded organization, the Critical Path Institute (C-Path), to bring FDA scientists together with academe and industry to better address CPI goals.

Reinventing the Biotech Industry Organization (BIO)

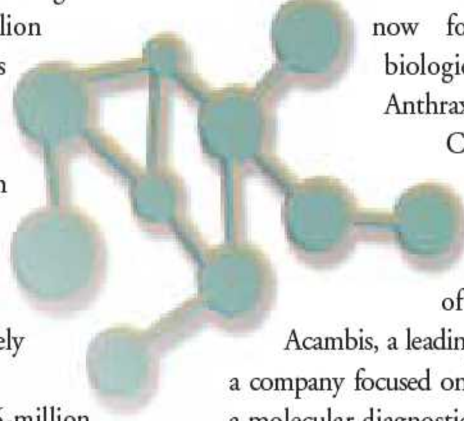
As biotechnology has grown, so has the need for a strong voice in Washington. The industry is faced with an increasing number of regulatory and legislative issues. That need may be answered by the Biotechnology Industry Organization (BIO), founded 16 years ago, but never considered an equal to the pharmaceutical industry's representation in Washington.

Under the leadership of Jim Greenwood, BIO's new CEO and a former Pennsylvania congressman, that may be changing. During his first year in office, Greenwood restructured BIO by bringing in a more dynamic, Washington-savvy staff including insiders such as Scott Whitaker, now COO, who previously served as chief of staff at the Department of Health and Human Services, and Amit Sachdey, a former top FDA official. He has also made sure BIO took a strong stand on major issues, such as guidelines for approval of generic versions of biotech medicines, and has strengthened BIO's role as a funding matchmaker for industry start-ups.

The global impact of biotechnology

Today, the United States remains the center of biotech innovation. About 80 percent of the world's publicly traded biotech companies, measured by market capitalization, are located there, according to Ernst & Young's 2005 Biotech Report. These companies remain largely bi-coastal, located primarily in California (the home of the largest firms) and along the Eastern seaboard.

But there has also been considerable activity in Canada and Europe, where governments have worked hard to create "biotechnology hubs," places where research and industry intersect. Ireland, for example, is gearing up to become a major hub. Ireland already benefits from the presence of a number of large pharmaceutical manufacturing facilities. It also has a motivated, well-trained, English-speaking workforce. These factors make it a very appealing location for biotech companies. And, according to Barry O'Leary, senior vice president, life sciences, at the Industrial Development Association of Ireland (IDA Ireland), the government is adding another attraction—construction of a $75-million National Institute for Bioprocess Research and Training.



Asian countries are also creating their own biotechnology hubs. Both India and China are working hard to attract biotech firms. According to E&Y's Morrison, there are already 700 biotech companies in Asia, approximately 100 of them publicly traded.

Recently, Malaysia launched a $26-million biotech fund to support biotechnology research and development. To spearhead this initiative, the government created the Malaysian Biotechnology Corporation, headed by CEO Iskandar Mahmood. According to Mahmood, one thrust of the program will be to capitalize on the strengths of biodiversity in the country and to commercialize discoveries with good value propositions in biomedical, agricultural, and industrial biotechnology.

Industrial and environmental development

Outside of health care, two other biotech revolutions seem to be brewing. One is agricultural biotech, which is primarily genetically modified crops, and the other is industrial and environmental development. On the industrial side, enzymes have long been used to aid chemical processes. They are used in everything from the processing of waste materials to the creation of stonewashed jeans. This trend is continuing.

But a new emphasis has sprung up on biofuels and biodefense. In the United States, for instance, there is strong support for President Bush's call for fuel alternatives, in particular cellulosic ethanol produced from plant products (like saw grass) to replace oil-derived products. Although the major chemical companies like Dow and DuPont have been working on this for years and have not yet come up with realistic, low-cost replacements, there seems to be a resurgence of interest in finding solutions. The Energy Policy Act of 2005 provided for strong research programs at the Departments of Energy and Agriculture, and President Bush has proposed increasing the funding for this research to $120 million for 2007.

Meanwhile, bioterrorism has been in the limelight ever since the Anthrax scare after 9/ll. No wonder a number of new and existing biotech companies are now focusing on ways to counter biological threats from substances such as Anthrax, nerve gas and the Ebola virus. Companies that have benefited from greater government spending on biodefense include Abenix, which focuses on the development of human therapeutic antibodies; Acambis, a leading developer of vaccines; Gen-Probe, a company focused on nucleic acid testing; and Cepheid, a molecular diagnostics company.

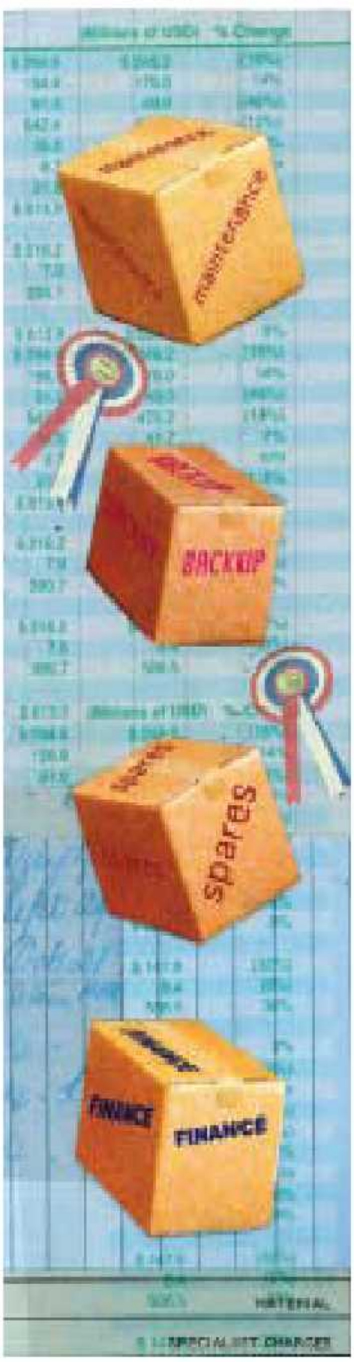
A convergence of technologies

All this activity suggests that the biotechnology revolution is expanding. It is moving from the health care industry into other areas that will benefit large populations, tackling problems from feeding the world's poor to cleaning up the environment. These broader benefits are one reason the industry is so appealing to developing countries. As Malaysia's Mahmood puts it, "We see biotech as one of the key engines of growth in the future. But it is also a means to an end, a way to create economic activity and social well-being as well."

In fact, biotechnology is part of a much broader revolution already under way. Jim Greenwood, CEO of BIO, explains: "There is a convergence of three technologies. Biotechnology, information technology, and nanotechnology are converging into a molecular revolution. This steep trajectory will transform our existence."

April W. Klimley *is an award-winning writer and editor whose work has appeared in many publications, including* Fortune, Business Week, *and* Forbes. *She also edits* Visions, *a quarterly magazine on "Insights into innovation"™ published by the Product Development & Management Association (PDMA). www.info@klimley.com*

Companies realize the importance of providing spare parts and after-sales services, but most could make far more money in the aftermarket than they do. Here's how.



MARTIN O'NEILL

Winning in the Aftermarket

by Morris A. Cohen, Narendra Agrawal, and Vipul Agrawal

THIS IS THE GOLDEN AGE of services, and to survive and prosper, we're told, every company must transform itself into a services business. Executives swear by that services-centric view of the world, but privately, they admit to one niggling concern: Most companies either don't know how or don't care to provide after-sales services effectively. Top managements the world over treat aftermarket services as a mere afterthought.

But ignoring the promise of after-sales services is imprudent, to say the least. Since the early 1990s, companies in North America, Western Europe, and Japan have stopped pushing products and started delivering the value that customers get out of using those products. They changed tack because demand slowed, competition intensified, and profit margins imploded. As businesses began offering solutions instead of products, it became evident that selling spare parts and after-sales services – conducting repairs; installing upgrades; reconditioning equipment; carrying out inspections and day-to-day maintenance; offering technical support, consulting, and training; and arranging finances – could be a bountiful source of revenues and profits as well.

How bountiful? In industries such as automobiles, white goods, industrial machinery, and information technology, companies have sold so many units over the years that their aftermarkets have become four to five times larger than the original equipment businesses. Although there are few reliable estimates, research firm Aberdeen Group pegs the sale of spare parts and after-sales services in the United States at 8% of annual gross domestic product. That means American businesses and consumers spend approximately $1 trillion every year on assets they already own. It also means that the U.S. aftermarket is bigger than all but the world's eight largest economies. No wonder executives at the Wharton-Stanford Service Supply Chain Thought Leaders Forum in October 2004 said that their firms generate between 29% and 50% of their revenues by servicing products.

After-sales services are a high-margin business, and they account for a large chunk of corporate profits. According to a 1999 AMR Research report, businesses earn 45% of gross profits from the aftermarket, although it accounts for only 24% of revenues. An Accenture study, for instance, reveals that GM earned relatively more profits from $9 billion in after-sales revenues in 2001 than it did from $150 billion of income from car sales. Wall Street tracks companies' aftermarket prowess, and studies show that there's a direct correlation between stock prices and the quality of firms' after-sales services. Corporations such as ABB, Caterpillar, GE, and Saturn have won customers' undying loyalty by providing top after-sales services. In fact, one number that tells a company how loyal its customers are likely to be is how high they rate the firm's after-sales services.

Despite the aftermarket's obvious charms, however, most organizations squander its potential. They perceive after-sales services to be a necessary evil and behave as though big business-to-business service contracts, small business-to-consumer warranties, and everything in between were–like taxes–a needless expense. That's mainly because after-sales support is notoriously difficult to manage, and only companies that provide services efficiently can make money from them. It's shocking to see how poorly large companies manage service networks, which the production and sales functions treat as stepchildren. Some years ago when we studied the after-sales network of one of America's biggest automobile manufacturers, we found little coordination between the company's spare-parts warehouses and its dealers. Roughly 50% of consumers with problems faced unnecessary delays in getting vehicles repaired because dealers didn't have the right parts to fix them.

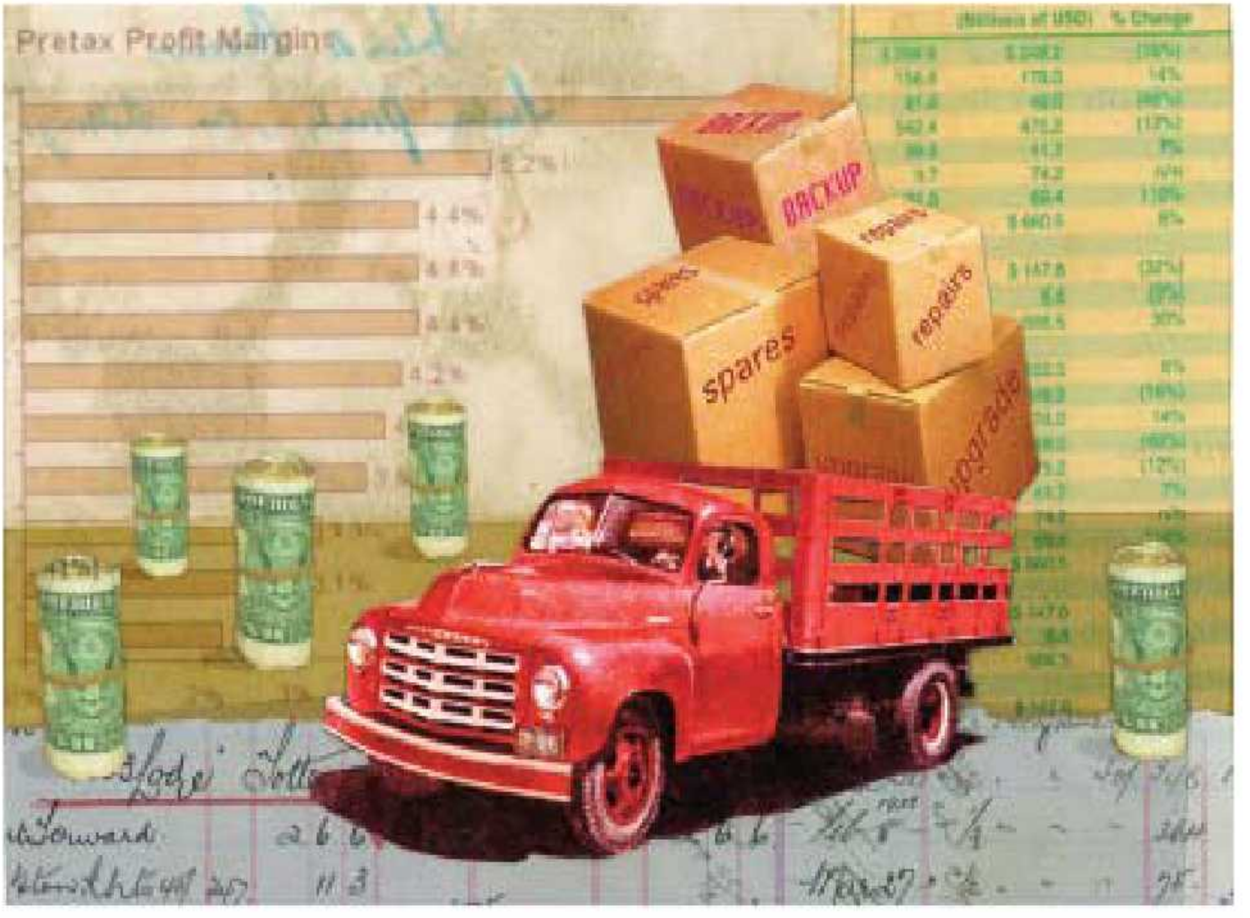
Although original equipment manufacturers (OEMs) carry, on average, 10% of annual sales as spares, most don't get the best out of those assets. People and facilities are often idle, inventory turns of just one to two times annually are common, and a whopping 23% of parts become obsolete every year. Some OEMs are content to let independent service providers cater to customers. Indeed, third-party vendors have become so price competitive that OEMs lose most of the aftermarket the moment the initial warranty period ends.

American businesses and consumers spend approximately $1 trillion every year on assets they already own.

Customers don't expect products to be perfect, but they do expect manufacturers to fix things quickly when they break down. Not surprisingly, customers are usually unhappy with the quality of after-sales support. In 1997, when we conducted the first ever study on the links between after-sales services and customer satisfaction, we found that satisfaction levels were between 10% and 15% below customers' expectations. The divergence would probably be higher today, since customer expectations have shot up over the years. In the 1980s, for instance, semiconductor manufacturers were content with a two-day response time if equipment failed; today, they expect suppliers to respond to requests for help within 15 minutes. In fact, some newcomers have even managed to topple incumbents by providing better after-sales services. In the automobile industry, for example, there's a distinct correlation between the quality of after-sales service and customer intent to repurchase. Brands like Lexus and Saturn inspire repeat purchases by providing superior service, and, consequently, they have overtaken well-established rivals like Ford and Chrysler.

Companies can benefit in several strategic ways by focusing on after-sales services. Providing support generates a low-risk revenue stream over a long period of time. Aircraft manufacturers, for instance, can reap additional revenues for as long as 25 years after a sale. The longer the life of the asset, the more opportunities companies will find down the line. Also, increasing sales of parts and service-related products costs businesses far less than finding new customers, though they can successfully cross sell and up sell only if the support they offer satisfies existing customers. After-sales services can be a source of differentiation as well. Companies' use of contract manufacturers and the development of global manufacturing standards have led to the homogenization of products. Being on par with your rivals in performance, price, and quality gets you into the game; after-sales services can win you the game. Finally, when businesses provide aftermarket support, they gain a deep understanding of customers' technologies, processes, and plans – knowledge that rivals can't easily acquire. That provides companies with an unlikely, but sustainable, competitive advantage.

Morris A. Cohen *(cohen@wharton.upenn.edu) is the Panasonic Professor of Manufacturing and Logistics at the University of Pennsylvania's Wharton School and a cofounder and the chairman of MCA Solutions, an after-sales services supply chain software company based in Philadelphia.* ***Narendra Agrawal*** *(nagrawal@scu.edu) is an associate professor of operations management at the Leavey School of Business at Santa Clara University in California.* ***Vipul Agrawal*** *(vipul.agrawal@mcasolutions.com) is a cofounder and the executive vice president of products at MCA Solutions.*



Tackling Aftermarket Challenges

It isn't surprising, though, that companies find it tough to compete in the aftermarket. Across industries, delivering after-sales services is more complex than manufacturing products. When delivering service products, executives have to deploy parts, people, and equipment at more locations than they do to make products. An after-sales network has to support all the goods a company has sold in the past as well as those it currently makes. Each generation has different parts and vendors, so the service network often has to cope with 20 times the number of SKUs that the manufacturing function deals with. Businesses also have to train service personnel, who are dispersed all over the world, in a variety of technical skills. Moreover, after-sales networks operate in an unpredictable and inconsistent marketplace because demands for repairs crop up unexpectedly and sporadically. On top of that, companies have to handle – in an environmentally safe fashion – the return, repair, and disposal of failed components.

Most businesses don't appreciate those myriad challenges. They blindly apply enterprise-resource-planning thinking, processes, and software solutions to tackle the complexity of support networks. In our experience, that doesn't deliver results; the processes and tools that companies use to manufacture goods in a cost-effective manner don't work well in the support business. Here's a simple example. In manufacturing, a quantity and a due date represent a forecast, and the manager's goal is to schedule deliveries so that materials are available just in time. In after-sales support, forecasts for spare parts appear only as probability distributions because breakdowns occur unexpectedly. Executives have to draw up forecasts that can help mitigate risk – not schedules that match forecasts. Most companies don't realize that distinction, and they use a deterministic approach when predicting demand. As a result, companies face mismatches between supply and demand, deliver poor service to customers, and leave profits behind on the table.

We've been studying after-sales service networks for more than two decades. We've worked with giants such as Boeing, Cisco Systems, IBM, KLA-Tencor, and Tellabs to help them improve the quality of the services they offer customers and to increase their financial returns from the businesses. Our research shows that to win in the aftermarket, executives need to recognize that after-sales services are a commitment companies make to respond within a specific time frame to the customer's need for support. That definition has three important managerial implications.

First, companies must approach the promises they make as products that they design, price, produce, and deliver to customers in order to generate revenues. Many businesses don't understand that fundamental idea. For example, executives and engineers at an American semiconductor equipment manufacturer believed until recently that reliability was a core characteristic of products and that they were obliged to help customers get the best out of their machines. Therefore, they offered customers free after-sales services. Only when the company's costs shot through the roof did top management become aware of the strategy's shortcomings. The firm almost went broke before it started charging customers who, incidentally, were happy to pay for post-sale services. Remember that service products, like insurance policies, have well-defined terms that entitle the customer to benefits under specific conditions.

Second, companies must design a portfolio of service products. Different customers have different service needs even though they may own the same product. For example, when a mainframe computer in a stock exchange fails, the financial impact will be more severe than when a mainframe in a library goes down, so the supplier has to offer different kinds of services to the two customers. Service needs also vary at different times. A grounded aircraft means more to the U.S. Air Force during a war than it does during the course of a training exercise. OEMs must study customers' needs, create products that satisfy different segments, and price them according to customers' willingness to pay.

In addition, executives need to design service products based on customer-focused metrics such as machine uptime – not on internally focused metrics such as the part-fill rate, which is the yardstick that most companies use. The level of demand that can be fulfilled through parts at the manufacturer's warehouse has no meaning to the customer if her product hasn't been repaired.

Third, companies should visualize a distinctive after-sales services supply chain that delivers service products to customers through a network of resources: materials (parts), people (engineers, call center staff, depot and warehouse staff, and transportation staff), and infrastructure (for materials movement and storage, repair, transportation, information systems, and communications). Services supply chains and manufacturing supply chains both consist of entities and assets linked by the flow of materials, information, and money, but they differ in many ways. The services supply chain has to handle more SKUs than the manufacturing supply chain; deliver people, parts, and infrastructure rather than just raw materials or finished products; and contend with reverse flows of failed parts. (See the exhibit "Two Chains Compared.") Still, the surface similarities between the two drive management decisions, and that creates inefficient after-sales services supply chains.

Our studies suggest that one crucial distinction between the two kinds of supply chains should differentiate the

Despite the aftermarket's obvious charms, most organizations squander its potential.

Two Chains Compared

Companies neglect after-sales services supply chains because they're tougher to manage than manufacturing supply chains. Their performance suffers by comparison, too.

PARAMETER	MANUFACTURING SUPPLY CHAIN	AFTER-SALES SERVICES SUPPLY CHAIN
Nature of demand	Predictable, can be forecast	Always unpredictable, sporadic
Required response	Standard, can be scheduled	ASAP (same day or next day)
Number of SKUs	Limited	15 to 20 times more
Product portfolio	Largely homogeneous	Always heterogeneous
Delivery network	Depends on nature of product; multiple networks necessary	Single network, capable of delivering different service products
Inventory management aim	Maximize velocity of resources	Pre-position resources
Reverse logistics	Doesn't handle	Handles return, repair, and disposal of failed components
Performance metric	Fill rate	Product availability (uptime)
Inventory turns (The more the better)	Six to 50 a year	One to four a year

operating philosophies applied to them. Companies fulfill demand for after-sales services through physical assets such as spare parts, repair depots, and field engineers. Unlike factories, though, businesses can't produce services in advance of demand. They can manufacture them only when an unpredictable event, such as a product failure, triggers a need. Even when the event is predictable, as in the case of scheduled maintenance, the need for parts or engineers isn't easy to forecast. Unlike in product manufacturing, companies must deploy physical resources in advance of events to respond with the speed promised to customers, and they use up those resources when they cope with demands for support.

Based on that dynamic, we've developed a new paradigm for managing services networks. Our approach involves treating the delivery of services as real options; that is, companies have to make investments to "purchase" options to deliver services to customers, and random events that occur determine how they exercise those options to fulfill demand. This framework recognizes that it isn't enough for the services supply chain to react to mismatches between supply and demand. Executives must plan for those frequent responses and acknowledge that the company has to manage its services network in a dynamic fashion. When companies implemented our ideas, they boosted service quality levels by 10% to 15%, reduced investments in service assets by 25% to 50%, and lowered operating costs by 10%. That's why we believe that companies that don't adopt the following six-step approach are doomed to mediocrity in the aftermarket. (See the sidebar "Six Steps for Managing Service Networks.")

Six Steps for Managing Service Networks

Companies should use a systematic approach to improve after-sales service quality levels, reduce investments in service assets, and cut operating costs.

1. **Identify which products to cover.** Support all, some, complementary, or competing products.
2. **Create a portfolio of service products.** Position service products according to response times and prices.
3. **Select business models to support service products.** Use different models for different products and life cycle stages.
4. **Modify after-sales organizational structures.** Provide visibility, incentives, and focus for services.
5. **Design and manage an after-sales services supply chain.** Decide location of resources, prioritize resource utilization, and plan for contingencies.
6. **Monitor performance continuously.** Evaluate against benchmarks and customer feedback.

Identify the products. As a first step, companies must decide whether to support all the products they sell or only some. For instance, Kodak supports its digital cameras but not its disposables. Many PC manufacturers, such as Dell and Hewlett-Packard, support all the products they currently make but discontinue support for products they have stopped manufacturing. Some businesses choose to service complementary products as well as their own. Others may support competing products in addition to their own to generate economies of scale from the service technologies they've developed. ABB, for instance, supports all the process control equipment in factories that have installed its automation systems, thereby providing a one-stop service solution to customers.

Before companies decide to provide service for products they don't manufacture, though, they must determine whether they can generate synergies in the process. They must ask themselves: Do the assets and skills that we would need to service all those products have anything in common? Do customers really want a one-stop service provider? How critical is support to retaining customers? Will we dilute our brand if we service rival products? Toyota, for example, wouldn't want to be caught servicing Ford trucks. If there aren't many synergies across the products they want to support, businesses should service only the products they make. Firms should be warned that few companies have made money by becoming one-stop service providers.

Design a portfolio of service products. As we stated earlier, businesses must design a portfolio of service products. To do that, they need to analyze the parameters that govern after-sales support from the customer's viewpoint as well as from their own. On the one hand, customers measure a service provider's performance by the amount of time it takes to restore a failed product. They have to weigh the levels of response they need against the prices they are willing to pay. On the other hand, to respond quickly to breakdowns, manufacturers have to locate spare parts close to customers and invest in larger stockpiles. The faster the response that manufacturers promise, the greater their costs will be. Thus, instead of segmenting customers by sales volumes, geography, or technological capabilities, companies must create a variety of service products that meet customers' needs and willingness to pay. Service products usually range from those that are fast and expensive – platinum services, as they're commonly known – to those that are slow and economic – silver services.

Developing too few or too many service products reduces quality levels and profits. Many companies provide a one-size-fits-all product, which often increases costs. A Silicon Valley–based semiconductor company, for instance, offered the same high level of support to all its customers at a throwaway price. The demand for those services drained the company's human resources, and it had to bring in design engineers to help resolve problems. That caused delays in the development of new products, and, less than seven years after starting up, the business filed for bankruptcy. Yet developing customized products for every customer or product would be prohibitive because of the delivery costs. For example, an American telecommunications company signed 15 same-day service contracts with customers, promising response times that ranged from one hour to eight hours. But the corporation couldn't live up to its agreements, and its reputation took a beating in the aftermarket. Businesses should develop products that maximize synergies between the resources required to provide the services. For example, Sears sells white goods made by several manufacturers and offers after-sales support for them. The retailer makes money only because it uses the same repair centers and technicians to service all of those products.

Use multiple business models. Companies can support service products by deploying one or more business models at the same time. When customers want low levels of service, companies can use an ad hoc business model, which allows customers to pay per use. When a product's functioning is critical, companies can use a performance-based model, whereby customers pay for services according to the way products perform. In general, business models differ by product ownership. As shown in the exhibit "Models of After-Sales Services," they may range from conventional ownership-based models to performance-based models for customers that don't own the products they use. For instance, many commercial airlines pay GE and Rolls-Royce an hourly fee for using those companies' aircraft engines instead of buying them.

The business models that a company chooses is important because it drives the incentives of all the players in the services supply chain: manufacturer, service provider, logistics provider, and customer. When customers pay manufacturers for the parts and services they provide to keep products working, for

Models of After-Sales Services

The value companies place on after-sales services will determine the business models that firms can use to deliver them. When services are all-important, manufacturers may choose to sell services rather than the products that generate them.

SERVICE PRIORITY	BUSINESS MODEL	TERMS	EXAMPLE	PRODUCT OWNER
None	Disposal	Dispose of products when they fail or need to be upgraded	Razor blades	Consumer
Low	Ad hoc	Pay for support as needed	TVs	Consumer
Medium-high	Warranty	Pay fixed price as needed	PCs	Consumer
Medium-high	Lease	Pay fixed price for a fixed time; option to buy product	Vehicles	Manufacturer; leasing company
High	Cost-plus	Pay fixed price based on cost and prenegotiated margin	Construction	Customer
Very high	Performance based	Pay based on product's performance	Aircraft	Customer
Very high	Power by the hour	Pay for services used	Aircraft engines	Manufacturer; service provider

example, a conflict of interest arises. Suppliers would like to sell more parts and services, but customers would like to minimize costs. Performance-based models, however, usually align incentives better than ownership-based ones because customers compensate service providers according to the output they deliver. In general, companies should choose performance-based business models when the product is very expensive, the supplier can bear the risk of owning the asset, and both manufacturers and customers can monitor the outcomes of using the product.

The suitability of a business model sometimes depends on the nature of the product. For example, customers may be more inclined to lease computers, which become obsolete quickly, than refrigerators, which are more durable. In some cases, businesses may use different models for the same asset at various stages of its life cycle. The U.S. Department of Defense, for instance, uses a cost-plus service model when it purchases new equipment because it can't predict failure rates. As the product is used more and more, the agency demands performance-based service contracts. When the uncertainty about maintenance costs diminishes, the DOD asks suppliers for fixed-price service contracts.

Determine after-sales organizational structures. Most companies don't pay much attention to the way after-sales services are organized. Consequently, the products division is often nominally responsible for products that are covered by warranties, but the services department, which sells post-warranty services, actually delivers warranty-related support. This overlap leads to organizational tension. For example, if the products division wants to extend the period of the initial warranty, the services department will object because it will lose revenues in the process. Since companies use the same stockpiles of spare parts to provide both warranty-related and non-warranty-related services, the two divisions constantly bicker about which one is responsible for inventory-carrying costs. To resolve those issues, some businesses, such as Saturn, have set up teams of managers from both functions to determine priorities for the use of parts.

Other companies have outsourced the delivery of after-sales services to third-party providers. If a company's objective is to turn service into a core competence, it should retain control of the services function. However, when the opportunities for generating synergies, pooling risks, and achieving economies of scale make third-party service providers a competitive option, manufacturers may have no choice but to outsource the delivery of after-sales services.

Unlike factories, businesses can't produce services in advance of demand. They can manufacture them only when an unpredictable event, such as a product failure, triggers a need.

To manage the after-sales services business effectively, most companies require skills and knowledge they don't yet possess. For instance, suppliers must know exactly how their products create value for customers, which means greater interaction between manufacturers and customers as well as new technological capabilities. Changes in strategy might also involve nudging the sales organization away from selling products at the best possible prices and toward generating income from services over a long period of time. That, in turn, might necessitate lowering the price of the basic product – the razor blade strategy, as it is known. Companies should develop new metrics for evaluating the marketing, services, and manufacturing departments to help prevent discord. For example, companies should measure potential aftermarket revenues while evaluating sales of new products.

Create an after-sales services supply chain. Next, companies must match the supply of resources with demand. The right materials, people, and infrastructure have to be delivered to the right place within an agreed-upon time at the lowest possible cost. Executives find it tough to decide which resources to deploy and where to deploy them because both spares and locations are hierarchical. There's a pecking order to parts and places that complicates stocking decisions.

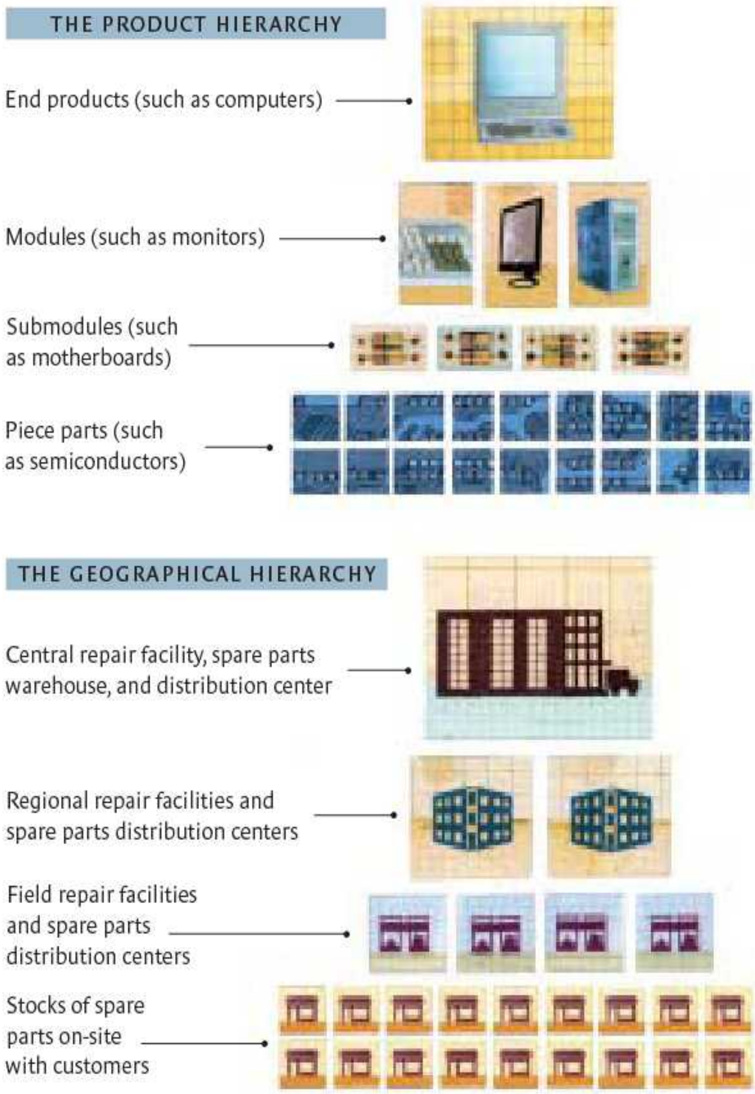
Companies can break products down into end products, modules, submodules, and piece parts, all of which they can use interchangeably to deliver after-sales services. However, each bears a different cost and entails its own response time. Replacing a failed product with a standby end product is faster but more expensive than replacing a module. Replacing a module is faster and more expensive than replacing a submodule. Companies should keep this product hierarchy in mind when deciding what spares to stock.

Similarly, corporations can draw up a hierarchy of locations from which they can supply parts. The central distribution center, which is located farthest away from customers, would be at the top of the geographical hierarchy. Regional and field stocks would be located closer to customers, and manufacturers could also stock parts right on customers' premises. The farther stockpiles are from customers, the slower firms' responses and the lower their costs will be. (See the exhibit "What Hierarchies Reveal.")

The interplay between the product and geographical hierarchies helps companies decide how to deploy assets. The quickest way for companies to meet response targets would be to replace failed products with standby units that they have positioned on customers' premises. To do that, companies would have to put resources from the top of

What Hierarchies Reveal

When a product fails, the supplier can repair or replace it in different ways and from different locations. In the product hierarchy, the higher a spare is ranked, the more expensive it is likely to be. In the geographical hierarchy, the higher a location is ranked, the farther it is likely to be from the customer.



the product hierarchy (complete products) at locations on the bottom of the geographical hierarchy (customer sites). That would be the most expensive way to meet a demand for service, but, depending on the customer's needs, it may well be the most appropriate. For example, a stock exchange that uses Cisco Systems' routers will incur a huge cost if a router fails. Therefore, Cisco should make sure there's a spare router in the customer's office to minimize downtime.

By contrast, the most economical way to meet a service demand is to replace, from the central facility, only the broken parts. That means companies would have to position resources from the bottom of the product hierarchy (components) at locations at the top of the geographical hierarchy (central distribution centers). This would be the slowest option because suppliers would need time to diagnose the problem. Since companies can't easily forecast the demand for resources, they must develop demand probability distributions and make allocation decisions after calculating the trade-offs of stocking different resources at different locations.

These resource deployment decisions are interrelated. An investment in an item at one location will influence investment decisions for many other items in other locations. For instance, positioning a spare unit at a customer's site will decrease the emergency demand for parts from field and regional locations. Similarly, investing in additional stock at a central depot will reduce companies' lead times for replenishing regional and field stockpiles. However, decisions are often limited by the service organization's budget. Assigning a particular asset to a specific location affects decisions about which other parts can be assigned to other locations. A high level of service for one customer may therefore necessitate a lower level of service for another.

The best way for companies to realize economies of scale is to pool spare parts. Companies often create supply chains for each service product. They mandate that their networks should serve premium customers from nearby locations and nonpremium customers from distant locations. But maintaining multiple supply chains is an inefficient solution because businesses can use the same materials and human resources to support different service products. An engine can serve as the replacement for a premium service contract as well as for a standard service contract. In the services business, an asset is an asset, regardless of who uses it. The problem, though, is the free-rider phenomenon: The manufacturer may sometimes allocate a spare part held to serve the needs of a premium customer to a lower-paying customer simply because the latter demand occurred first. Alternatively, a manager may divide the available resources equally between the two customers, thereby giving the premium customer a lower-than-promised priority and the standard buyer a higher-than-promised priority.

To overcome this dilemma, companies must draw up prioritization rules. Consider a situation where the service chain allocates the available inventory of a spare part on a first come, first served basis to any customer until the inventory drops to a threshold level. Below that level, the network will reserve the inventory only for higher-paying customers, and lower-paying customers must wait their turn. Thus, the company maintains a higher priority for the premium customer while simultaneously ensuring a common stockpile. In the white goods industry, where products last a long time and prices don't drop rapidly, the rules-based approach may be cost-effective. Another approach would be for the service network to satisfy demand from a premium customer for a failed product – say, a 30-GB hard drive – by providing a better product, such as a 60-GB drive. In that case, the company would pool risk across products through substitution even as it ensured a higher degree of service for that customer. For example, in the PC industry, the benefits of using new drives as spares are greater than the costs of stocking inventories of old drives, since the price of hard drives can fall rapidly.

Once companies have figured out where to stock which spares, they can calculate the costs of responding to breakdowns. Then firms can create a range of service products, from platinum to silver. (See the exhibit "Creating Service Products.")

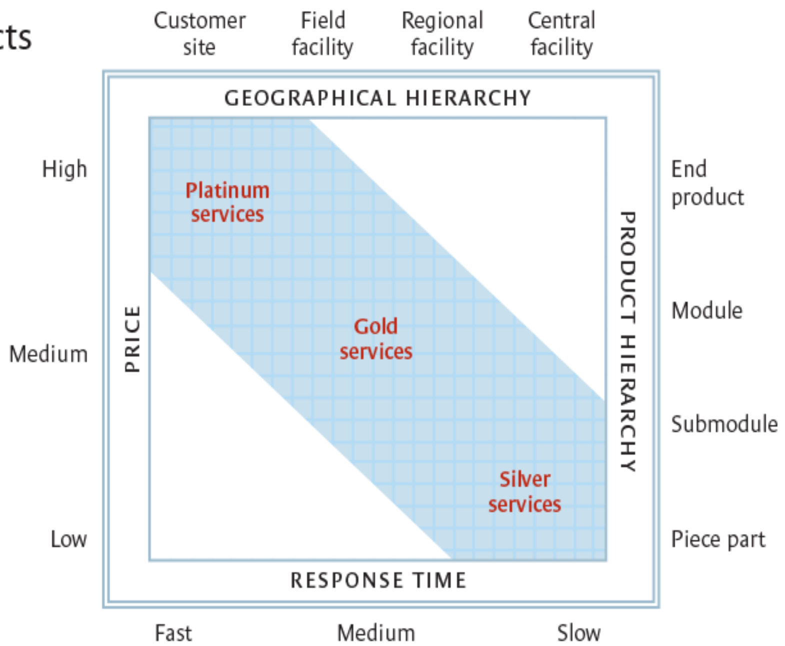
Business strategies, product technologies, and information about product failure rates, which drive many businesses' allocation decisions, will change over time. As a result, executives must sense shifts in the environment and respond with forecasts that allow them to reposition resources. Given the complexity involved in managing service assets, companies should break the decision-making process into three planning periods. At the most immediate level of planning (days), companies should worry about repositioning decisions such as replenishment, allocation, and transshipment of resources. At the next level (weeks or months), managers should address the strategic positioning of material, human, and knowledge resources. At the furthest level of planning (years), companies must make decisions about the services strategy.

A simple way to understand the importance of fine-tuning services supply chains is to watch ESPN. Whether playing ice hockey or tennis, the best athletes can move quickly in response to opponents' plays. Though they have great real-time response capabilities, these competitors rarely hustle at the

Executives find it tough to decide which resources to deploy and where to deploy them because both spares and locations are hierarchical.

Creating Service Products

After companies have figured out where to stock what spare parts, they can determine the costs of responding to breakdowns. They can then offer different service products, from platinum services (which entitle customers to the fastest response time) to silver services (which deliver the slowest response time). The faster the desired response, the more customers must pay.



last moment. They are masters at making strategic moves long before events take place, anticipating opponents' moves and pre-positioning themselves for winning plays. That's precisely the approach companies should use when they design their after-sales services supply chains.

Monitor performance. Companies must monitor the performance of services supply chains because customer needs are always changing. Lockheed Martin, for example, has to cope with a fluid network of facilities to maintain the electronics on F-18 fighter jets, since the jets fly from aircraft carriers that are constantly on the move. And every time Dell gains a commercial customer with computers in many locations, it has to alter the structure of its service network.

Two kinds of metrics prove useful in these cases. Customer-focused metrics – such as the waiting time for technical assistance, the waiting time for diagnosis, and the waiting time for the delivery of parts – can help determine how efficiently a company creates value for its customers. Internally focused metrics – such as fill rates and parts obsolescence costs – can quantify the way companies use their service assets.

Smart businesses keep track of technologies that may force changes in service strategies. In some industries, for instance, wireless two-way communications equipment now allows companies to diagnose, monitor, and proactively solve problems. Companies that use such technologies need to develop new kinds of support networks. Companies would also do well to watch out for new kinds of rivals. Consider, for example, the meteoric rise of Geek Squad in the not-so-exciting world of PC services. Starting with a single person on a bicycle in 1994, Geek Squad has grown into an organization of more than 10,000 Agents driving around America's cities in Geekmobiles (the Volkswagen Beetle is the model of choice). Geek Squad, which Best Buy acquired in 2002, reported revenues of $650 million in 2005, indicating that PC makers should revisit their service strategies.

Learning from Cisco

Cisco Systems, the world's leading manufacturer of networking equipment, lavishes attention on after-sales services, but it faced a challenge some years ago. The company's customer advocacy division, which generated $3.9 billion in revenues in 2005, offers customers troubleshooting services as well as hardware and software support for the hundreds of products it supplies. These products include warranty services that require Cisco to provide spare parts to customers as well as service contracts under which the company must deliver spare parts and field engineers as needed. To fulfill the tens of thousands of contracts it has signed, Cisco uses field engineers from Dimension Data, HP, and IBM.

A high level of service for one customer may necessitate a lower level of service for another.

It uses Choice Logistics, DHL, FedEx, Flash Global Logistics, Ryder System, and UPS for logistics services. And it uses Celestica, Foxconn Electronics, Jabil Circuit, Solectron, and Teleplan to repair parts. Cisco has created a large infrastructure, including 800 fulfillment centers, seven country distribution centers, 18 repair centers; and five materials return-processing centers. The scale of the operation is impressive, but it is a nightmare to monitor and manage, especially since Cisco has to deliver an average of 720,000 spare parts and repair 530,000 parts every year.

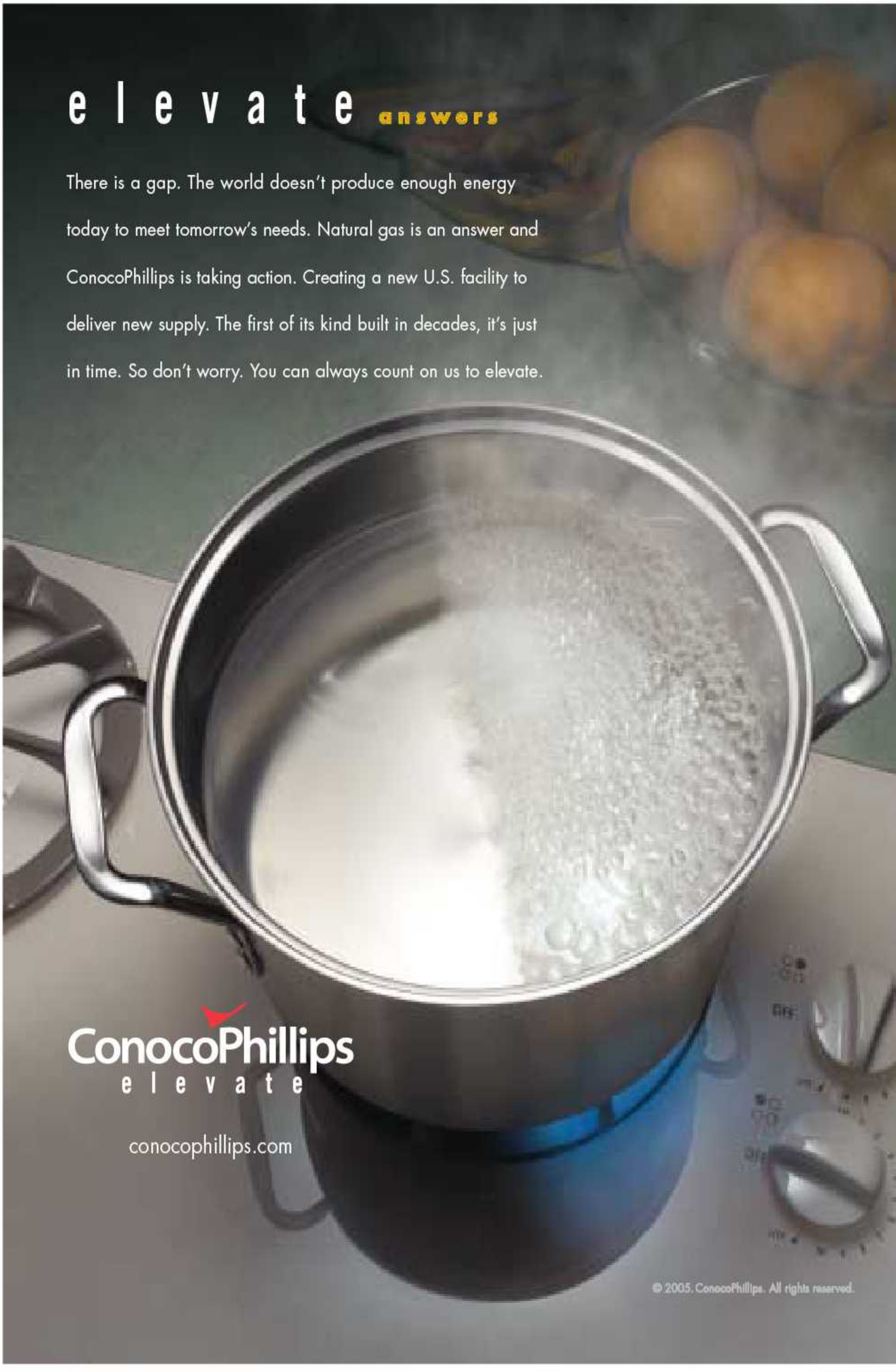
Cisco used to manage this services supply chain with easy-to-implement heuristics. For instance, the company met service demands from high-priority customers from nearby (or forward) locations and supplied other customers from depots or central locations, such as warehouses, that were located farther away. The company neglected, however, to coordinate the stocking policy between forward and central locations. It also chose stocking levels for each part and for each location based on the number of parts used in the equipment that was located in the area the service center supported. As time went by, Cisco found that the network was becoming less flexible, and inventory levels were rising.

Cisco's executives decided to improve the management of the business's spare parts inventory, and they implemented a new system based on the principles that we have described in this article. The company drove the process by using demand histories to generate probability-based forecasts of parts requirements. Because Cisco has to field thousands of service calls every day, the company started calculating its resource allocation options daily instead of intermittently. The company also started accounting for the interactions between forward stocking locations and central stocking locations. That sped up the deployment of resources, lowered costs, and shrank response times. The redesigned system helped Cisco reduce its spare parts inventory by 21% while boosting customer satisfaction. Clearly, Cisco has mastered the science of after-sales services.

• • •

As we all know, corporations compete by delivering customer value, which they can influence at three stages of a product's life. Some businesses focus on the design phase, which determines a product's raw materials, capabilities, and performance. (In fact, 80% of a product's costs are determined when it is designed.) Most businesses compete in the next phase, production. Because a majority of businesses adopt the same standards in manufacturing, it's difficult for them to distinguish themselves at this stage. The final stage is customer support, which spans the longest part of a product's life. Although few executives realize it, after-sales support is the longest-lasting source of revenues to sellers and requires the smallest investment. Companies that ignore the aftermarket do so at their peril.

Reprint R0605H; HBR OnPoint 4311
To order, see page 159.



e l e v a t e answers
There is a gap. The world doesn't produce enough energy today to meet tomorrow's needs. Natural gas is an answer and ConocoPhillips is taking action. Creating a new U.S. facility to deliver new supply. The first of its kind built in decades, it's just in time. So don't worry. You can always count on us to elevate.
ConocoPhillips
e l e v a t e
conocophillips.com
© 2005. ConocoPhillips. All rights reserved.

Leaders of government agencies operate under handicaps largely unknown within the private sector. But the best of them have improved performance by adopting and adapting some goals and methods that have been proven in business.

ALEX NABAUM

Change Management in Government

by Frank Ostroff

WHEN HURRICANE KATRINA engulfed New Orleans in the summer of 2005, the deaths, injuries, and damage to property that resulted were stark reminders of the cost to all of us when government at any level – federal, state, or local – does not perform as well as it should. The year before, the 9/11 Commission found that government's failures to anticipate and respond to the terrorist attacks on that date were "symptoms of the government's broader inability to adapt how it manages problems to the new challenges of the twenty-first century." Although many public servants performed heroically, these horrific events and their aftermaths dramatize the need for high performance from government agencies both in dealing with life-and-death situations and in preventing crises from ever reaching that point.

This is a truth easily overlooked when the private sector is making impressive gains in productivity and discovering market solutions to large social needs. In reality, high-performing government agencies do resemble well-run companies. Both have worthy goals; well-designed, rational processes; strict accountability; and effective leaders. But the profound differences in their purposes, their cultures, and the contexts within which they operate conjure up quite different obstacles. The greatest challenge in bringing about successful change and significant, sustained performance improvement in the public sphere is not so much identifying solutions, which are mostly straightforward, as working around four unique obstacles.

First, agency leaders are not ordinarily chosen because of their commitment to spearheading reform or because they have a track record in leading large-scale change efforts. Rather, they are appointed on the basis of their command of policy, technical expertise in the agency's work, or political connections.

Second, once a person is selected to lead an agency, he or she usually has only a limited amount of time to see a change effort through. The nomination process can occupy the first nine months or more of a U.S. president's four-year term, and by the last year of that term, the agency head may already have begun looking for his or her next job. As a result, the average tenure of political appointees is effectively 18 to 24 months, tempting top agency officials to concentrate on policy reforms that can be enacted quickly, instead of on time-consuming organizational revampings whose results they may not still be around to see.

Third, rules governing such areas as procurement, personnel, and budgeting, which were originally adopted to prevent public-sector wrongdoing, have created workplaces that are significantly less flexible than those in the private sector. And legal doctrines intended to keep agencies' activities within the scope of the powers delegated to them by Congress can inhibit initiative. Public-sector managers know, too, that the penalties for failure are almost always greater than the rewards for exceptional performance.

Finally, in a democracy, everyone has a rightful stake in an agency's activities. Important constituencies include not only the president of the United States, cabinet members, members of Congress, and oversight organizations such as the Office of Management and Budget, but public-interest watchdog groups and the media. Most of an agency's operations are conducted in a fishbowl, and almost every initiative is bound to meet with someone's disapproval.

These facts of public life may never go away. But there are agency leaders who have figured out how to court support among key stakeholders, rededicate employees to an agency's true mission, undertake reform so comprehensively that resistant elements are unable to subvert it, and lay the groundwork for next steps so clearly and systematically that progress continues when leadership changes hands.

The transformation of three federal organizations discussed below demonstrates how deep change and significant performance improvement can be achieved at public agencies. The Occupational Safety and Health Administration, or OSHA, which oversees workplace conditions mostly in the private sector, redefined its mission and goals and envisioned a new way to achieve them. The Government Accountability Office, or GAO, which investigates other federal agencies and issues reports on their performance, adopted many of the talent-management practices found in the private sector. And Special Operations transformed itself from an ad hoc arm of the military into an elite standing force comprising servicemen and servicewomen drawn from several military branches. It also boasts the military's first command responsible for all Special Operations Forces.

Virtually every administration in the past 40 years has launched initiatives to improve government performance, including those of President Bush and President Clinton. On the basis of my experience as a consultant to both public and private sector organizations, I have identified five principles that characterize successful public-sector change efforts and can achieve the desired results.

Principle 1: **Improve Performance Against Agency Mission**

Public-sector organizations aren't created to maximize shareholder wealth. Rather, they are charged with promoting a particular aspect of the public's welfare. Effective and efficient execution of their mission is what taxpayers pay for. It's also what motivates agency staffers. The reason most OSHA employees get up and go to work in the morning is to protect the safety and health of American workers. But mission can get blurred or lost as political priorities shift and agency leaders come and go. Even in the best of situations, mission is subject to varying interpretations.

When Joseph Dear became the assistant secretary of labor (and head of OSHA) in 1993, OSHA measured success chiefly in terms of the number of inspections conducted and fines imposed. While in certain situations inspections and fines were the appropriate response, they were not the only, and sometimes not the most effective, way of advancing OSHA's mission. Clearly, the agency had become a captive of metrics originally intended to promote workplace safety but that had over time become an end in themselves.

How does drift like that occur? And why don't leaders correct course when it does? In OSHA's case, staffers' exposure over the years to workplace injuries and fatalities that could have been avoided had instilled in some of them a punitive attitude toward business. The agency's emphasis on inspections and fines had reinforced that attitude, preventing many employees from realizing that better alternatives might exist. Understandably, OSHA's disciplinary approach antagonized many employers, who often underestimated the cost of workplace hazards to their employees and themselves. These businesses adopted the attitude, "the less OSHA does, the better." To both groups, enforcement appeared to be a zero-sum game.

Frank Ostroff is the managing partner of Ostroff & Associates, a management consulting firm that provides services to public sector, private sector, and nonprofit organizations. He can be reached at frank.ostroff@ostroffassociates.com.

Many agency employees, however, don't pick a side. They instead feel estranged from their agency's strategy and mission. They don't see how their individual efforts directly affect the agency's performance, and so they start to focus on producing outputs, which are easy to quantify, rather than on achieving outcomes, to which private-sector measures like return on invested capital, or ROIC, do not apply. As employees lose sight of the overall mission, they may eventually come to care only about those things they can directly control, like protecting their own turf.

Accordingly, OSHA's transformation effort began with a rededicated commitment to mission. That meant helping employees rediscover the reason the agency was created–to reduce the number of injuries, illnesses, and deaths in the workplace – and then reaching beyond it by calling for the elimination of all preventable workplace ills in ten years. Although literally impossible to achieve, this stretch goal was intended to stimulate innovative thinking. It also had the effect of making the agency's reorientation impossible to doubt.

Once a mission has been articulated, agency leaders must put a stake in the ground by establishing improved performance against mission as the fundamental objective of the transformation effort. Doing so entails choosing clear performance-improvement goals and formulating specific initiatives. In the process, performance or skills gaps in the organization will be exposed. When David Walker became the U.S. comptroller general (and GAO's leader) in 1998, the office's ability to perform its mission had been damaged by a downsizing. Shortly after assuming his new position, Walker made addressing personnel and skill gaps a priority. In the case of Special Operations, aligning performance and mission meant adapting to the new reality of "asymmetrical warfare," in which the enemy was symbolized not by a Russian tank and its crew but by terrorists on a commercial jet loaded with passengers and fuel.

In the business world, considerations like ROIC help companies set priorities and evaluate initiatives. Improving performance against mission is a framework for doing the same thing in public-sector organizations. OSHA used performance improvement goals to determine which initiatives should be undertaken. For example, OSHA's Atlanta East office obtained a commitment from a local steel company to provide all its workers with equipment designed to protect them from falls. In the first six months that the agreement was in force, three workers fell from heights of 60 feet or more. Without the equipment they were wearing, all three would have died. Over the same period, workers' compensation claims at the company went from more than $1 million to $13,200; in the first three months, accident costs per person-hour dropped by 96%.

Goals like "centralize IT" or "reduce management layers," by themselves, will not generate the amount of energy necessary to transform an agency.

Principle 2: Win Over Stakeholders

Whereas CEOs have to please such constituencies as lenders, securities analysts, and shareholders, the range of stakeholders that agency heads must cultivate is even wider. Broadly speaking, they fall into two groups–external and internal.

External stakeholders. Special Operations Forces were active during the Vietnam War, operating behind enemy lines and in combination with indigenous forces, but had been nearly put out of business after the war's end. The army reduced Special Forces from seven active groups to three, the navy cut the number of SEALs by half, and the air force deactivated all its Special Operations gunships.

As a result, the United States lost most of its ability to launch and sustain demanding, clandestine operations in support of conventional U.S. forces. The loss was most apparent in the failed 1980 attempt to rescue American hostages in Iran. A group of soldiers, Defense Department officials, and members of Congress and their staffs became very concerned about the United States' lack of preparedness in the face of terrorism, foreign insurgencies, and other unconventional threats to national security. This group launched a campaign to revamp Special Operations to address these dangers, leading to the passage, in 1987, of the Nunn-Cohen Amendment to the Goldwater-Nichols Department of Defense Reorganization Act of 1986, which created the first command responsible for all Special Operations Forces. Headed by a four-star general, the reconstituted SOF now includes Army Rangers, Air Force Special Operations, and Navy SEALs as well as Marine Special Operations Command units.

Even after the joint command was established, the SOF leadership had to convince current stakeholders of the range and value of the forces' capabilities. One way it did this was by inviting senior military officials and political leaders to Fort Bragg to observe the soldiers as they went through their exercises. According to General Wayne Downing, SOF's third commander, soldiers were encouraged to relate the breadth of their experience and expertise, including their mastery of foreign languages and cultures. On one occasion, he recalls, a soldier spoke about the medical care and education she provided to tribes in the hills of Oman.

The SOF leadership also wanted U.S. diplomats to understand how Special Forces could be helpful to them. During a six-week training course, new ambassadors were invited to fly to Fort Bragg. On the flight was a platoon of SEALs, dressed in combat gear. The SEALs held a briefing and then put on parachutes. As General Downing described it: "We drop the tailgate of the airplane, and then the SEALs go out of the end of the plane. When the ambassadors get off the plane, the SEALs are waiting for them. That grabs their attention. We show them psychological operations, shooting, hostage rescue situations." Several of the ambassadors, for example, took the role of hostage in a training exercise. An assault team gave participants a demonstration at the firing range. The SEALs also conducted a night mission. "After seeing us," Downing continues, "[the ambassadors] can understand what we do and how we might be helpful to them."

GAO takes its own approach to winning over stakeholders. "Theoretically, I have 535 bosses in the Senate and the House," Walker says. "I respect them all but have to concentrate on the ones with the most interest in an issue. We identify stakeholders and work hard to understand their issues and concerns. If the issue is job classification, for example, I focus on the chairman and ranking member of the congressional committee with jurisdiction over that issue, as well as on members with local [Washington, DC] interests, since 75% of GAO employees are based in DC." His attention extends beyond supporters. "Since we are a public agency," Walker explains, "the potential opposition knows what we are trying to do early on. This is why it is so important to get ahead of the curve – to know the issues and then meet them ahead of time."

Internal stakeholders. Public-sector employees often stay at their agencies for a long time, typically much longer than their agencies' leaders. And many have watched change efforts come and go–to little effect. But staffers' longevity can actually be helpful to a leader seeking change. That is because those employees know a lot about how their agencies run and where they falter. By actively eliciting operational knowledge from them, leaders not only lay the intellectual foundation for the change effort, they also help gain the employee support needed for it to succeed.

In my experience, at any given agency, about a quarter of employees are initially receptive to a change initiative (sometimes out of frustration with how things have been handled in the past), a quarter are resistant, and the remaining half are on the fence. The continuing receptivity of the first group cannot be taken for granted. To keep those employees on board, the goals of the change effort must be consonant with their values – the reasons they came to the agency in the first place. The articulation of a stretch goal like OSHA's – "eliminate all preventable workplace ills in ten years"–helps demonstrate the sincerity of the new leadership's commitment, even in the eyes of the doubters. Goals like "centralize IT" or "reduce management layers," by themselves, will not generate the amount of energy necessary to transform an agency's way of working and view of itself.

Questionnaires, interviews, and observation can determine who in the organization is amenable to change. Lack of change readiness can usually be attributed to issues of skill and will. Some may doubt their ability to keep up in the new organization. They think, "I've been successful at my job for 20 years, but I'm afraid I don't have the skills to succeed in the organization being proposed." Others may lack the will to engage in yet another change effort: "I don't believe the proposed changes will improve performance." Or, "The proposed changes threaten my turf." Or even, "I just don't have the motivation to cope with so much change."

Well-crafted training programs can allay concerns about skill deficiencies. Their value is both psychological and practical. As employees gain confidence, they become more open to changes in their work or environment. Other tactics address a lack of will. OSHA, for example, convened a "diagonal slice" change team representing all agency functions and reporting levels, as well as both management and union members, to develop employee understanding of the agency's performance challenges and support for recommended changes. The team visited high-performing public agencies and companies to learn from their experience in combating workplace ills. Accompanying the team were some people who had initially opposed the change effort, but were chosen in the hope that what they saw on the visits would help soften their resistance–and it did. The State of Georgia's Environmental Protection Division, the team learned, allocates its limited resources by pinpointing the state's environmental hot spots. And the Argonaut Insurance Company, it found, quantified the cost to businesses of workplace injuries and then helped those businesses implement safety and accountability systems. From this sort of exposure, the team members gained a sophisticated grasp of best practices and, no less important, a newfound belief in their feasibility.

To encourage GAO staffers to embrace new procedures, Walker focused on incentives. GAO had been a place where almost all employees received pay increases largely on the basis of time on the job and job classification or grade, regardless of performance. Now, compensation is structured on market-based salary ranges, and employees are rewarded for expertise, leadership, increased responsibility, and other contributions to performance.

Principle 3: **Create a Road Map**

In the mid-1980s, MBA graduates seemed to regard manufacturing as a black box: You put some things in and out pops a product at the other end. Many government reformers view the transformation process in similar fashion and hence fail to pay careful attention to the steps necessary to get from "here" (current agency status) to "there" (improved performance).

A change effort road map generally has three major phases: identify performance objectives; set priorities; and roll out the program.

Identify performance objectives. In any change effort, you need to start at the top and then quickly move to ensure participation and support of a broad cross-section of employees. It is the prerogative of the agency leader and his or her senior managers to define the mission. At GAO, for example, David Walker began by talking with Congress and the agency's two key internal groups – the agency's managing directors and the

©2005 Cisco Systems, Inc. All rights reserved.
let'sgo
tothe
tajmahal
poweredbycisco.
Field trips powered by broadband, not diesel.
Kids united around the world. Now, virtual school trips can be taken virtually anywhere, and learning is taken a step further.
All made possible by the secure and ubiquitous network we all share.
Learn how Cisco is helping change education and communities at cisco.com/poweredby.
CISCO SYSTEMS
innovation. powered by

Off the Shelf, Into Space

NASA tests market-proven technology for use in space-flight environments.

There is no harsher work environment than space. Even basic activities can pose extreme challenges, and communicating is no exception. In its constant search to enhance communications, NASA is assessing the use of commercial networking technology in space, the same technology that millions of people use for e-mail, Web browsing, and other earthbound communications.

NASA's Goddard Space Flight Center in Greenbelt, Maryland has successfully lab-tested standard Internet Protocol (IP) networking technology to deliver voice and data communications in space-flight environments, and is now exploring potential uses in future missions. Among the technologies NASA tested is off-the-shelf networking software from Cisco Systems integrated with electronics hardware "ruggedized" for space travel.

Simple, Flexible Communications

The flexible data routing capabilities inherent in IP networks will make it simpler and faster for NASA to make the adjustments necessary to maintain effective communications between the ground and assets in space, saving valuable time.

The "plug and play" nature of IP networking gives NASA the flexibility to easily connect a wide variety of devices—from laptops to lunar landers—where and when they're needed, much in the same way that organizations around the world do everyday.

Saving Time and Money

Instead of needing to engineer proprietary solutions, where appropriate, NASA can take advantage of the many reliable networking devices and capabilities already available today. Using commercially available hardware and software will save NASA money and reduce the time required to develop missions.

Cisco is working with NASA to help improve communications capabilities in space. Imagine how effectively Cisco can help you meet your growing communications needs here on Earth.

Learn how Cisco aids in space exploration at **cisco.com/go/hbr-space.**

CISCO SYSTEMS

25 employee representatives who sit on the Employees' Advisory Council. "We talk about what we need to do. I discuss it with them live so that they can provide input and ask questions."

The agency leader can then commission a change team composed of individuals who are highly respected by agency peers, strongly support the need for change, and represent the various areas of the agency directly affected by the change effort. This team identifies the areas of performance requiring the most urgent attention and outlines the biggest obstacles to reform.

One way for the change team to do these things is to conduct internal fact-finding through interviews with senior managers, headquarters staff, field personnel, and outside experts. The team might also review internal reports, congressional oversight committees' documents, and articles and books by experts who have studied the agency. The team should analyze past change efforts to determine which had positive effects, which were shrugged off, and why.

The change team can then hold redesign workshops to develop recommendations for improving performance. In OSHA's case, strategy, organization, and process redesign workshops were conducted to develop a model for a new, higher-performing field enforcement office. One such workshop concerned the handling of informal complaints – that is, those reported orally. A map of the current complaint process was placed in the front of the room where the workshop was held. A facilitator briefly outlined the current procedure and described steps, based on best practices, that could be taken. The facilitator then asked the group a series of questions such as, "Does the process have any redundant steps?" "Are there handoffs that should be eliminated?" "Are there steps that should be added?" "Which ones should be automated?" For every step of the current process, the workshop participants, which included members of the change team and OSHA employees who had either handled informal complaints or were familiar with the process, came up with suggestions for improvement. In the course of one afternoon, some 150 ideas were generated.

Set priorities. Once all the suggestions are on the table, the next step is to decide which to adopt and in what sequence. Should an agency concentrate on areas where the potential for improvement is most marked? On areas that external stakeholders, including the general public, care most about? Or on areas where one can get results the fastest, thereby inspiring further efforts?

For most programs, I recommend constructing a 2 × 2 matrix, indicating high and low impact on performance on one axis and high and low difficulty of implementation on the other. One would almost always recommend immediately implementing those ideas likely to have the greatest impact on improving performance against mission while posing the least amount of difficulty.

Of course, there are times when it's clear that an initiative will have such significant impact on performance that the hardship involved in getting there should be discounted. In using a similar matrix to decide which of the workshop's ideas to implement first, OSHA found that implementing certain process redesigns was going to entail five weeks of staff training, which represented time away from inspection and enforcement. But the programs proceeded because both the change-team and agency leadership believed they would have such a significant effect on performance that the cost was justified.

It also helps to pursue tangible results that can be achieved quickly, even if they are not the ones that will have the biggest impact. At every one of OSHA's approximately 65 field offices, frontline compliance officers were given a menu of improvement opportunities and then asked to pick the one they thought was most urgently needed. They then had to commit themselves to achieving extremely precise performance goals within eight weeks. This technique, called "breakthrough," had startlingly good results. At OSHA's Parsippany, New Jersey, office, for example, response time to employee complaints of serious hazards was cut in half after only eight weeks. OSHA's breakthrough initiative demonstrates that meaningful change does not have to happen slowly. Quick wins also help generate faith in change efforts that unavoidably take years.

Roll out the change program. It's critical that agencies sow the seeds of change in fertile ground. Because Parsippany and Atlanta East were the OSHA offices judged the most receptive to change, they became the first pilot offices. Staff members of those offices were made virtual members of the change team (which was based in Washington), helping to ensure that the ideas the workshops recommended were suited to implementation in the field. An orientation and training plan was then developed, and risk controls were put in place. Representatives of the change team were present for the first month or so to provide guidance, solve problems as they arose, and discover what worked well and what didn't.

Upon completion of the pilot phase, implementation was extended to five more offices, which were given three months to adopt the changes deemed most likely to improve performance against mission. To help keep the rollout on track as it spread to more offices, each successive office would have on the premises a couple of observers from one of the five offices next on the list. These observers would then help lead implementation at their own offices, along with members of the change team and veterans of the previous round. Rollout to all of OSHA's field offices took three years, during which there was a change in agency leadership. Because the rollout had gained broad-based employee support, gathered momentum, and was already showing results, OSHA was able to surmount this usually disruptive event and achieve its goals.

Managing the design and rollout of a change program requires the involvement of a steering committee usually composed of the agency's leader and senior managers of areas particularly affected by the transformation. The committee approves the sequence of steps, imposes milestones (for both process stages and real-world outcomes), specifies deliverables, approves change-team recommendations, and defines the expected contributions from both work units and individuals. The committee also takes ultimate responsibility for guiding the initiative and intervening to correct course when necessary.

Principle 4: **Take a Comprehensive Approach**

By now it should be clear that there is more to organizational redesign than moving boxes around a chart. For organizations to perform at a superior level, the full range of factors – leadership, structure, processes, infrastructure (including technology), people, and performance management – must be integrated and aligned. Yet the tendency within government is to seize on whichever organizational element the particular person or group driving the change effort knows best, at the expense of other elements.

The intense demands placed on Special Operations required a holistic approach to change. The transformation of Special Operations encompassed all the broad areas that must be addressed. Introducing a new unified command made up of generals from each military branch and headed by a general reporting directly to the secretary of defense was among the changes in how special operations would be led. Assigning special operations elements from multiple military services to the new organization and having them report to the unified command were among the structural changes. To obtain needed equipment, SOF created a much faster, flexible, and cost-efficient procurement process. Improved technology and weapons systems such as the laser designators used to pinpoint Taliban targets in Afghanistan and remote-controlled Predator UAVs (unmanned aerial vehicles), which conducted valuable surveillance of the Taliban's movements, were adopted.

According to General Richard Potter, the efficacy of these upgraded elements depends entirely on the caliber of the troops themselves. SOF has therefore placed unprecedented emphasis on recruitment standards and training. The general explains, "For Army Special Forces, we carefully prescreen candidates and look for the attributes critical to succeeding as an SOF warrior. One of the goals of the training [that follows] is to strip off the veneer and see the inner man. We put the soldiers through sleep deprivation, intense psychological and physical stress, and demanding intellectual problems. After that, we send the soldiers off for individual skill training–weapons, medical, operations, intelligence, field operations, language and cultural skills, and negotiation. This whole process can [take] 1.5 to two years."

Adopting a comprehensive approach may even require integrating activities across organizational boundaries. General Downing explains why it was necessary in SOF's case: "Let's say there is a camp containing terrorists that have killed Americans that we want to target. The Navy SEALs will provide reconnaissance of who is in the camp and when. The Army Rangers will attack the camp and kill or capture the terrorists. Air Force Special Operations, operating in tight coordination with the mission, can then fly in special planes and extract the terrorists and our Rangers. This requires very tight coordination and integration between these units." The need for integration and improved performance was a lesson taken to heart, and acted upon, after the failed Iran hostage rescue mission. "In the opening days of Operation Enduring Freedom in Afghanistan," recounts General Doug Brown, current SOF Commander, "U.S. Special Operations Forces successfully conducted 23 missions that were longer in duration, over greater distances, and more complex than Operation Eagle Claw [the attempt to rescue American hostages in Iran]."

In some situations, it may be difficult to overhaul all elements affecting performance at once. But even in the course of tackling the most pressing ones, it's important not to neglect addressing the other elements altogether.

Principle 5: **Be a Leader, Not a Bureaucrat**

We've now established what it takes to lead a change program. Formulate a vision. Be aware of present realities. Develop a broad base of support. Set a clear path. Respect the complexity of what you're attempting. Hold people accountable for both results and commitment to the change effort.

There are, however, two qualities of public-sector leaders that make such work difficult. First, it is in the nature of bureaucrats to respect barriers. Change leaders don't necessarily knock them over; instead they find ways to see over and around them. As Walker puts it, "I find that often you have more flexibility than people believe. Many rules, as well as civil service limitations on what you can and can't do, are good, and they need to be followed. But there is a difference between what you can and can't do and what has been done and not done in the past." As reported by GAO, during Walker's tenure, that agency has roughly doubled savings achieved and resources freed up from $19 billion per year to $40 billion at other agencies as a result of its recommendations.

General Downing provides an illustration of how Special Operations has worked around barriers to obtain the equipment SOF needs. "Bringing complicated equipment online often takes ten to 15 years. We needed a new speed boat. Rather than going through traditional military procurement procedures, we used an innovative approach, having industry vendors build three different prototypes. After a thorough competition, we selected the best one. We had the first Mark V in 37 months."

The other problem many agency leaders face is the perception that because they are political appointees, their commitment to improving performance against mission may be questionable. Such leaders must convince stakeholders of their sincerity. Agency employees mostly start out believing in the agency's mission, which, whatever its particular focus, involves serving citizens and taxpayers. Over time, they see change programs come and go without making a dent. Meanwhile, the public interest is neglected. If an agency head can convince the rank and file that this time is different – that he is committed, is willing to invest the personal time and energy that is required, and will commit the necessary people and resources – then its original dedication will be reawakened.

•••

Many corporations have a deeply felt sense of mission over and above pleasing customers and enriching shareholders. Employees of pharmaceutical companies, for instance, are motivated to help cure illnesses. At most government agencies, such larger purposes are their entire purpose. When these objectives are misconceived or unclear, however, the agency's activities lose their point. The dramatic changes at OSHA, the Government Accountability Office, and Special Operations Forces clearly show that change at public agencies is possible. Attesting to SOF's successful transformation, Defense Secretary Donald Rumsfeld told the *Wall Street Journal* in February, "Instead of…operating generally only in support of someone else, we would have situations where Special Operations Command might be the one supported by other commanders around the globe."

Public agencies can be mysterious places. But the solutions to reforming them are not. What's required is a recognition that successful change is possible and that a proven set of techniques is available to get you there. Agencies with the vision and courage to undertake meaningful change can use these five principles to achieve their highest purpose.

Reprint R0605J
To order, see page 159.

The Great Intimidators

Roderick M. Kramer's article "The Great Intimidators" (February 2006) is a great read, but I don't believe a word of it. Sure, we've all seen "tough minded" bosses who are "rough, loud, and in your face" and "relish the chaos they create." But to call such behaviors a form of intelligence worth cultivating is seriously misguided.

Kramer's arguments praising intimidators rely on rhetorical appeals. First, he cites as examples numerous figures

who are well known for their abrasiveness and crudeness. But most of Kramer's heroes fall far short of the leaders the rest of us would identify as great. Richard Nixon, Robert McNamara, and Carly Fiorina all plummeted from lofty heights because they failed to curb their excesses. Tough guy Larry Summers, whom Kramer also approvingly cites, recently resigned as president of Harvard University. The arts and sciences faculty voted no confidence in him last spring and threatened to do so again. This is the same Larry Summers who, according to the *Boston Globe,* "vowed several times to change his tone and consult more with other people," but somehow he never managed the turnaround. Before Summers resigned, the dean of arts and sciences, William Kirby, had announced that he would be stepping down. Kirby's friends say it was partly because Summers treated Kirby disrespectfully by criticizing him behind his back. If true, does this sound like the sort of leader whose behaviors are worth emulating?

Kramer's second rhetorical move is to assert that the intimidator's behaviors are not those of a thoughtless bully, but those of a creative schemer whose coercive tactics should be lauded for their artfulness. Kramer defends intimidators' threats, taunts, slurs, and tirades and claims that these are all the more effective if practiced in front of a mirror. Ambiguity is superior to clarity: "If people don't know where you're coming from or where you're going, it's easier to catch them by surprise." Astonishingly, even lying has an honored place because the truth doesn't matter all that much when it comes to political intelligence.

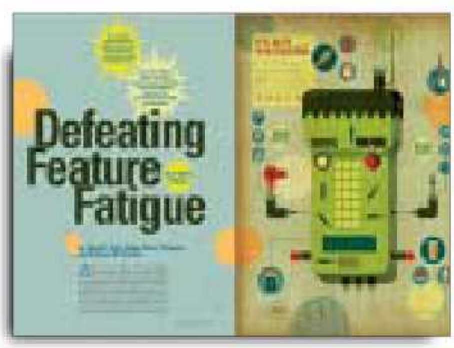
Kramer's final argument is a kind of bait and switch. He corrals the testimony of those who've benefited from, even flourished under, reputed intimidators to relieve us of any lingering doubts as to the effectiveness of intimidation, especially in light of the unsavory behaviors just enumerated. Kramer cites people who worked for or with James Watson, Martha Stewart, Steve Jobs, and Hyman Rickover. However,

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

in each case, it isn't the intimidation that edifies or impresses Kramer's witnesses, but rather some redeeming quality or trait or practice that they found magnetic in these leaders: a transcendent mind (Watson), great organizational skills (Stewart), technical brilliance (Jobs), or a powerful belief in other people (Rickover). Others are drawn to these leaders not because of the intimidation but in spite of it. To answer Kramer's opening question about how such people can achieve power in the first place: We tolerate, and sometimes reward, even the harshest intimidators when they have much else to give us.

Walter M. Carleton
Faculty Partner, Retired
Leadership Development
Orleans, Massachusetts

Defeating Feature Fatigue



Roland T. Rust, Debora Viana Thompson, and Rebecca W. Hamilton's article "Defeating Feature Fatigue" (February 2006) was useful in identifying a quantitative approach to the problem of feature overload. One area I wish had received further consideration was the role of risk mitigation in the purchase-decision process. Many consumers purchase more than they need because they would rather have something and not need it, than need something and not have it. They believe that it is safer to buy a more robust product and use only a subset of the features than to buy a streamlined product and discover later that they are missing critical functionality. Aware of this tendency, producers create products that are laden with extraneous features in an attempt to win a battle from which neither the producer nor the consumer will ultimately benefit.

A number of manufacturers have identified an alternative approach: develop products that allow the user to add capabilities later as needed. Consumers can mitigate the risk of purchasing an insufficient product while still insulating themselves from a complex, cumbersome, and confusing user experience.

Larry Roshfeld
Senior Vice President
CorasWorks
Reston, Virginia

Rust, Thompson, and Hamilton respond: Adding capabilities later is a great idea, as long as it is very easy to do. The problem is that the "adding-features feature" itself adds one more feature and therefore potentially exacerbates the problem. Dealing with a menu and descriptions of potential features can be just as forbidding as dealing with the features themselves.

Perhaps a better approach is to incorporate intelligence that senses how the product is used and adapts automatically. Existing examples of this are word-processing software that learns to correct words that the user commonly misspells and automobiles that automatically reprogram their transmissions on the basis of the driver's driving habits to work more smoothly. This adaptive approach adds functionality without creating more of a burden for the user.

Competing on Analytics

As a long-time analytic consultant in the area of data-driven marketing, I took particular interest in Thomas H. Davenport's article "Competing on Analytics" (January 2006). The author rightly points out the value of having senior executive advocates, and he names a few of the best.

In my experience, such visionaries are few and far between. Most senior managers are risk averse and are willing to take only partial and gradual steps toward the optimization applications that full-bore analytics can deliver. Market uncertainty, which can cloud analytic predictability, injects caution into the veins of even the most forward-thinking executive.

As a consequence, most managers do only as much as is necessary to achieve acceptable results. Why risk a severe blunder trying to maximize gains when you can get ahead making slow, steady progress? The Soviet weight lifter Vasily Alexeyev broke the world record more than 80 times, always by marginal amounts, and each time he was paid a handsome bonus. Shattering the world record would have been more impressive, but this way the wily Alexeyev had a long and very profitable career. Getting managers to use analytics to improve decision making is one thing, but getting them to produce optimal results quickly will require them to assess uncertainty differently and perhaps to change their attitudes toward risk.

Donald R. Ryan
Senior Partner
iKnowtion
Burlington, Massachusetts

Davenport responds: I agree that the early adopters of analytical competition need to be visionary. The first to adopt any new strategy must be bold and tolerant of risk. At least analytically focused approaches to business allow some calculation and moderation of the degree of risk, unlike strategies based on guesswork.

It doesn't necessarily take a visionary executive to see that analytical competition is viable. As I noted in the article, some companies – Progressive in insurance, Capital One in consumer banking, and Marriott in hotels – have been pursuing this strategy for more than a decade. Yes, their competitors shouldn't slavishly imitate their analytical directions, but it's no longer terribly risky to embark on multiple forms of optimization.

Donald Ryan denigrates slow, steady progress, but, in a way, that's what analytics are all about. Companies with a strong analytical orientation test new strategic and tactical initiatives on a small scale before diving into them. Over time, small, quantitatively derived advantages lead to major gains. The weight lifter may be a perfect role model for an analytical competitor – Alexeyev knew just what it would take to win and did exactly that.

Managing Authenticity: The Paradox of Great Leadership

Reading the article "Managing Authenticity: The Paradox of Great Leadership" by Rob Goffee and Gareth Jones (December 2005), I was struck by how the authors defined "managing one's authenticity" as finding "a balance between expressing their personalities and managing those of the people they aspire to lead or at least influence."

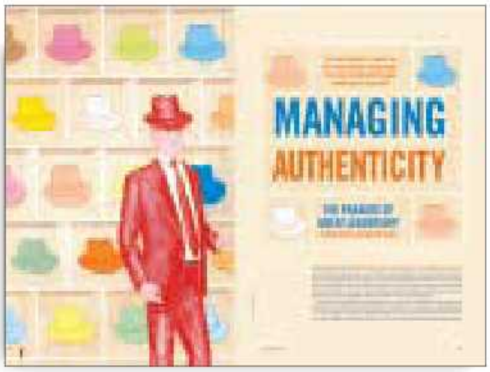
This definition runs counter to my experience as a CEO and as a college professor. Emotional intelligence can help leaders (especially managers) read audiences and adjust their tone and emphasis to change their effect on their listeners. But they should not adjust their personalities or values. No one can straddle the line between authenticity and manipulation, even a little. It is impossible to be perceived as authentic if someone acts a certain way with people he leads and another way with peers or bosses. True, there may be no overlap in the audience witnessing these "performances," but it takes only one person to spread the word. The essence of authenticity is being consistent – even when one thinks that no one else is watching.

Goffee and Jones also argue that authentic leaders must remain focused on where they are going "to understand the expectations and concerns of the people they seek to influence." I have found the opposite to be true: The true leader is a servant leader who provides support for those who are being led, assists them in refining their goals, and smooths the way for the accomplishment of organizational goals.

William J. White
Retired Chairman/CEO
Bell & Howell Professor of Industrial Engineering & Management Science
Northwestern University
Winnetka, Illinois

Goffee and Jones respond: We read William White's letter with interest, but we would like to eradicate at least one misunderstanding and clarify one point.

First, we do not suggest that those who aspire to leadership adjust their personalities and values. As for the former, we believe it neither desirable nor even possible, and for the latter,



changing values is highly undesirable. We do stick to our argument that leadership is always contextual, and that being oneself in a way that is sensitive to context is an intrinsic issue, and that context involves – at the very least – people, tasks, and culture.

Second, we believe leadership is not an end in itself – it has an overarching purpose, which leaders communicate in compelling ways to those they seek to lead.

Finally, we find it unlikely that anyone could ever take the servant-leader role espoused by White without understanding the expectations and concerns of the people they seek to lead.

The exercise of effective leadership involves a series of inspirational tensions between showing your strengths but revealing your weaknesses; being yourself but adapting to context; getting close to people but keeping your distance; and being authentic but being prepared to role-play.

Authenticity is not incompatible with performance or inconsistent with holding back parts of yourself. The idea that it has has held back effective leadership for far too long.

Where Babies Come From: Supply and Demand in an Infant Marketplace

In "Where Babies Come From: Supply and Demand in an Infant Marketplace" (February 2006), Debora L. Spar recommends that the United States adopt a property-rights model to address the consumer issues of equity, access, and cost in the human fertility market. This recommendation may address the symptoms of the problem, but it totally ignores the root cause.

Spar's article is representative of a culture that seeks to accomplish only what can be done through technology and industry but doesn't pause to reflect on the ethical implications. The property-rights model she suggests, with its "best (economic) results" goal, presupposes a product, not a human being. When we address assisted reproduction with economic terms such as "baby trade," "niche market," and "ownership," we show a lack of respect for the sanctity of human life.

Modern U.S. culture worships autonomy and individual freedom, but does each individual have the right to reproduce at all costs, rather than the responsibility to sustain creation? A product mentality leads to an inequitable system that favors the rights of parents to produce the best possible child over the rights of children. A child's value is then perceived by what it can do, and not who it is.

Financial gain rather than human dignity currently drives the fertility industry. We need to shift that paradigm to desire the good of society as a whole rather than idolize individual rights.

I agree with ethicist Gilbert Meilaender's recommendation that society should reflect on the "sort of people we wish and ought to be," rather than seek public regulation. Sometimes a solution should not be implemented because it shows complicity with the root problem. In this situation, a step backward in technology would be a step forward in progress.

Sue E. Simmons
Deaconess
Concordia Seminary
St. Louis

Spar responds: Sue Simmons makes a powerful argument, but she seems to suggest that our only option is "a step backward in technology." I simply don't think that is realistic. The technology of reproduction is here; the demand is enormous; and people are not going to be willing to abandon it. Instead, as I discuss in the longer version of my work on this subject, we need to accept the technologies for what they are and then figure out, as a society, how best to harness them for the common good.

All the Wrong Moves

I read the case study "All the Wrong Moves" (January 2006) by David A. Garvin with great interest. After years of observation and involvement, including a number of years in the practice of organizational change, I have found that effective decision making is the result of the successful interplay between authority, information, and will. Too much or too little of any of these three essential elements and the decision is less effective.

A good test, then, is to evaluate how each element plays out in a particular decision. Is the authority clear, understood by all, and accepted, especially by the person(s) in authority? Is there too much information (paralysis by analysis) or too little (foolishness), and is it reasonable? Is there a will to act? Applying this simple test to the case study will quickly reveal where and how decision-making improvements can be made at Nutrorim.

Jack Gunther
Market Development Executive, Retired
IBM
La Canada Flintridge, California

I notice that neither the author of "All the Wrong Moves" nor any of the commentators mentions the importance of properly framing the problem. If a problem is not properly framed, the rest of the decision-making process is handicapped. In the case described (a product was suspected of causing illness), executives should answer the following questions:

1. What is the probability that our product caused the illnesses reported?
2. Once this story hits the news, what will it do to public perception of our company and its products?
3. How will this situation affect our current and future sales?
4. Can we use this incident to our advantage to show that we care about the users of our products?
5. What is the potential cost of not doing a recall, in terms of customer goodwill and its effect on future sales?
6. What is the cost of a recall, and might a carefully worded recall help our image with customers and thus improve future sales?
7. For each proposed course of action, what are the probable outcomes in terms of public perception and future sales? How likely is each outcome?

The first question raises a technical issue. On the basis of the information in the article, the probability is very low. (I assume that if this probability is significant, there will be no question, and the product will be recalled.) However, such probabilities can never be zero. Decision makers must consider the possibility that their product caused these illnesses.

Questions about public perception will help determine the impact in terms of sales of the PR crisis, as will questions about the various costs associated with launching a recall. Once the company determines possible outcomes and their probabilities, the best decision may become obvious. Even if it is not obvious, the decision makers will have a better chance of picking a course of action beneficial to the company.

My own recommended action would be a recall. The news release could say that the company is very confident its product is safe but does not want to take any chances with the health of its customers. Therefore, it is recalling the product until the investigation is complete.

Hal Lillywhite
President
H.F. Lillywhite
Aloha, Oregon

Decisions and Desire

In recent years, there has been a dramatic proliferation of decision-making research that cites the University of Iowa gambling study. While we disagree with the main point Gardiner Morse makes about the results of the experiment in "Decisions and Desire" (January 2006), and we believe there are some logical problems with the structure of the experiment, we will not argue against the Iowa group's findings here.

However, we would like to clear up a misunderstanding. The author refers to the red and blue backs of the decks from which players pick cards, but those colors have no meaning for players. The backs of the cards in each deck are all the same color; it is only when players turn over each card that the face color – black or red – becomes an issue. The appearance of color is randomized to generate an uncertain situation for players. But the description of the experiment in the article may misrepresent the scientists' original design.

Ching-Hung Lin
Laboratory of Integrated Brain Research
Department of Medical Research & Education
Taipei Veterans General Hospital
Taipei, Taiwan

Yao-Chu Chiu
Department of Psychology
Soochow University
Taipei, Taiwan

HIGH POTENTIAL ISN'T ALWAYS HIGH PROFILE.

The Predictive Index®
is a proven, scientifically-validated behavioral assessment tool that improves bottom line performance by helping you hire, develop and retain talented people.

The earlier you recognize it, the higher the potential. The Predictive Index® (PI)—a practical, proprietary behavioral assessment tool—helps you identify and develop your next leaders. With a 50-year track record of success, PI offers fresh insights into the drives and motivations that set the highest achievers a breed apart. So your people—and your organization—can reach their full potential.

PI Worldwide
People Smart. Results Driven.®

FOR A FREE *"HIGH POTENTIAL"* POSTER, PLEASE VISIT WWW.PIWORLDWIDE.COM

Executive Summaries

May 2006


Watch What You Say...page 114 Health Care's Innovation Crisis...page 58

Harvard Business Review

www.hbr.org

May 2006

HOW TO BE A GREAT #2

...page 70

70 Second in Command: The Misunderstood Role of the Chief Operating Officer
Nathan Bennett and Stephen A. Miles

80 Creating New Growth Platforms
Donald L. Laurie, Yves L. Doz, and Claude P. Sheer

92 Are Leaders Portable?
Boris Groysberg, Andrew N. McLean, and Nitin Nohria

104 Mapping Your Innovation Strategy
Scott D. Anthony, Matt Eyring, and Lib Gibson

114 The Five Messages Leaders Must Manage
John Hamm

20 Forethought

41 HBR Case Study
Big Shoes to Fill
Michael Beer

58 Big Picture
Why Innovation in Health Care Is So Hard
Regina E. Herzlinger

129 Tool Kit
Winning in the Aftermarket
Morris A. Cohen, Narendra Agrawal, and Vipul Agrawal

141 Best Practice
Change Management in Government
Frank Ostroff

154 Executive Summaries

160 Panel Discussion

> **"Asking the question, 'What makes a great COO?' is akin to asking, 'What makes a great candidate for U.S. vice president?'"**
> –page 70

LEADERSHIP

COVER STORY

70 | Second in Command: The Misunderstood Role of the Chief Operating Officer

Nathan Bennett and Stephen A. Miles

Asking the question, "What makes a great COO?" is akin to asking "What makes a great candidate for U.S. vice president?" It all depends on the first name on the ticket – the CEO.

New research sheds light on this most contingent, and most mysterious, of C-suite jobs. After in-depth conversations with dozens of executives who have held the position and with CEOs who have worked with COOs, the authors have concluded that different views of the COO role arise from the different motives behind creating the position in the first place. There are seven basic reasons why companies decide to hire a COO: to implement the CEO's strategy; to lead a particular initiative, such as a turnaround; to mentor a young, inexperienced CEO; to complement the strengths or make up for the weaknesses of the CEO; to provide a partner to the CEO; to test out a possible successor; or to stave off the defection of a highly valuable executive, particularly to a rival.

This tremendous variation implies that there is no standard set of great COO attributes, which makes finding suitable candidates difficult for companies and recruiters alike. Still, certain common success factors came up consistently in the interviews, the most important being building a high level of trust between CEO and COO. Trust comes from meeting obligations on both sides: The COO must truly support the CEO's vision; keep ego in check; and exhibit strong execution, coaching, and coordination skills. The CEO must communicate faithfully, grant real authority and decision rights, and not stymie the COO's career.

It's surprising that COOs are not more common. They would be, the authors contend, if there were less confusion surrounding the role. As we continue to demystify that role, more companies will benefit from more effective leadership.

Reprint R0605C

RISK MANAGEMENT

FORETHOUGHT

20 | Preparing for a Pandemic

This month, all of HBR's Forethought contributions address avian influenza, its potential to become a pandemic, and the red flags this possibility raises for businesses.

Jeffrey Staples warns that the H5N1 strain of the avian flu represents a new class of global threats and urges companies to plan accordingly. **Scott F. Dowell** and **Joseph S. Bresee** show how mutations of the virus could boost its ability to spread from person to person. If a human pandemic does strike, **Nitin Nohria** explains, the most adaptive organizations have the best chance of surviving.

Warren G. Bennis says that such times call for a leader who can articulate the common threat and inspire people to overcome it together. **Baruch Fischhoff**, too, emphasizes the importance of risk communication, warning that managers who dismiss it may endanger the people they're responsible for and force stakeholders to look elsewhere for information. Fischhoff also demonstrates, in another article, how managers can map out their companies' vulnerabilities. **Larry Brilliant** tells us what people worldwide can expect from their governments. **Peter Susser** views the threat of a pandemic from a legal perspective, examining several HR-related issues businesses could face.

Sherry Cooper points out the social and economic lessons we should have learned from Toronto's 2003 outbreak of severe acute respiratory syndrome. **William MacGowan** explains how Sun Microsystems is building a continuity plan to keep its global workforce healthy in the event of a pandemic. **Wendy Dobson** and **Brian R. Golden** caution that if a pandemic begins in China, as many scientists expect, the global impact will be immediate because China is so integral to the world economy.

HBR also provides pandemic planning guidelines adapted from a checklist compiled by the Centers for Disease Control and Prevention, as well as a list of recommended avian flu resources.

Reprint F0605A

CHANGE MANAGEMENT

HBR CASE STUDY

43 | Big Shoes to Fill

Michael Beer

Jack Donally was a colossal figure who commanded a lot of respect, if not affection. Just before Jack suddenly died, the board appointed Stephanie Fortas as the new CEO to lead Innostat, the world's best-known manufacturer of prosthetic limbs and surgical implants.

Innostat has recently been struggling; its once generous margins have been narrowing for the past several years as other companies have found ways to engineer around its patents and develop competitive products of their own. Worse, the company seems to have lost its innovative edge: It has not launched a major new product in four years. The previous year, the board rejected a plan for a large-scale reorganization that might have addressed many of these fundamental problems. Should Stephanie revive the plan?

Her coach tells her she doesn't have the clout to survive a reorg and advises her to scope out new products and drive them through the way Jack used to. Meanwhile, Stephanie deliberates about whether or not to fire Frank Timoshotsky, the self-effacing head of production who had been Jack's protégé and who was passed over for the CEO position.

Commenting on this fictional case study are Robert A. Eckert, the chairman and CEO of Mattel in El Segundo, California; Steven F. Dichter, the director of TruePoint Partners in Waltham, Massachusetts; Patrick J. Canavan, a senior vice president and the director of global governance at Motorola in Schaumburg, Illinois; and Kerry Sulkowicz, a psychiatrist and psychoanalyst who founded the New York–based Boswell Group.

Reprint R0605A
Reprint R0605X: Case only
Reprint R0605Z: Commentary only

HEALTH CARE

58 | Why Innovation in Health Care Is So Hard

Regina E. Herzlinger

Health care in the United States – and in most other developed countries – is ailing. Medical treatment has made astonishing advances, but the packaging and delivery of health care are often inefficient, ineffective, and user unfriendly.

Problems ranging from costs to medical errors beg for ingenious solutions – and indeed, enormous investments have been made in innovation. But too many efforts fail. To find out why, it's necessary to break down the problem, look at the different types of innovation, and examine the forces that affect them.

Three kinds of innovation can make health care better and cheaper: One changes the ways consumers buy and use health care, another taps into technology, and the third generates new business models.

The health care system erects an array of barriers to each type of innovation. More often than not, organizations can overcome the barriers by managing the six forces that have an impact on health care innovation: *players,* the friends and foes who can bolster or destroy; *funding,* the revenue-generation and capital-acquisition processes, which differ from those in other industries; *policy,* the regulations that pervade the industry; *technology,* the foundation for innovations that can make health care delivery more efficient and convenient; *customers,* the empowered and engaged consumers of health care; and *accountability,* the demand from consumers, payers, and regulators that innovations be safe, effective, and cost-effective. Companies can often turn these six forces to their advantage.

The analytical framework the author describes can also be used to examine other industries. Cataloging the innovation types and identifying the forces that aid or undermine them can reveal insights on how to treat chronic innovation ills – prescriptions that will make any industry healthier.

Reprint R0605B; HBR OnPoint 4303; OnPoint collection "Curing U.S. Health Care, 3rd Edition" 4400

INNOVATION & CREATIVITY

80 | Creating New Growth Platforms

Donald L. Laurie, Yves L. Doz, and Claude P. Sheer

Sooner or later, most companies can't attain the growth rates expected by their boards and CEOs and demanded by investors. To some extent, such businesses are victims of their own successes. Many were able to sustain high growth rates for a long time because they were in high-growth industries. But once those industries slowed down, the businesses could no longer deliver the performance that investors had come to take for granted.

Often, companies have resorted to acquisition, though this strategy has a discouraging track record. Over time, 65% of acquisitions destroy more value than they create.

So where does real growth come from? For the past 12 years, the authors have been researching and advising companies on this issue. With the support of researchers at Harvard Business School and Insead, they instituted a project titled "The CEO Agenda and Growth." They identified and approached 24 companies that had achieved significant organic growth and interviewed their CEOs, chief strategists, heads of R&D, CFOs, and top-line managers. They asked, "Where does your growth come from?" and found a consistent pattern in the answers. All the businesses grew by creating new growth platforms (NGPs) on which they could build families of products and services and extend their capabilities into multiple new domains.

Identifying NGP opportunities calls for executives to challenge conventional wisdom. In all the companies studied, top management believed that NGP innovation differed significantly from traditional product or service innovation. They had independent, senior-level units with a standing responsibility to create NGPs, and their CEOs spent as much as 50% of their time working with these units. The payoff has been spectacular and lasting. For example, from 1985 to 2004, the medical devices company Medtronic grew revenues at 18% per year, earnings at 20%, and market capitalization at 30%.

Reprint R0605D

LEADERSHIP

92 | Are Leaders Portable?

Boris Groysberg, Andrew N. McLean, and Nitin Nohria

Does management talent transfer from one company to another? The market certainly seems to think so. Stock prices spike when companies announce new CEOs from a talent generator like General Electric. But how do these executives perform over the long term?

The authors studied the careers of 20 former GE executives who went on to lead other major organizations, with strikingly uneven results. Even the best management talent, the authors found, is transferable only if it maps to the challenges of the new environment. More specifically, the authors identified five types of skills that may or may not transfer to a new job: *general management human capital,* or the skills to gather, cultivate, and deploy financial, technical, and human resources; *strategic human capital,* or individuals' expertise in cost cutting, growth, or cyclical markets; *industry human capital,* meaning the technical and regulatory knowledge unique to an industry; *relationship human capital,* or the extent to which a manager's effectiveness can be attributed to his or her experience working with colleagues or as part of a team; and *company-specific human capital,* or the knowledge about routines and procedures, corporate culture and informal structures, and systems and processes that are unique to a company.

The GE executives' performance as CEOs depended on whether their new organizations were able to leverage each type of skill. The authors' findings challenge the conventional wisdom on human capital, which holds that there are two types of skill: general management, which is readily transferable, and company specific, which is not. In fact, they argue, other types of management capabilities can make a significant contribution to performance, and company-specific skills can be an asset in a new job.

Reprint R0605E; HBR OnPoint 429X; OnPoint collection "Hiring the Right Leaders" 4397

INNOVATION & CREATIVITY

104 | Mapping Your Innovation Strategy

Scott D. Anthony, Matt Eyring, and Lib Gibson

In the complex sport of American football, teams rely on playbooks as thick as the Manhattan phone directory. But when it comes to creating innovative growth businesses–which is at least as complicated as professional football–most companies have not developed detailed game plans. Indeed, many managers have concluded that a fog enshrouds the world of innovation, obscuring high-potential opportunities.

The authors believe that companies can penetrate that fog by developing growth strategies based on disruptive innovations, as defined by Clayton Christensen. Such innovations conform to a pattern: They offer an entirely new solution; they perform adequately along traditional dimensions and much better along other dimensions that matter more to target customers; and they are not initially appealing to powerful incumbents.

Companies can develop customized checklists, or playbooks, by combining this basic pattern with analysis of major innovations in their markets. The key early on is to focus not on detailed financial estimates–which will always guide companies toward the markets most hostile to disruptive innovations–but on how well the innovation fits the pattern of success. It's also crucial to encourage flexibility: Companies must be willing to kill projects that are going nowhere, exempt innovations from standard development processes, and avoid burdening project teams with extra financing, which can keep them heading in the wrong direction.

Companies can create competitive advantage by becoming champions at defining the pattern of successful innovations and executing against it. But as that pattern becomes obvious–and others emerge–building a sustainable advantage on innovation competencies will again prove elusive.

Reprint R0605F; HBR OnPoint 4281; OnPoint collection "Winning the Innovation Game" 4389

LEADERSHIP

114 | The Five Messages Leaders Must Manage

John Hamm

If you want to know why so many organizations sink into chaos, look no further than their leaders' mouths. Over and over, leaders present grand, overarching – yet fuzzy – notions of where they think the company is going. They assume everyone shares their definitions of "vision," "accountability," and "results." The result is often sloppy behavior and misalignment that can cost a company dearly.

Effective communication is a leader's most critical tool for doing the essential job of leadership: inspiring the organization to take responsibility for creating a better future. Five topics wield extraordinary influence within a company: organizational structure and hierarchy, financial results, the leader's sense of his or her job, time management, and corporate culture. Properly defined, disseminated, and controlled, these topics give the leader opportunities for increased accountability and substantially better performance.

For example, one CEO always keeps communications about hierarchy admirably brief and to the point. When he realized he needed to realign internal resources, he told the staff: "I'm changing the structure of resources so that we can execute more effectively." After unveiling a new organization chart, he said, "It's 10:45. You have until noon to be annoyed, should that be your reaction. At noon, pizza will be served. At one o'clock, we go to work in our new positions."

The most effective leaders ask themselves, "What needs to happen today to get where we want to go? What vague belief or notion can I clarify or debunk?" A CEO who communicates precisely to ten direct reports, each of whom communicates with equal precision to 40 other employees, aligns the organization's commitment and energy with a well-understood vision of the firm's real goals and opportunities.

Reprint R0605G; HBR OnPoint 432X

OPERATIONS

129 | Winning in the Aftermarket

Morris A. Cohen, Narendra Agrawal, and Vipul Agrawal

Ever since businesses started offering solutions instead of products, they have acknowledged that selling spare parts and after-sales services could be a lucrative source of profits. So why do so many companies still treat aftermarket services as an afterthought?

One reason is that after-sales support is so hard to manage. Original equipment manufacturers (OEMs) often subject their customers to unnecessary delays when problems arise, and many OEMs outsource customer service. As a result, customers are dissatisfied with the level of service they receive, and companies don't benefit from the aftermarket's potential. Only businesses that provide services efficiently can truly benefit.

Focusing on after-sales services can pay off in a number of ways. For example, it's cheaper for businesses to increase sales of parts and service-related products than to find new customers. And when companies provide aftermarket support, they gain unique insight into their customers' businesses that's difficult for rivals to acquire.

The authors, who have studied after-sales service networks for more than 20 years, have developed a six-step approach to help companies improve after-sales service quality levels, reduce investments in service assets, and cut operating costs. To be successful, firms must identify the products they want to support, design a portfolio of service products, use multiple business models, determine after-sales organizational structures, create an after-sales supply chain, and monitor performance. Companies that ignore these steps, say the authors, are doomed to mediocrity.

Reprint R0605H; HBR OnPoint 4311

GOVERNMENT & LAW

141 | Change Management in Government

Frank Ostroff

Since the days of John F. Kennedy's New Frontier, the American public's regard for the competence of public agencies and the value of the services they perform has steadily declined. During that time, innovations in management practice and thinking have mostly originated and been tested in the private sector. But recent events, such as the attacks on the World Trade Center and the engulfment of New Orleans, have demonstrated how essential it is for public agencies to be well run, too. Unfortunately, few public administrators have a background in change management, and a variety of factors – such as civil service rules, political considerations, and the limited tenures of agency heads – have combined to make true reform a rare event. These facts of public life may never go away. But some agency leaders have figured out how to court important stakeholders, rededicate staffers to an agency's true mission, undertake reform so comprehensively that resistant elements are unable to subvert it, and lay the groundwork for next steps clearly and systematically.

Consultant Frank Ostroff has studied turnarounds at the federal Occupational Safety and Health Administration, the Government Accountability Office, and Special Operations Forces – the fast-response, clandestine arm of the military. From these examples and others, he has distilled five principles that underlie successful change efforts: Improve performance against agency mission; win over external and internal stakeholders; establish a road map; recognize the connections among all the organizational elements; and be a leader, not a bureaucrat. Change programs that follow these principles are more likely to survive when leadership changes hands.

Reprint R0605J

Subscriber Online Access

Harvard Business Review now offers subscribers free online access at www.hbr.org. Enter your subscriber ID–the string of letters and numbers above your name on the mailing label (highlighted below). For help, please contact subscription services (listed below).

```
#BXBCDKT        ********    3-DIGIT 024
#STT03008098    8#452438
JANE Q SAMPLE                    JAN 06
60 HARVARD WAY                     BAL1
BOSTON   MA   02163
```

```
******22111******   000002513 HBR566   22111  Y573
JOHN Q SAMPLE
TOWER HOUSE SOVEREIGN PARK
LATHKILL STREET
MARKET HARBOROUGH
LEICESTERSHIRE              LE16  9EF
ENGLAND
```

Subscription Services

Subscribe online: www.hbr.org

Orders, inquiries, and address changes

U.S. and Canada

Phone: 800-274-3214
Fax: 902-563-4807
E-mail: hbursubs@neodata.com
Address: *Harvard Business Review*
P.O. Box 52623
Boulder, CO 80322-2623

Overseas and Mexico

Phone: 44-1858-438868
Fax: 44-1858-468969
E-mail: harvard@subscription.co.uk
Web site:
www.subscription.co.uk/help/harvard
Address: *Harvard Business Review*
Tower House, Sovereign Park
Lathkill Street
Market Harborough, Leicestershire
LE16 9EF, England

Rates per year

U.S., $129; Canada, U.S.$139
International, U.S.$165; Mexico, U.S.$139

Payments accepted

Visa, MasterCard, American Express; checks in U.S. dollars payable to *Harvard Business Review.* Bills and other receipts may be issued.

Library Access

Libraries offer online access to current and back issues of *Harvard Business Review* through EBSCO host databases.

Article Reprints and Permissions

Reprint numbers appear at the end of articles and executive summaries. Contact our customer service team to order reprints or to obtain permission to copy, quote, or translate *Harvard Business Review* articles. Reprints are available in hard copy, as electronic downloads with permission to print, and in customized versions.

For information or to order

Customer Service Department
Harvard Business School Publishing Corporation
60 Harvard Way
Boston, MA 02163
Phone: 617-783-7500
U.S. and Canada: 800-988-0886
(8 AM – 6 PM ET weekdays)
Fax: 617-783-7555
E-mail: custserv@hbsp.harvard.edu

Reprint prices

1–9 copies	$6.00 each
10–49	$5.50
50–79	$5.00
80–99	$4.50
100–499	$4.00

(Minimum order, $10. Discounts apply to multiple copies of the same article.)

Harvard Business Review OnPoint Articles and Collections

Many articles are available in enhanced *Harvard Business Review* OnPoint editions, which include a one-page synopsis highlighting key ideas and company examples, the full text article, and an annotated bibliography. *Harvard Business Review* OnPoint numbers are listed at the ends of articles and executive summaries.

Harvard Business Review OnPoint collections include three OnPoint articles with a one-page overview comparing the articles' perspectives on a topic. Collection numbers appear at the ends of executive summaries.

Harvard Business Review OnPoint prices

Articles

1–9 copies	$7.00 each
10–49	$6.50
50–79	$6.00
80–99	$5.50
100–499	$5.00

(Minimum order, $10. Discounts apply to multiple copies of the same article.)

Collections

1–9 copies	$16.95 each
10–49	$13.56
50–99	$11.86
100–499	$10.17

Custom and Quantity Orders

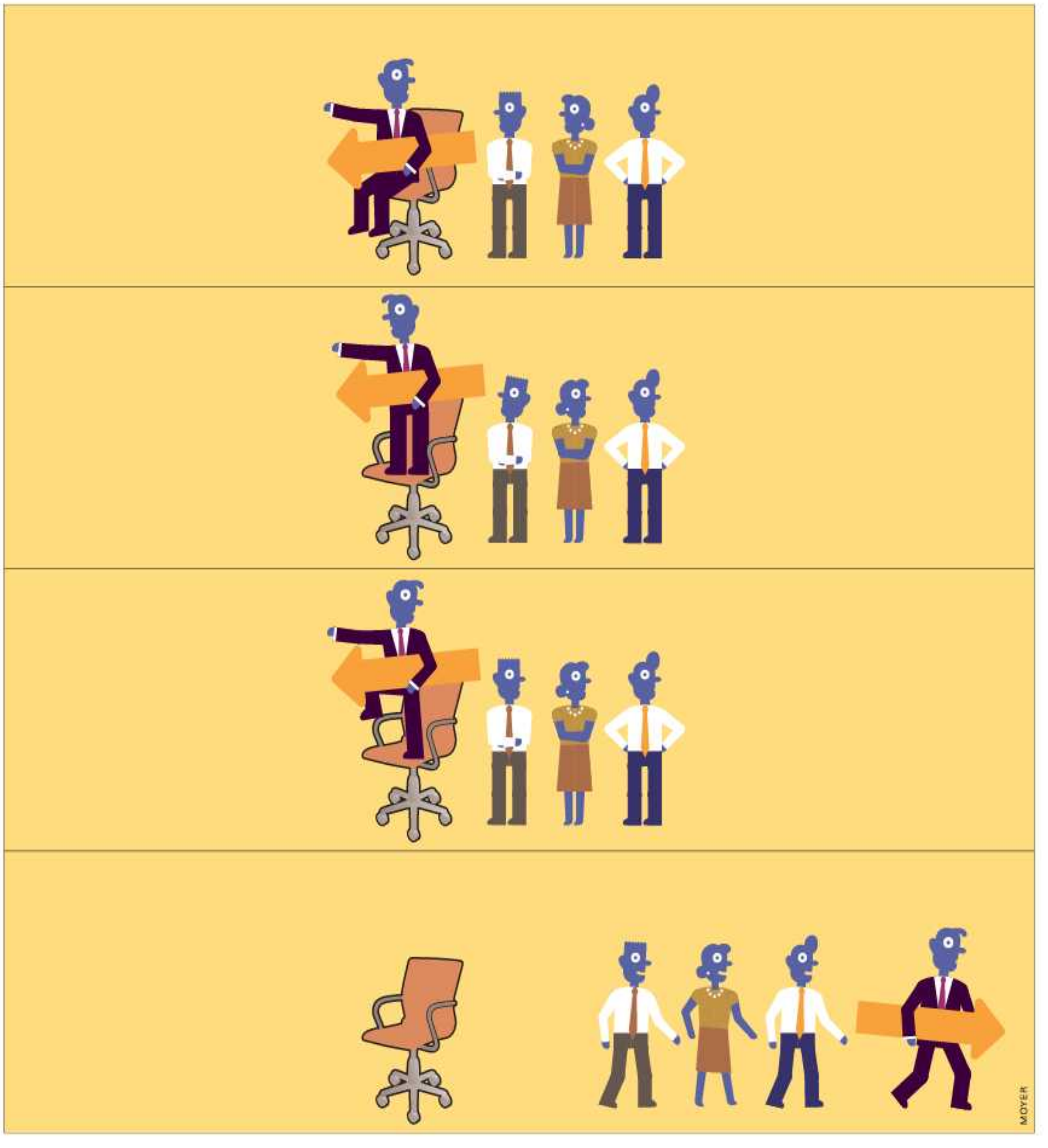
For quantity estimates or quotes on customized reprints and *Harvard Business Review* OnPoint products, call Rich Gravelin at 617-783-7626, fax him at 617-783-7658, or e-mail him at rgravelin@hbsp.harvard.edu.

For subscriptions, reprints, and *Harvard Business Review* OnPoint orders, go to www.hbr.org.

Postmaster:
Send domestic address changes, orders, and inquiries to: *Harvard Business Review,* Subscription Service, P.O. Box 52623, Boulder, CO 80322-2623. GST Registration No. 124738345. Periodical postage paid at Boston, Massachusetts, and additional mailing offices. Printed in the U.S.A. *Harvard Business Review* (ISSN 0017-8012; USPS 0236-520), published 12 times a year for professional managers, is an education program of the Harvard Business School, Harvard University; Jay O. Light, acting dean. Published by Harvard Business School Publishing Corporation, 60 Harvard Way, Boston, MA 02163.

Volume 84, Number 5

by Don Moyer



Follow the Leader

It's easier to lead people where they already want to go. But where is that? What, for example, do people want from work, besides a paycheck and somewhere to show up every day? Hitting targets, helping others, winning respect, gaining power–everyone's motivation is different, right?

In fact, people are more alike than different. In *Human Universals,* anthropologist Donald Brown compiled more than 200 behaviors that are shared by people everywhere–from playing with toys to fearing death. As Marcus Buckingham points out in *The One Thing You Need to Know,* leaders excel when they tap the deepest universals.

Because anxiety about the path ahead is one of the most powerful work-related universals, people particularly value leaders who provide a clear picture of the future. Setting direction is important, and making the future vivid with actions, words, pictures, and stories is vital. As Buckingham says, "Clarity is the preoccupation of the effective leader. If you do nothing else as a leader, be clear."

Don Moyer can be reached at dmoyer@thoughtformdesign.com.