The Change Leader's Toolbox…page 72 Biotech's Failed Promise…page 114

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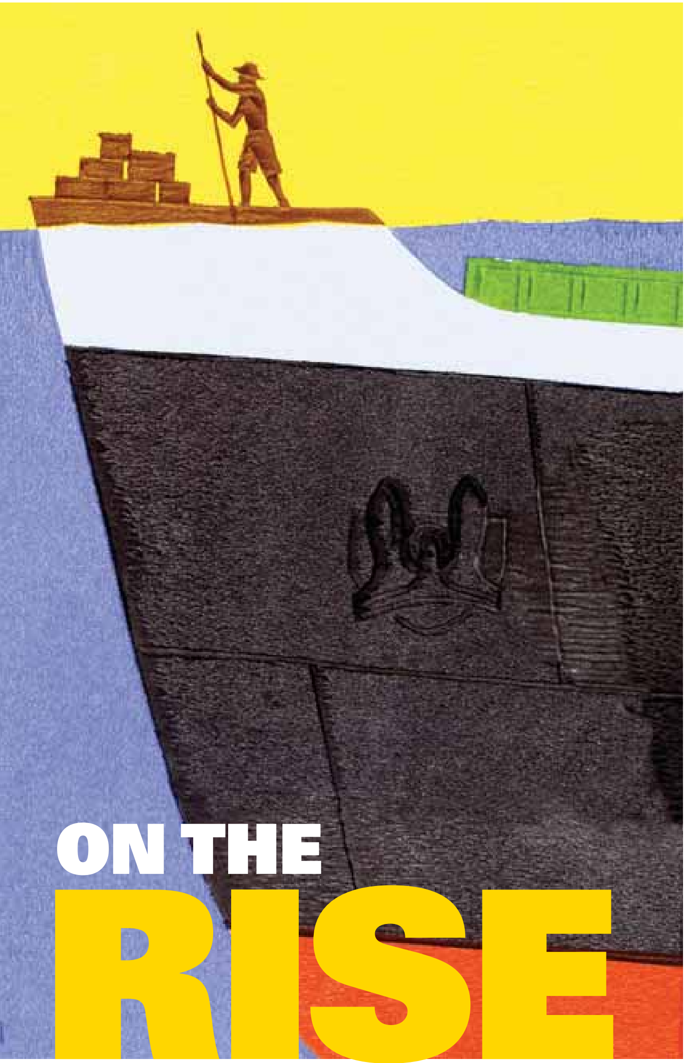

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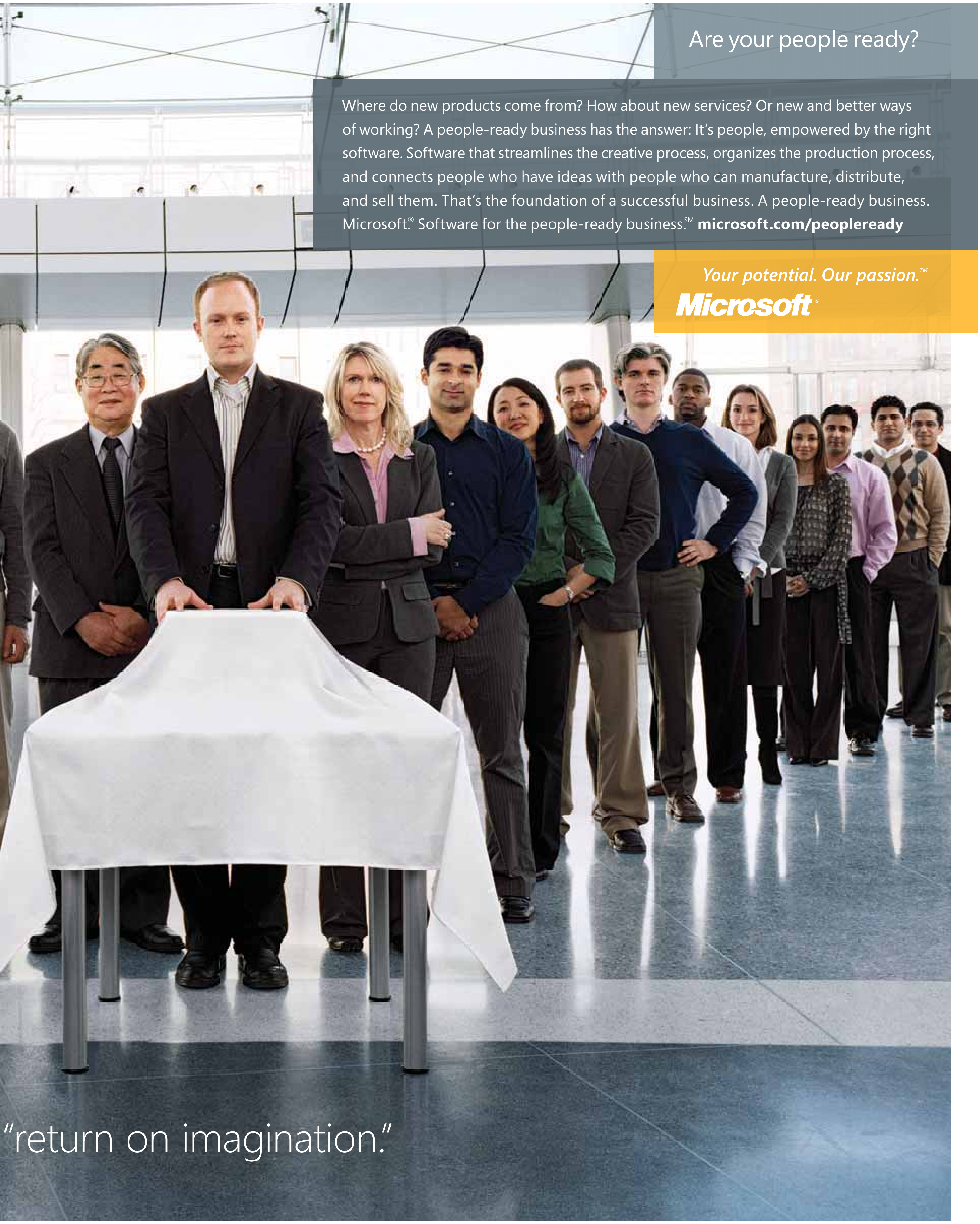
In a people ready business, ROI stands for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Features

October 2006

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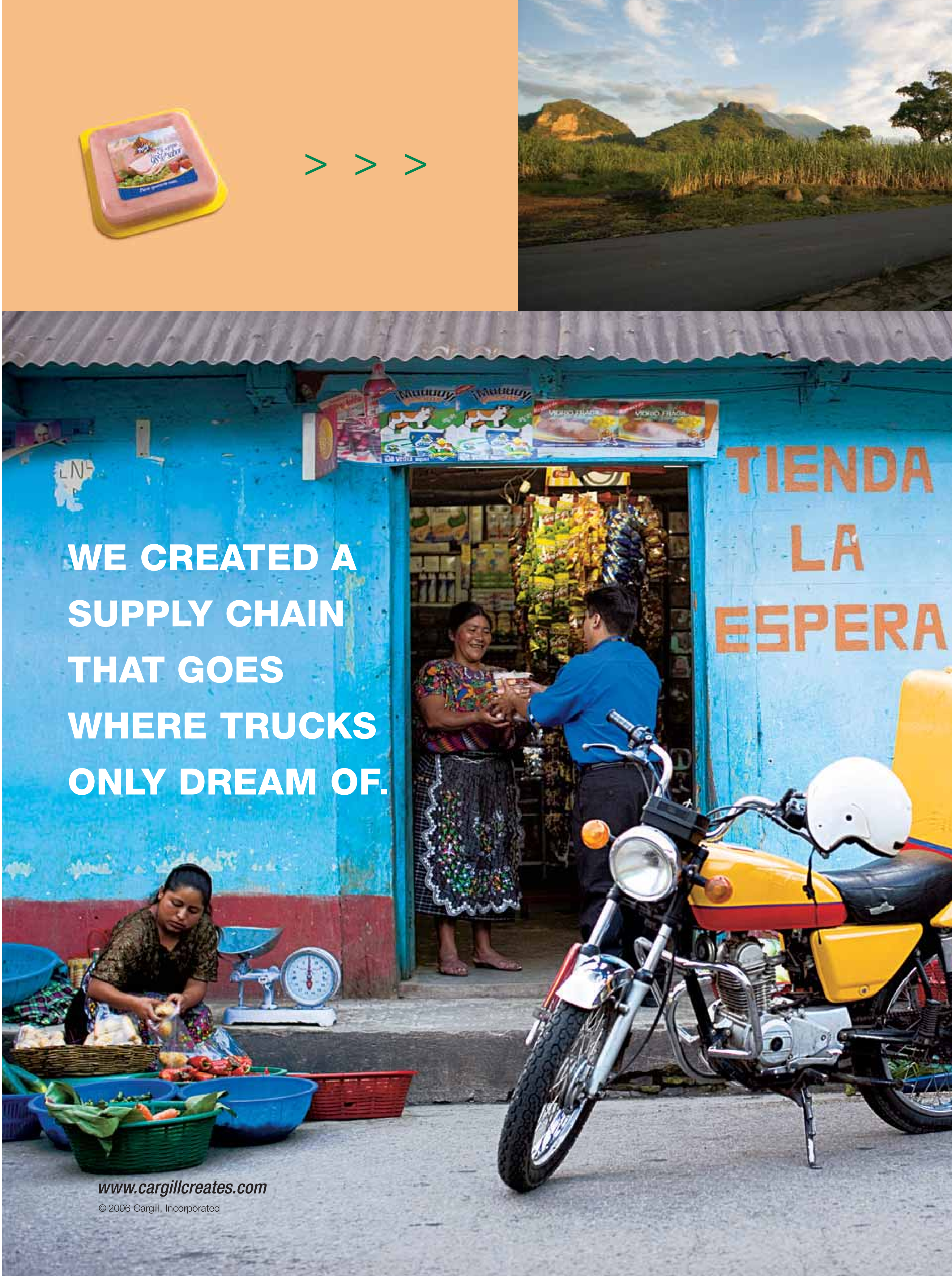
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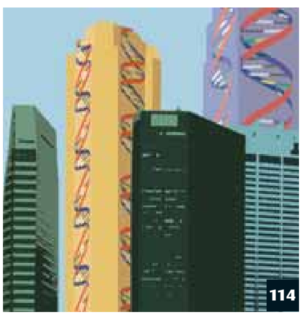

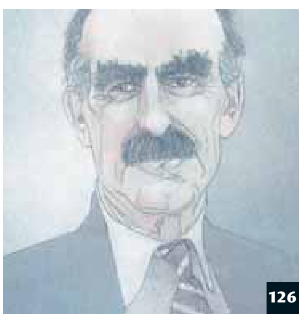

Organizations in this issue are indexed to the first page of each article in which they are mentioned. Subsidiaries are listed under their own names.

AUTHOR AFFILIATIONS

Fair Business Is as Fair Business Does

ROBERT MEGANCK

THE SCANDAL about stock option dating continues to widen. It seems that many indictments are in store. Statistical analysis by finance professors Erik Lie, of the University of Iowa, and Randall Heron, of Indiana University, indicates that nearly 30% of U.S. companies might have back-dated options. That is, the firms appear to have granted options as of a date prior to the date on which they were really issued, in order to exploit a lower stock price. Meanwhile, a recent *Wall Street Journal* study demonstrated that in late September 2001 – while the world and the market were reeling from the attacks on the World Trade Center and the Pentagon – scores, perhaps hundreds, of American companies were ladling out options to hundreds, perhaps thousands, of executives.

Sleazeballs and privateering ghouls. Is that what business is about? Or is it about earning a legitimate (even a great) reward for legitimate work? Is it about "what's in it for me?" Or is it about the value we create for one another, our customers, and our communities? Is it about greed or about ambition?

In the decade and a half since the demise of the Soviet Union, Russia has experienced an epic struggle between capitalism and kleptocracy. As Western companies invest in China, India, Brazil, and other emerging markets, they're calling for a rule of law that is simultaneously less burdensome and less capricious. They want reasonable regulations and honest enforcement, which is to say congruence between the letter of the law and its spirit. Their emerging-market counterparts want the same. The only favor a business should expect is to be treated fairly. If that isn't too much to ask of politicians in emerging markets, then surely executives in America can behave with similar decency.

• • •

In Shanghai a couple of years ago, I heard one question from perhaps half a dozen business leaders and academics: How can our companies become global players in their own right, not just suppliers to established Western firms? Harvard Business School professors Tarun Khanna and Krishna Palepu have been studying that topic for six years. "Emerging Giants: Building World-Class Companies in Developing Countries" is the fruit of their labor. It shows that companies in emerging markets can exploit their advantages (such as low costs and privileged access to their home markets) and overcome their handicaps (such as weak domestic infrastructure and spotty talent markets) – but only by making tough strategic choices. Most of what's been published about emerging markets has been written from the perspective of Western incumbents. "Emerging Giants" looks through the window from the other side, and every business strategist should see the view.

• • •

This is as interesting an issue of HBR as we've ever published. Every article is as good as a cashew. In "Can Science Be a Business? Lessons from Biotech," Gary Pisano unravels the riddle of why the business of biotech hasn't lived up to the promise of the science. Senior editor Diane Coutu presents "Ideas as Art," a conversation with James March, the legendary Stanford professor whose work on decision making and the theory of the firm has made him business gurus' favorite guru. "Strategies for Two-Sided Markets," by Tom Eisenmann, Geoffrey Parker, and Marshall Van Alstyne, is HBR's first look at the hottest topic in strategy. When most strategists envision their businesses, they imagine a value chain with inputs (costs) on the left and outputs (revenue) on the right. In many industries, however, costs and revenues are found in multiple directions – think of media companies that connect audiences with advertisers. Finally, don't miss "The Tools of Cooperation and Change" by Clay Christensen, Matt Marx, and Howard Stevenson, a wise and practical article about the seemingly simple problem that is the essence of management. As they write: "The primary task of management is to get people to work together in a systematic way....a complicated job [that] becomes much more so when managers are trying to get people to change." What tools, they ask, do managers have? And which should managers use under which circumstances?

Thomas A. Stewart

Harvard Business Review

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LEO ACADIA

GRIST

The Rise of Corporate Nationality

by GEOFFREY G. JONES

Over a decade ago, the political scientist Robert Reich forcefully argued that large multinational firms were becoming stateless global webs and that corporate nationality was increasingly irrelevant. In recent years, the notion that global firms are becoming divorced from the nation-state has gained wide currency, strengthened by the acceleration of outsourcing and offshoring and the growing number of companies that employ more people and sell more products and services outside their home economies than within.

But how well does this perception comport with the facts? If you look at the historical evidence on the nationality of firms, the opposite conclusion seems more plausible: The nationality of global companies may actually have become clearer and more important in recent decades.

Bear in mind that there's no single test of corporate nationality. At the level of individual products, nationality is often opaque. Labels such as "Made in America" tend to be misleading, because products may be made up of parts sourced from a dozen or more countries. Organizational definitions of nationality can be more solid. In many legal systems, the state of incorporation is the main test. However, in most civil law systems in Continental Europe and other countries influenced by those systems, nationality is determined by the company's seat–the location of its central administration. Occasionally, it's the nationality of the senior managers or the shareholders who control the operation, or the country where most of the business is done, that determines corporate nationality.

In the first surge of globalization, before World War I, nationality was often highly ambiguous. Although the nationalities of the pioneering giants of multinational business, such as Singer Sewing Machines, were evident, much international business did not look like this. Countless commercial and financial businesses – owned by far-flung networks of ethnic Greeks, Scots, Chinese, Jews, and others – crisscrossed national borders. Entrepreneurs moved between countries with remarkable ease in a world without visas and passports. The vast London capital market was tapped by all and sundry, some of whom registered their firms as "British" though little was British about them.

The world wars concentrated peoples' minds on nationality. It became unwise, and sometimes fatal, to be ambiguous. Large multinational corporations such as Ford and General Motors were the dominant organizational form and technological innovators in international business. Yet while Ford and GM may have seemed distinctly American from a U.S. perspective, their overseas subsidiaries often had few links to them. The foreign subsidiaries of major corporations largely stood apart from their parents or other subsidiaries. Tariffs, foreign exchange controls, and the logistical difficulties of disaggregating value chains meant that the level of intrafirm imports and exports was low. Local subsidiaries typically manufactured distinctive products for each market. European companies, such as Unilever, often gave affiliates even more autonomy than their U.S. equivalents, believing that responsiveness to local markets was a major source of competitive advantage. Moreover, at least until the 1980s, governments and the public in many countries were distrustful of foreign companies, and so subsidiaries often portrayed themselves as local firms.

As globalization, liberalization, and deregulation took hold in the 1980s, sensitivities about being perceived as foreign lessened, although they certainly did not disappear. The autonomy of national subsidiaries was scaled back as U.S. corporations, followed, often reluctantly, by their European counterparts, began to seek efficiencies by integrating geographically dispersed businesses. These strategies reduced ambiguity surrounding the nationality of multinationals. The new, globally integrated corporations sought to locate functions wherever they would best fulfill the firm's overall strategy. Such decisions continued to be made by top management, which, with relatively few exceptions, remained the preserve of nationals of the home country.

The influence of nationality on multinational corporations is still strong today. The composition of boards of directors remains heavily biased toward home-country nationals, despite the fact that equity ownership of large corporations is now widely dispersed among countries. In some cases, the pressure for

STUDIES SHOW

Business Lessons from Leeches

by MARC ABRAHAMS

Time-tested wisdom is invaluable – when it's correct. But sometimes, revered "best practices" turn out to be, at best, just practices. Consider, for instance, this report by Anders Baerheim and Hogne Sandvik of the University of Bergen in Norway, titled "Effect of Ale, Garlic, and Soured Cream on the Appetite of Leeches."

"The medicinal leech has regained some of its lost popularity by its present use in microsurgery," the authors write in the *British Medical Journal.* "Sometimes, however, the leeches refuse to cooperate properly. To overcome this problem doctors in the nineteenth century used to immerse leeches in strong beer before applying them to the patient." German doctors – renowned at the time as the world's best – also recommended garlic and sour cream as alternatives to beer.

Baerheim and Sandvik realized that no one had ever actually tested whether beer, garlic, or sour cream really does stimulate the appetite of a leech. So they ran a simple experiment and discovered that the old advice didn't hold up. Sour cream didn't make leeches hungry for blood. Garlic killed them. And beer apparently made them drunk.

When adopting a practice or a technology that's new to you, do pay attention to the conventional wisdom about it. But also remember – whether you're bloodletting with leeches or motivating a workforce – that golden rule of thumb: Trust, but verify.

MARC ABRAHAMS *(marca@chem2.harvard.edu) is the editor and cofounder of the scientific humor magazine* Annals of Improbable Research. *In this regular Forethought column, he unearths studies that shed the oblique light of multidisciplinary research on the science of management.*

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transparency in corporate governance has led to a reduction in ambiguities about nationality. For example, the Shell Group, which had been owned by dual British and Dutch holding companies since its formation in 1907, abolished this structure in 2005 and assumed a single British parent company (albeit one with a head office in the Netherlands). And despite anxiety

about the outsourcing of knowledge work, the globalization of key functions such as R&D remains limited. U.S. and Japanese firms, in particular, prefer to conduct sophisticated R&D in their home markets.

Recent developments in the United States – including the peremptory expulsion of foreign firms from the S&P 500 in 2002 and the recent extraordinary public outcry when Dubai Ports World acquired a British company that operated ports in the United States – underscore the rising relevance of corporate nationality. Today, technological advances may permit different parts of the value chain to operate in different places, companies may hold portfolios of brands with different national heritages, and leaders, shareholders, and customers may be dispersed. Still, the nationality of a firm is rarely ambiguous. It usually has a major influence on corporate strategy, and it seems to be growing in political importance.

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forethought

CULTURE

The New Indian Consumer

by ASHOK GOPAL AND RAJESH SRINIVASAN

When India opened its economy to the global marketplace in the early 1990s, many multinational corporations rushed in to pursue its middle-class consumers – an estimated 200 million people – only to confront low incomes, social and political conservatism, and resistance to change. It turned out that the Indian consumer was a tough one to figure out and win over.

Things are changing. Although attitudes remain complex, they have shifted substantially toward consumerism, particularly over the past decade. The country's recent economic performance is a factor, of course. For three years, GDP growth has been strong and sustained, at an average annual rate of around 8%. The population's demographic profile also plays a role: Indians constitute a fifth of the world's citizens below age 20. So a youthful, exuberant generation, weaned on success, is joining the ranks of Indian consumers.

To examine the changes in attitude, the Gallup Organization conducted two surveys of more than 2,000 respondents gauging the habits, hopes, plans, and evolution of the Indian consumer in the decade from 1996 to 2006. (For a similar look by Gallup at Chinese attitudes, see William McEwen et al., "Inside the Mind of the Chinese Consumer," HBR March 2006.) In collaboration with our colleagues Raksha Arora and Prasun Basu, we mined the data and emerged with three key insights.

Indians are getting more materialistic. Indians are often stereotyped as deeply spiritual people who reject materialistic values. Our research suggests that this stereotype no longer reflects reality. For instance, almost half of India's urban population had adopted a "work hard and get rich" ethos by 1996; another 9% had done so by 2006.

Indians are more motivated than ever by personal ambition and a desire for material success, and they put in the hours it takes to achieve those goals. A recent Gallup poll of more than 30 countries showed that, with an average workweek of 50 hours, India ranks among the hardest working nations globally. (The average in the United States is 42 hours; major European nations such as Germany, France, and the UK have workweeks of fewer than 40 hours.)

Consumerism is becoming a way of life in India. An analysis of Indians' savings goals underscores the increase in materialism. Although long-term plans remain a high priority, life's pleasures in the here and now have gained importance over the past decade. Indians' desire to set money aside for electronics and durables has grown so dramatically that it has nearly caught up with their desire to save for their children's education. Travel and entertainment have also gained ground.

Interestingly, this trend does not apply only to the young – it holds true for people aged 15 to 55. And it is not merely a large-city phenomenon; people in smaller towns espouse these values as well.

Among durable goods, high-tech luxury items are increasingly in demand. The number of Indians who own or use mobile phones, for example, has grown 1,600% – not surprising in a country that is adding more than 3 million subscribers a month. The number of people who own or use computers or laptops is up 100%, albeit from a very small base. Ownership of music systems and televisions is also on the rise.

Across products, a majority of the potential customers are entering the market for the first time. This is great news for marketers, since it signifies an expanding market, which will get even bigger as current owners replace or upgrade what they have.

A word of caution: Although incomes have risen over the past ten years, middle- and lower-income groups are increasingly dissatisfied with their earnings. It is essential to remember that 30% of Indians still live on less than one U.S. dollar a day. The highest-income groups are delighted with what their income can do for them; the middle and lower groups are much less satisfied. In the short term, income constraints and rising costs could slow India's transformation from a needs-based to a wants-based market. However, a heightened desire to lead the good life might well intensify the middle- and lower-income groups' efforts to make more money, thus fueling consumerism in the long run.

Foreign is passé; Indian is paramount. Indians long believed in the overwhelming supremacy of all things foreign. Antiquated products and technologies, well past their "sell by" date in more developed nations, were once lapped up by Indian consumers. Now, though, with Indians succeeding on the global economic stage, "Made in India" is no longer an apology. While Indians' confidence in foreign companies has remained essentially static, their faith in domestic companies has grown. In 1996, only 34% of those surveyed expressed confidence in Indian companies; in 2006, 56% did. Indians realize that not all foreign goods are perfectly suited to their tastes and needs. They have become discerning consumers who want products that are made in India and for Indians.

A look at the most respected brands in India is telling. Of the top 20 named in a survey, eight are Indian, including names like Tata, Godrej, and Bajaj. Only five of the top 20 are new foreign brands. These have succeeded because they have customized technology to meet Indian needs. Hutch, Nokia, and Samsung have done this particularly well. Nokia modified one of its mobile phones by adding a built-in flashlight that truck drivers, for instance, find useful on poorly lit highways. "Indianizing" also has to do with keeping prices at levels that are manageable for the average Indian consumer.

Seven of the top brands come from well-established MNCs that are either thoroughly indigenized or involved in a joint venture that gives them the advantages of both worlds – customization of products for India with levels of quality and technology associated with international companies. Names such as Philips and Hero Honda fall into this group.

Trying to connect with consumers at an "Indian" level is a mammoth task. For one thing, India is a diverse country, with 23 official languages and more than 1,000 dialects. It's also one of the world's oldest civilizations, and rather than dispense with traditional values, it has wrapped modernity around its traditional core. For instance, 83% of Indians approve of women's working outside the home, and 74% approve of women's delaying marriage to further their education or careers (both percentages are up substantially from ten years ago); yet only 25% approve of marriage to someone who is not an Indian, and only 5% approve of couples' living together without getting married.

To the outside world, the harmonious coexistence of seeming contradictions is one of the most confusing aspects of the Indian psyche – but it also signifies the country's openness to change and its ability to add new dimensions without losing old ones. The companies, domestic or foreign, that understand this complexity will be the most successful at working with and selling to Indians and stand to reap enormous benefits of scale.

ASHOK GOPAL *(ashok_gopal@gallup.com) is a principal at the Gallup Organization's Singapore office, and* RAJESH SRINIVASAN *(rajesh_srinivasan@gallup.com) is a principal at Gallup's Princeton, New Jersey, office.*

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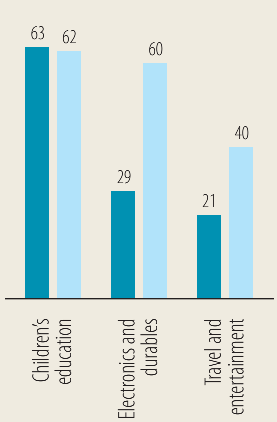
Changes in Consumer Behavior

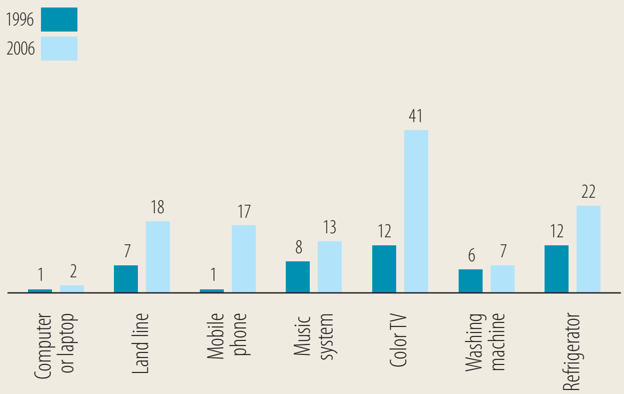
Savings Goals

(percentage of Indians who identified these as among their goals)

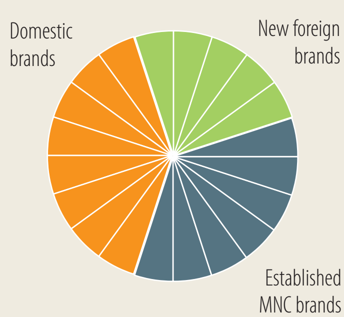


Durable Goods Purchases

(percentage of Indians who own or use)



20 Most Respected Brands in India



MARKETING

Embrace the Dark Side

by MICHAEL J. FANUELE

Ivory soap has been bringing "good, clean fun" to families for more than 125 years. Along with other classic brands like Sears, Kraft, and Tropicana, Ivory has spent decades presenting a vision of life that's all sweetness and light. That vision is also simplistic, cloying, and quickly losing its draw. BrandZ, a global study conducted by the London-based marketing services company WPP, categorizes these once-great brands as "fading stars." They've lost the image-based advantage that once made them beloved.

Today's consumers don't trust the artificial, two-dimensional images that used to work in ads. Sadly, many brand managers haven't figured this out. They're selling fairy tales in a reality-TV world. They haven't learned that imperfections can actually be a source of great appeal. It's not that people are drawn to products' shortcomings; it's that they've grown suspicious of things that seem too pure. To be strong, brands need authenticity, and that can be found in a brand's shadows, or its darker attributes – what market researchers call "negative equity" and brand managers try their hardest to hide.

The few brands that have searched for strength in their shadows have found great success. A few years ago, I helped reposition Lipton Cup-a-Soup, one of those brands whose history was filled with saccharine moms and smiling kids. We started by accepting the truth: The 1970s are over. These days, no right-minded parent would serve something so high in sodium and low in nutritional content as part of a family dinner. We promoted Cup-a-Soup as an office snack instead, an alternative to a late-afternoon Snickers or Coke. By locating a new, more beneficial context for the brand's negative attributes, we increased sales every month the ads ran, delivering a 60% cumulative spike on top of a price increase of 20%.

I had a similar experience working with a marketing team on Ragú. For years, Ragú was in a pitched battle with Prego over which sauce was thicker. We ended that fight by accepting Ragú's shadow. Our brand wasn't as rich and chunky as Prego, but that could be an advantage. Chunky sauce may be good for grown-ups, but it's not for the typical ten-year-old. Instead of trying to convince the world that Ragú was hearty, we celebrated what it truly was: a kid's delight. The strategy reversed a decadelong sales decline.

Perhaps the best example of "shadow branding" is the London police force's dramatic recruitment campaign in 2000. The effort eschewed the traditional trappings of recruitment advertising. It didn't promise an exciting career, valuable skills, or the respect of schoolchildren. Rather, it showed how difficult the job was. One ad featured Simon Weston, a badly scarred Falklands veteran whose artillery boat had been bombed. The war hero wept, asking viewers to imagine "going round to someone's house…to tell a man that his wife and child have been killed in a car crash." Another commercial asked viewers to envision how horrible it would be to have to respond to a call about a baby who had died in his sleep – to collect the child's teddy bear in a plastic evidence bag as the inconsolable mother watched. These ads depicted police work as distressing, and yet they attracted recruits. To gauge the effectiveness of the campaign, the ads directed prospective applicants to a dedicated phone number and Web site. More than 100,000 inquiries flooded the recruitment office, and from that eager pool the police force selected 6,000 new officers – a 50% increase over the previous year, according to the British Home Office.

Part of the appeal was that the ads issued one big professional dare: Are you brave enough to be a police officer? But something deeper was at work. A survey conducted by TNS Gallup found that people who had seen the ads were twice as likely to "respect the police" as those who hadn't. The difficult part of policing – its dark and scary shadow – made the London police brand more authentic and thus more appealing.

The lesson here? Perfect purity is perfectly dull. In our personal lives, we're hardly ever attracted to slick virtue; we love people with all their faults and flaws and contradictions. Likewise with brands. In acknowledging their shadows, brands target the right people, and they do so convincingly. Their shadows make them stronger.

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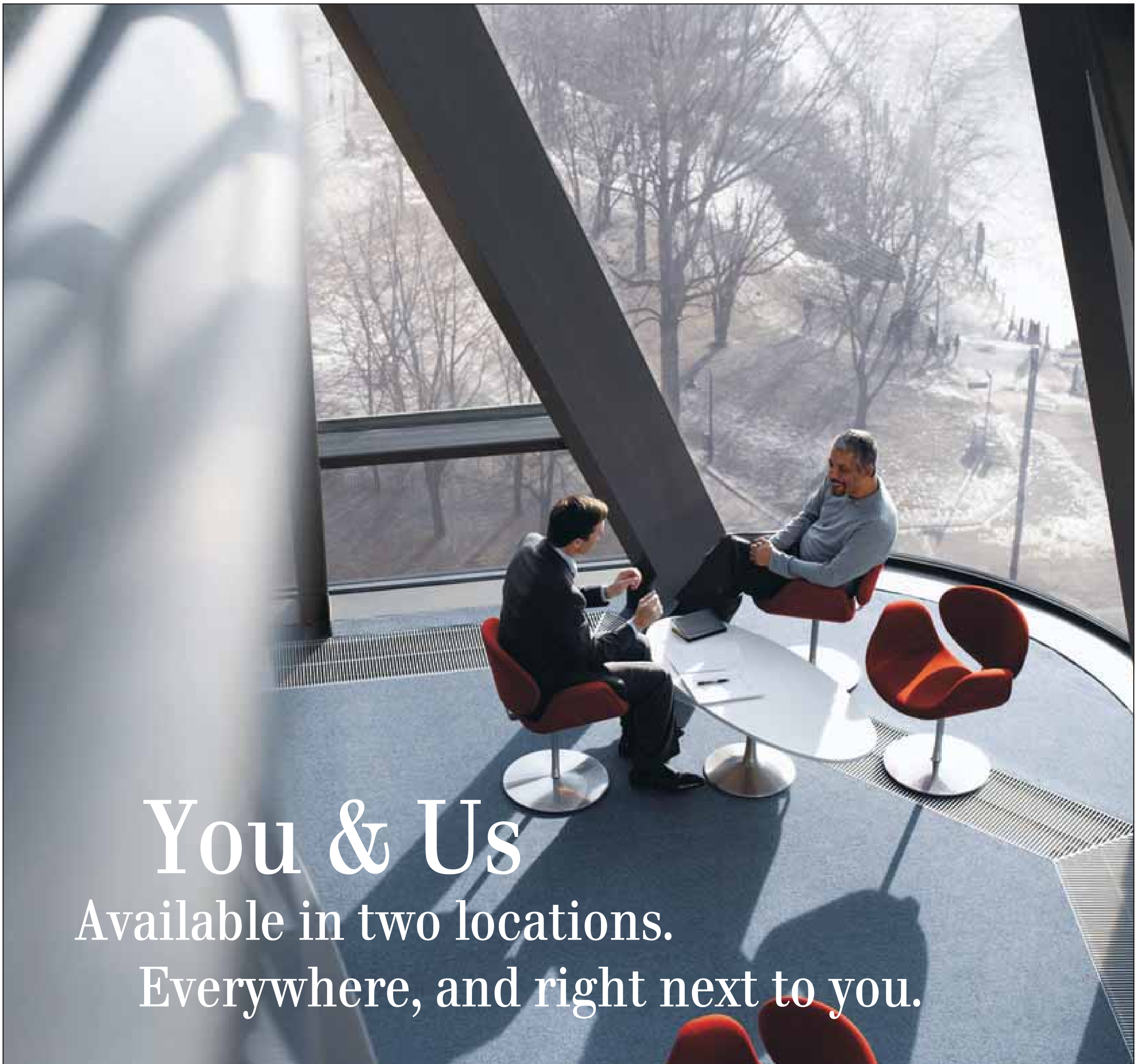

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CORPORATE COMMUNICATIONS

Get Your Act Together

by PAUL A. ARGENTI AND THEA S. HALEY

In October 2005, an internal Wal-Mart memo was leaked to the *New York Times.* Sent to Wal-Mart's board by the executive in charge of employee benefits, it proposed various ways to cut spending on health care while minimizing damage to the retailer's reputation. Among the recommendations: Hire more part-time workers and discourage less-healthy workers from applying to Wal-Mart. The recommendations made sense from a business perspective. But the memo came to light just a day after the company had touted its social responsibility in a briefing to reporters on reduced energy use in stores. When the story appeared on the front page of the *Times* business section, that irony did not go unnoted.

It was a stumble that seriously undercut the company's two primary objectives – to trim costs and burnish its reputation – and it's exactly the kind of thing that happens when a company does not have an integrated approach toward its communications.

Yet integration is becoming harder to achieve in corporate communications. Just as constituency groups are becoming more complex and multilayered, so are many companies. Increasingly, we see organizations within organizations – large companies made up of a collection of underlying operations that cut across business lines, time zones, and cultures. Messages emanate from senior management and various communications functions (investor relations, media relations, internal communications, government relations, and so on) through both formal and informal mechanisms, and the intended audience for each has unprecedented access to what has been said to the other audiences.

To discover the internal structures, processes, and cultures behind consistent messaging, we interviewed more than 50 senior executives at exemplar firms including Dell, PepsiCo, FedEx, Infosys, and the New York Times Company. We expected to find that these companies had combined their communications functions into one organization, reporting up to one senior executive. Not so.

While some of our exemplar companies such as FedEx do group their communications functions under one senior officer, others, like Johnson & Johnson, nest their communications professionals within individual business units. Often citing their scale and geographical dispersion, they resist centralized reporting, considering it unwieldy and unnecessary. Some companies combine aspects of both models. Dell, for example, has a core corporate team supported by communications professionals residing within the firm's many operating divisions. The New York Times Company has an informal council of executives from various areas of the business. Other companies create a position wholly focused on achieving consistent messaging across departments and audiences.

Even in the absence of any formal mechanism, the right culture can drive a level of consistency that from the outside looks carefully orchestrated. We saw this in "decentralized" companies where robust informal networks and information sharing – often facilitated by sophisticated IT – were at work.

In short, the idea that organizational structure accounts for consistent communications is false. What makes the difference, we found, is a company's approach to formulating a communications strategy. Organizations in which communications strategy was aligned with overall corporate strategy sent the most consistent and powerful signals. Without exception, the best companies we studied had created and disseminated detailed communications plans clarifying the goals being pursued, the tactics chosen to reach them, and the metrics by which success would be measured. At the same time, they gave locally based communications professionals the latitude to calibrate messaging for their markets. The goal, as one executive put it, was "not to speak with one voice but to speak in harmony."

We suspect that the effectiveness of this strategy is linked to leadership skills of these at the head of the communications functions in these companies – specifically, strong business backgrounds, experience navigating complex organizations, and the personal influence to move opinions. Not surprisingly, the very best communications performance we observed was in companies where the head of corporate communications had that much coveted "seat at the table" – a presence and voice in the process of formulating overall company strategy and direction.

Today, it takes strong and clear signals to penetrate the noise bombarding consumers and to prevent distortions of your message by antagonists eager to exploit inconsistencies. Remember, what's important is not *how* you align your communications but that you do.

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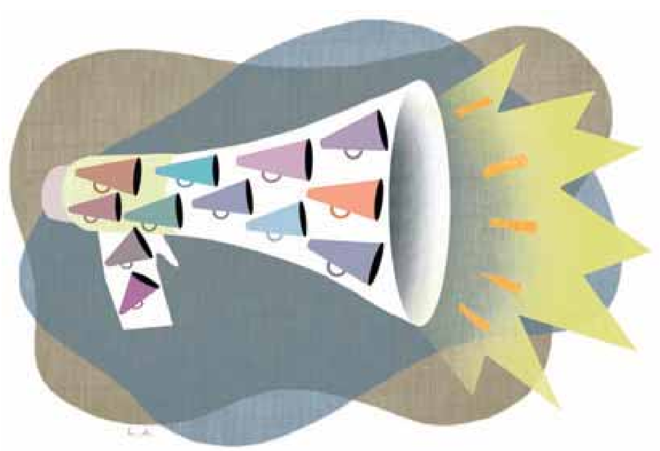

CONSUMER BEHAVIOR

Are You Ready for E-tailing 2.0?

by PAUL HEMP

E-commerce is poised for a fundamental change – a shift from *making online purchases* (commercial transactions involving a single consumer interacting with a two-dimensional Web page) to *going shopping online* (a social experience involving groups of people interacting with one another in a three-dimensional Web space). The difference between the two is as great as the difference between sitting on your couch leafing through a J. Crew catalog and heading off with friends for an afternoon trip to the mall. If virtual shopping takes off, it is likely to unleash the next surge of e-commerce growth.

The evolution is foreshadowed by the growing popularity of online environments in which thousands of people interact in real time in 3-D virtual worlds, places such as *Second Life, Entropia Universe,* and *There.* Although real-life products have occasionally been offered for sale in these worlds, the May 2006 opening of an American Apparel outlet in *Second Life* was a milestone. At the store, customers can browse through the merchandise and then, by clicking on an image of a particular item, purchase virtual clothing for their avatars – the characters that users create to represent themselves in virtual worlds – or real-world clothing for themselves. Other companies have followed suit: For example, Adidas is slated to open a store in *Second Life* this fall.

The shopping experience in these online worlds is still pretty rudimentary. At the American Apparel store, virtual versions of the clothing are crude approximations (though they are also significantly cheaper than the real article; most of them sell for under $2), and you can't try on an item before buying it. In order to buy the real-world article, you click on an image of the product and are simply transported to the company's regular Web site, where you complete the purchase. In fact, American Apparel currently sees the store more as a brand-building than as a revenue-generating venture.

But virtual-world commerce is becoming ever more sophisticated, and people will soon be able to replicate online the sort of buying experience they have in the real world. Better technology is enabling realistic representations of products and the ability to interact with them. American Apparel has experimented with the use of avatar clerks – controlled by flesh-and-blood company employees – who can answer questions about clothing items, both virtual and real. Avatars' capabilities are also improving. You can create an avatar that mirrors your actual appearance, thus enabling you to see how an outfit would look on your real body. Avatars' somewhat clunky gestures, typically activated by typing a word like "shrug" or by choosing from a drop-down list, are likely to be replaced by realistic moves that, through the use of Webcams or other devices, capture and mimic the body motions of the person at the keyboard.

As the experience becomes more realistic, there will be a return to the "social and recreational aspect of shopping," a crucial element of bricks-and-mortar retailing that was lost when retailers went online, says Bob Moore, a sociologist at the Palo Alto Research Center who studies virtual human interactions. One can envision a group of teenage girls arranging to meet at a virtual store to try on clothes, comment on each other's choices, and ultimately choose something, real or virtual, to buy. (Though the sales receipts from virtual items are small, getting people to sport branded items in a virtual world has its own benefits.)

But virtual shopping expeditions may be driven more by the urge to chat than the urge to buy. Virtual shopping "would give friends something to do as they socialize online instead of simply sitting and IM-ing each other," says Michael K. Wilson, head of the company that runs *There.* Indeed, Raz Schionning, who oversees Web marketing for American Apparel, says visitors to the *Second Life* store often arrive in groups and seem to know one another. They typically talk about the clothes on display. They might buy something or watch the in-store videos. But they often end up chatting about unrelated topics, even as they continue to linger in the store – mirroring the activity at popular virtual clothing stores in *Second Life,* such as Preen and Dazzle Haute Couture.

The potential of online shopping goes far beyond clothing stores' opening their doors in existing virtual worlds. Developers could create stand-alone online shopping malls comprising dozens of retailers of all kinds, including music sellers. For instance, iTunes could create a virtual store in which people would hang out and listen to others' playlists, dancing as they swapped opinions about the music. Even eBay, with its jumble-sale character, might be transformed from a tool for finding a particular item to a world in which people could rummage together through piles of virtual stuff, the equivalent of an afternoon of real-world antiquing in the country with friends – an event that, even if no one is looking for anything in particular, inevitably results in someone's purchasing something.

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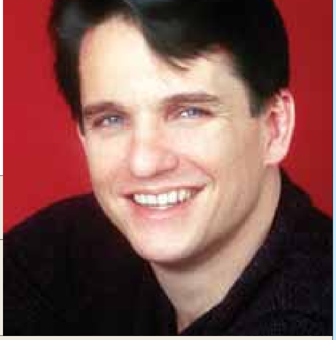
Conversation

CONDUCTOR KEITH LOCKHART ON TRADITION AND LEADERSHIP

Responsibility Junkie



CHRISTIAN STEINER

As conductor of "America's Orchestra," the Boston Pops, for the past 12 years, Keith Lockhart has conducted more than 900 concerts in the United States and overseas, in addition to serving as music director of the Utah Symphony. Lockhart recently spoke with Glenn Mangurian, an executive in residence at the University of Massachusetts, as part of the university's Uncommon Leadership breakfast series. In this edited conversation, Lockhart discusses the challenges of taking the helm of a century-old institution.

You've been in this job for more than a decade, but people still often think of you as the new conductor. When will that change?

In Boston, it takes about 100 years not to be the new person. Seriously, the challenge is not so much in becoming established as the conductor of the Boston Pops, but in following the legacy of a person whom people in Boston know of even if they were born after he died: Arthur Fiedler. Fiedler died in his 50th year at the helm. When he died, his name was inextricably linked to the Pops. The Pops knew that it would be difficult to appoint a new conductor without everyone saying, "Hah, but he's not Arthur Fiedler." So in 1980, after Fiedler died, they recruited somebody whose fame was already established for doing something completely different: John Williams, who was famous for composing the *Star Wars* score three years earlier. After 13 years of Maestro Williams's tenure, the Pops felt it was safe to bring in somebody whose name and fame would be bound together with the institution's.

What did you do to make the Pops yours?

The best advice about that actually came from John Williams. I had dinner with him the night before it was announced that I'd be the new conductor, February 5, 1995. He said, "People here love the Boston Pops, they love the institution. It's not about you. Just be a caring steward of the institution; show that you love the Pops and they will love you because of that. You don't have to worry about making it your own institution."

Leading musicians presents some unusual challenges.

Most concert musicians had "the dream." Most everyone in the violin section thought they'd be the one playing the Tchaikovsky *Concerto* in front of the orchestra, leading it with their artistic impulses. Few of them dreamed about being a person who takes orders. But in any organization, if there are no people who are followers, you've got a situation.

How does the conductor empower everybody while still creating a musical collaboration that works? The key in my experience is to make the musicians feel invested in your decisions–so that they own them, too. That's not always easy. For example, if a bassoonist has a solo in the middle of a piece and you say, "Well, I really don't like where that's going"–how do you get that musician to buy into your idea? Unlike most businesses, you don't have the luxury of having a private office in which to talk these things through. Rather, in real time, you're criticizing this person in front of 85 of his or her peers. It can be humiliating, and others can become defensive on their colleague's behalf. So, even though you have formal authority as the conductor, if you haven't built support from the ground up at the start, you'll be in trouble.

How do you build that sort of support?

That comes in part from being someone who can be absolutely trusted and relied upon. I've had air-raid sirens go off during concerts, blackouts, rainstorms postponing outdoor televised performances. In situations like that, people ask, "What does Keith want to do?" And if I can take charge and come through for them in a crisis, that goes a long way. Even when things are going smoothly, every player is relying on you. A violinist may seem buried in the sheet music. But she knows exactly when she needs to look up for guidance. I'd better be there, as I used to tell my students in my conducting classes: If you sometimes think you're peripheral, just make a mistake, because the moment you do, you'll get 80 pairs of eyes glaring at you.

People assume that when you become a conductor you're into some sort of a Napoleonic thing–that you want to stand on that big box and wield your power. I'm not a power junkie, I'm a responsibility junkie. If I were in it for the power, I don't think I could get the orchestra to follow me anywhere.

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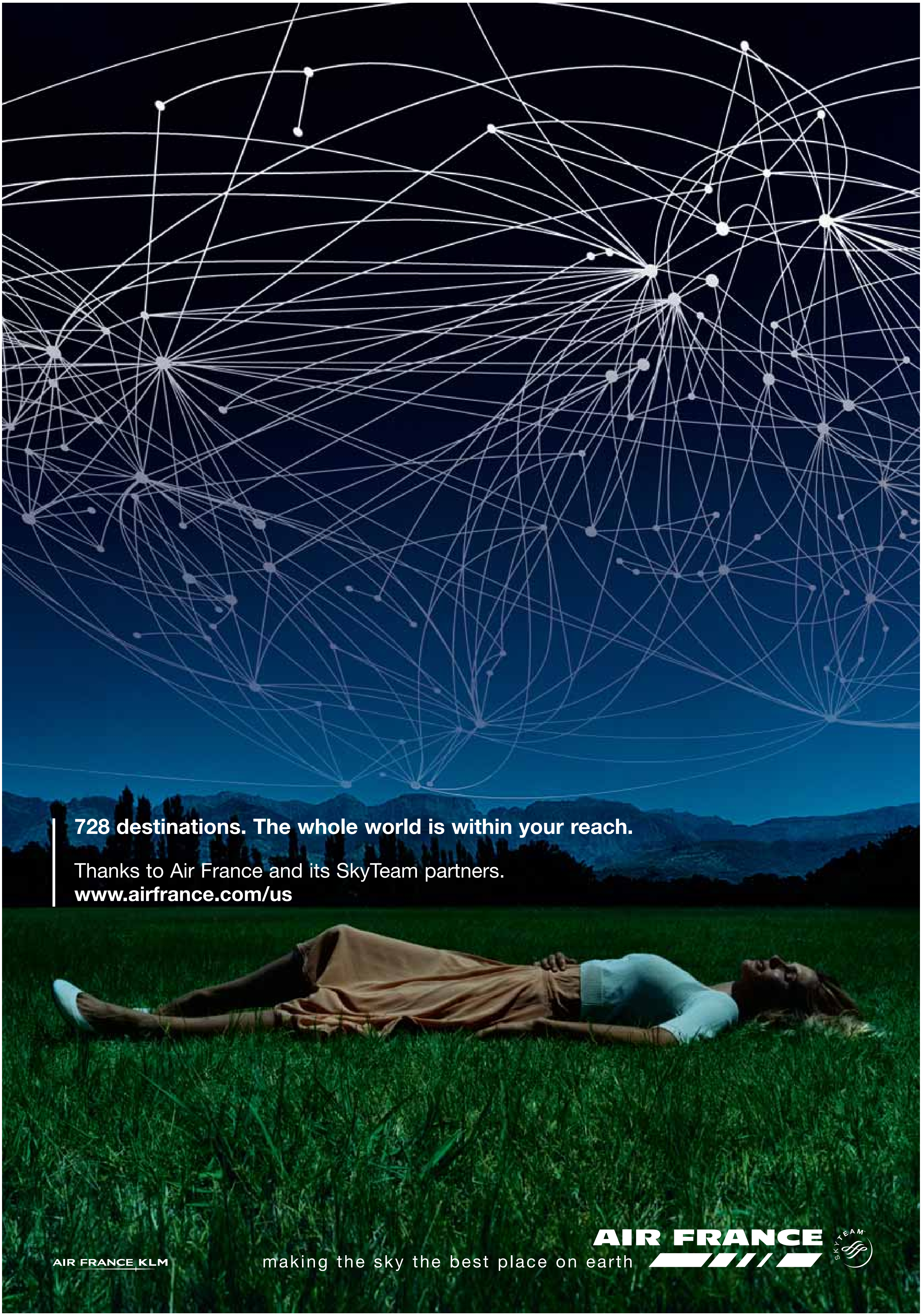
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GLOBALIZATION

Apocalypse Now?

by PANKAJ GHEMAWAT

To the ancient Greeks, an apocalypse was the revelation to a privileged few of something hidden from the masses. In biblical writings, the term came to denote an abrupt transition from the present age to a future age, accompanied by great upheaval and extreme outcomes.

Much of the classic literature about globalization was apocalyptic in both senses of the term. The notion of an apocalypse due to globalization can be traced at least as far back as 1983, to the late Ted Levitt's article "The Globalization of Markets" in *Harvard Business Review.* But with the profusion of new books on globalization – from 2000 to 2005, more than 5,000 were published, compared with fewer than 500 in the 1990s – the apocalypse has become the stuff of best sellers.

Is the globalization apocalypse upon us? Visions of the apocalypse generally evoke the disappearance of borders and the integration of markets and assume or predict internationalization levels close to 100%. But such predictions of complete cross-border integration are way off the mark: Most types of economic activity that might cross borders are still largely concentrated domestically. Levels of internationalization of phone calls, management research, charitable giving, investment, and even trade (as a fraction of economic activity) cluster much closer to 10% than to 100%. (See the exhibit "The 10% Surprise" for a closer look at the numbers.)

The slow growth and limited extent of internationalization point up the substantial national differences with which border-crossing strategies must still contend. Fascination with the globalization apocalypse is only one of the reasons such differences seem to be underplayed in international strategy. Others include companies' tendency to uncritically accept visions of borderlessness out of a desire to seem to "get it"; incentives that encourage headlong international growth; the inability of most executives to grasp how different the conditions in foreign countries truly are; and the fact that firms that are successful at home are disproportionately likely to venture abroad – and to be overly enamored of their domestic business models.

Predictions of a globalization apocalypse are way off the mark: Most types of economic activity that might cross borders are still largely concentrated domestically.

How should managers incorporate national differences into their international strategies?

• Determine which of a range of national differences – cultural, administrative, geographic, and economic – matter the most in your industry. This will tell you which ones are particularly important for your international strategy to address.

• Analyze differences within differences: Don't just distinguish between home and abroad. Categorize foreign countries as similar to yours along the dimensions that matter most or as relatively different. This will help you decide where to compete.

• Stretch your responses to differences beyond tweaking the domestic business model – and also consider ways to profit from differences, rather than treating them all as constraints on value creation. The objective here is to foster creativity in thinking about how to compete.

If this simply sounds like additional hard work with an uncertain payoff, remember that at its core, the message here is an optimistic one. From a managerial perspective, differences afford room for distinctively international strategic thinking – and the prospect of significant improvements in performance. And from a social perspective, differences supply some reassurance that increasing global integration will not inevitably lead to the triumph of the bigger and blander.

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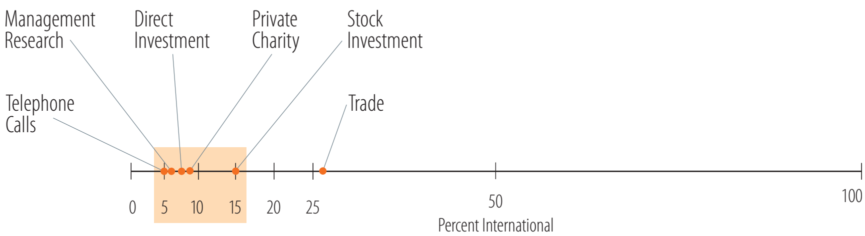
The 10% Surprise

Many key measures of cross-border economic and other business activity fall within or close to the 5% to 15% range – far below what much of the writing on internationalization suggests.



telephone calls = international revenues ÷ total global telecom service revenues; management research = percentage of management research published from 1996 to 2000 with a cross-border component; direct investment = foreign direct investment flows ÷ gross global fixed capital formation; private charity = percentage of U.S. private giving that has an international component; stock investment = percentage of U.S. investors' stock holdings that has an international component; trade (to GDP) = global exports ÷ global GDP. For more detail, go to hbr.org.

some CEOs we interviewed wished to remain anonymous. read our report and you'll understand why.

Let's start with what we can tell you. We conducted interviews with a broad cross section of CEOs – 765 to be exact. They are working in 20 different industries and 11 regions around the world.

And they spoke with an honesty usually reserved for the protected privacy of a boardroom. They revealed their plans, their motivations, and in some cases, even their weaknesses.

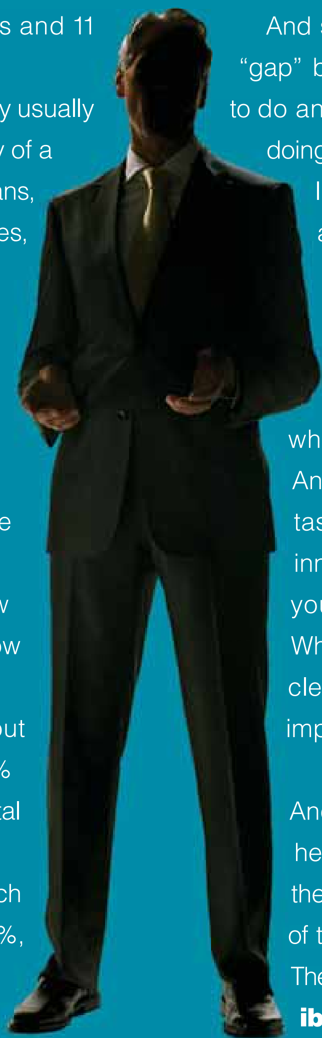
Said one CEO, "Since 70 percent of our business is based on a service that will no longer exist as we know it, we need to adapt our enterprise to survive."

Given that level of candor, some chose not to reveal their names.

While you don't need to know who they are, you do need to know what they said.

They talked quite openly about a two-year window, in which 65% of them expect to make fundamental changes to their businesses.

They spoke about devoting much of their innovation effort, a full 30%, to revamping the sacrosanct business model.

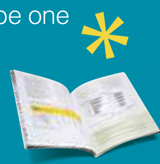


"We are at the critical point," admitted one CEO, "where we should transform our business model itself."

And some confessed, quite honestly, to a "gap" between the collaboration they'd like to do and the collaboration they're actually doing. Said one respondent, "It has been like Relationship 101 – we're terrible and we need to improve."

Other findings were equally surprising. On page 21, for example, you'll discover which department was conspicuously low on the list when it comes to idea generation. And you'll learn that most CEOs have tasked one person with bringing their innovation agenda to life. On page 29, you'll find out who that person is. Whichever page you turn to, one thing's clear. CEOs are placing an enormous importance on innovation.

To them, it's what will set them apart. And make them special. At IBM, we've helped businesses of all sizes innovate their way to that goal. Want to be one of them? Start by downloading The Global CEO Study 2006, at **ibm.com/special/ceo10**

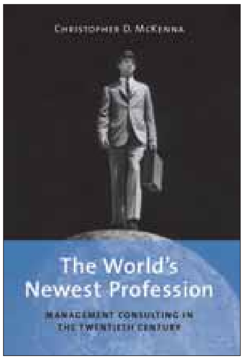


what makes you special? IBM

Reviews

The World's Newest Profession
Management Consulting in the Twentieth Century
Christopher D. McKenna
(Cambridge University Press, 2006)

Christopher D. McKenna thinks consulting needs to grow up. After a nearly century-long fight to be seen as professional, the industry seems willing to embrace the pleasures of professional status – healthy pay, intellectually challenging work, respectful relationships with clients – but not the hassles of accreditation, a code of ethics, or professional liability. Such trappings of adulthood may not be so critical when you're solving technical challenges like how to (literally) make a silk purse out of a sow's ear, which kept Arthur D. Little busy in 1921. But if you haven't developed an adult conscience by the time you start consulting on strategy, McKenna claims, before you know it you'll be manipulating financial statements and shredding the evidence.



McKenna's book lays out, in sometimes exhausting and repetitive but nonetheless convincing detail, the history of the business of consulting in the United States. The book is academic in tone,[1] a scholarly wander that begins in the 1880s, when the second industrial revolution created new opportunities for science-based businesses, and chemists, physicists, and more practical engineers took occasional consulting assignments with the era's emerging manufacturers. The business gained momentum in the 1930s when U.S. government regulators took actions to restrict the flow of collusive information among companies. Executives could no longer share best practices directly, so they turned to consultants as legal conduits of information. (In Japan and Germany, where companies were not so restricted, management consultants never achieved the same degree of influence as they did in the U.S.)

McKenna concludes with the explosion of consulting at the end of the twentieth century and the worldwide scandals in corporate governance that ushered in the twenty-first. He pins the Enron/Andersen collapse, among other debacles, on the consulting industry's lack of professional standards and executives' perception that their consultants and auditors would shield them from risk.

Hence the call to professionalize. Executives have always questioned the value of the consulting services they invest in; that they continue to use those services suggests that the perceived benefits offset the lingering doubts. This balance could easily shift the other way. Tom Watson wrote in his autobiography of a consultant, John Burns, who took the CEO job at a competitor less than three months after completing a project at IBM. McKenna leaves us with a question: How often after that abuse did Watson (and his peers, for that matter) avoid hiring consultants, or at least clip their wings? If the consulting firms themselves don't see fit to straighten up and fly right, maybe it's time for the CEOs who pay their fees to take a stand.

1. This reader, for one, found the profusion of footnotes a little distracting.

–M. Ellen Peebles

The Bourgeois Virtues: Ethics for an Age of Commerce
Deirdre N. McCloskey
(University of Chicago Press, July 2006)

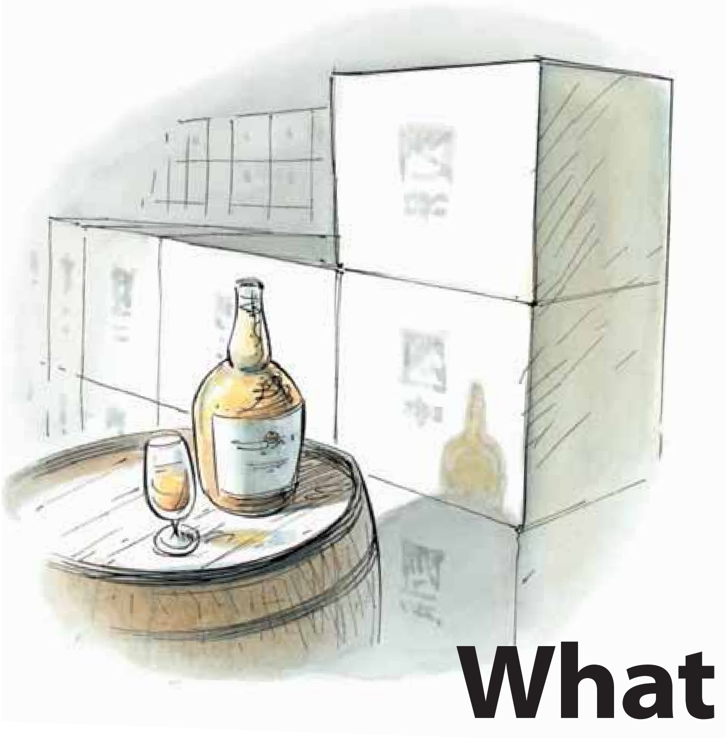
Even ardent supporters usually concede that capitalism has improved society only in material, not moral, ways. Not so, says McCloskey, a prominent economics historian, who engagingly synthesizes a variety of recent scholarship to build a broader case. Because they have always had a more egalitarian outlook than the aristocrats that previously dominated society, merchants and industrialists have actually been the leading force for ethical improvements such as the abolition of slavery. Capitalists' sins, the author suggests in this conversational opus, have come more from governmental privileges than from purely commercial acts.

Shopportunity! How to Be a Retail Revolutionary
Kate Newlin
(Collins, September 2006)

How much value does the shopping experience really provide? Newlin, a marketing consultant, insists that consumers seek social significance not just in the products themselves but in the environments in which they buy them. Stores with harsh, utilitarian designs and indifferent or nonexistent clerks can't offer the personal coaching and meaningful experiences that satisfy buyers' deeper desires. Readers who can get through a tedious paean to brands will discover a provocative and well-illustrated warning to price-obsessed department stores and other rivals to the discounters.

The Fable of the Keiretsu: Urban Legends of the Japanese Economy
Yoshiro Miwa and J. Mark Ramseyer
(University of Chicago Press, July 2006)

According to the conventional wisdom, keiretsu have long dominated Japan's industry and finance. These bank-centered corporate groups, the argument goes, promoted cooperative supply chains and "patient" investment of capital that gave the country a major competitive advantage. Now Miwa and Ramseyer, a Japanese economist and an American legal scholar, argue convincingly that these groups are an academic fiction.



What Serves the Customer Best?

by Paul F. Nunes and Woodruff W. Driggs

Glenmeadie is investing heavily in the front end of its business, enhancing its interactions with customers. But that's drawing resources away from the product innovation that might keep them happy in the long run.

Black-tied waiters circled with coconut shrimp and crab cakes while a few dozen guests – mainly men in their twenties and thirties – moved from station to station comparing notes on the Scotch whiskies they were sampling. Bob Littlefield beamed as he circulated through the crowd. But despite the appearance he'd given of taking regular sips, his glass still held the same four ounces poured for him an hour ago. It wasn't that he didn't like the taste; he loved it. It was his company's best-selling product. Tonight, however, he was on the job.

A division president wouldn't normally be playing host at such a small-scale customer event – Glenmeadie had four of these Tastemakers gatherings planned in each of 25 cities this year alone – but this one happened to coincide with a trip Bob was making to New York. Given that he had just joined the company three months earlier, it was a good opportunity to see his CMO's marketing approach up close and to take the pulse of a tier of customers he wouldn't ordinarily interact with. The guests were mostly bartenders from the city's upscale bars, with a few club owners and liquor distributors mixed in.

Graciously exiting a conversation that threatened to monopolize him, Bob moved toward a group congregated around the blind-tasting table. One of Glenmeadie's apprentice distillers was there helping guests appreciate the subtleties of different blends and single malts. Working alongside a buyer from a big local distributor, the lad seemed enthusiastic and knowledgeable, if a bit

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

DANIEL VASCONCELLOS

unpolished. Whatever schooling he'd had to get to this point in his career hadn't been enough to rid him of a pronounced Geordie accent. For a New York crowd, Bob supposed, that was part of the charm.

Some time after eight, as the jazz trio finished its final set and the last of Glenmeadie's guests filtered out of the room, Paula Laughlin appeared at Bob's side. She was the marketing director for North America, reporting to CMO Nevin Wallace. As the true force behind the event, she'd been attending to the details. It occurred to Bob that having the new president in attendance could only have added to her stress level.

"Well!" she sighed brightly. "I'd call that a success."

"I had a wonderful time," Bob assured her. "And I'm sure our guests did, too." He smiled benevolently. "But you must tell me what pleased you most about it. Did it meet your, er, goals in terms of marketing?" It was a casual question but also an honest one. It had occurred to Bob at various points throughout the evening how hard it would be to measure the ROI on this kind of expense.

Paula grimaced. "Well, to be honest, this one went over budget. But that's New York for you. I'm sure we can make it up in the other cities, so we'll still average $15,000 per event."

Bob instantly did the math in his head. Twenty-five cities times four events. A million and a half for the Tastemakers program, plus management time. Suddenly the moment seemed right to take a mouthful of the spirits he'd been hand warming all night. Then he excused himself, saying he wanted to thank the Newcastle kid for making the trip.

He found the apprentice tidying up, pulling the masks off the various bottles from the blind tasting. "Appreciate your coming all this way to help out," Bob said. Among the now revealed labels, he spotted Glenmeadie's most expensive offering and poured two glasses. He tilted his in the young man's direction. "And now you're off duty."

"Ta," the apprentice said hoarsely. He lifted his glass in return, smiling broadly. "It's a tough job, but somebody's gotta do it."

> A million and a half for the Tastemakers program, plus management time. Suddenly the moment seemed right to take a mouthful of the spirits he'd been hand warming all night.

High Proof

Back in Inverness the following week, Bob worked with his finance head, Ewan McCallum, on the presentation he would give to the board of Glenmeadie's parent company, Worldwide Spirits. Having already run a few small businesses for Worldwide, including a craft beer business in the States, he knew the drill well enough. But he also knew that this time would be different. Glenmeadie, a recently acquired "tuck in" brand, was a much larger concern, with roughly $100 million in sales on nearly 2 million nine-liter cases sold. Plus, it was international, with sales in more than 180 countries. Bob's performance in the next few years would be a key test of his ability to take on greater responsibilities at Worldwide Spirits.

It made sense to start by anticipating the questions the directors would have on the financials. Ewan figured they would zero in fast on the swollen marketing expenses. Bob knew that Nevin had been given quite a lot of latitude by the previous president, who'd hired him two years ago, but he wasn't sure exactly what was being spent.

"Start by painting the worst possible picture for me," Bob said. "What's the damage, as they say."

Ewan uncapped his pen and started with the bills coming due for the Tastemakers program, which were more or less what Bob had expected. On top of that, there had been an explosion of pilot initiatives aimed at making customers feel a more personal connection with the brand. "There's the Web site overhaul, including all the new interactive capabilities. And there's the software we're handing out – mostly for little stuff like gift card printing and label making, but it adds up. Then there's the new customer information phone service. Nevin insisted on a local call center to 'ensure the authenticity of the voice.' That means, despite what you might have heard, talk isn't cheap." Ewan looked up from his growing column of numbers.

Bob acknowledged the quip with a thin smile.

"We also need to add in the new loyalty card program," Ewan continued, "and the new event-based program, where we mail best wishes and coupons on birthdays and anniversaries. Then there's the ongoing cost of the visitors center and the quarterly newsletter mailing…"

He scribbled the total at the bottom, underscored it twice, and turned the pad around for Bob to see. "Accounts for over half our profits."

"And you think the board will have questions about that, do you?" Bob said. "Can't imagine why."

"Ah, but it isn't so catastrophic." Ewan raised a finger to make his point. "We've cut expenses in many other areas, especially overhead. And R&D. And you already know the really positive news – that sales have started to climb rather dramatically. Market research says it's mostly due to more repeat purchases, higher individual buyer consumption, and greater share of wallet. Whatever the cause, if the trend continues, we're at risk of outselling our production."

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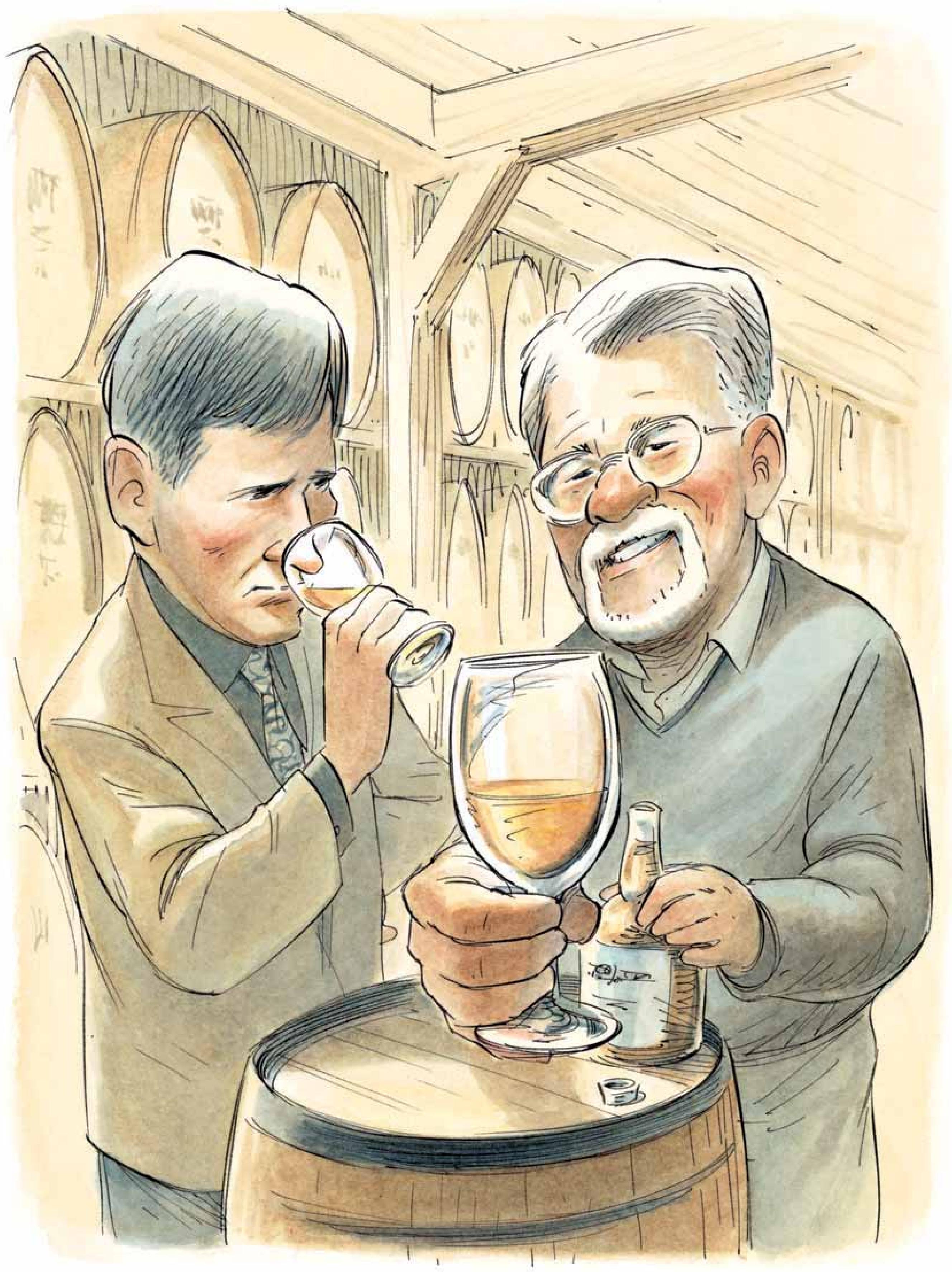

Bob knew this was a good problem to have. He could call on some of the other distillers to top off his supplies for blending purposes. And he could hold the line on prices at the wholesale level if there was strong pull from the retailers and on-premises sellers. The only real problem would be the single-batch and aged reserves, which would be harder to backfill, given their finite supply.

"So we can justify the marketing investment by showing the top-line growth," Ewan noted. "The question they'd be justified in asking, though, is this: Will all these customer-facing initiatives yield higher demand in the long term and make it stable enough that we can get the margins back up? Or have we just made demand less consistent and predictable?"

"Well put," Bob said. "But I know this crowd. They'll ask it in simpler terms, as in 'Sure, customers are drinking more now – but is it only because we're buying?' "

A Taste of History

Of all the ways Bob had devised to get up to speed in his first 100 days on the job, his favorite was the fortnightly tutorial he'd arranged to get from Ellis Cameron, Glenmeadie's master distiller. At 53, Ellis was at the top of his game, and a treasure of tacit knowledge. He was a rare combination of traditional craftsperson and modern production engineer and beyond that, a born storyteller. In the midst of a primer on the merits of limestone spring water, Bob was likely to get an even more valuable digression into company lore. It didn't hurt that their meetings took place in Glenmeadie Castle, home of the company's distillation and storerooms for nearly a century and a half.

Today's session marked a special occasion: Ellis's 25th anniversary with the company. In honor of it, he handed Bob two glasses. One, he said, was the first taste of the 25-year-old special reserve the company would release in a month: "The oldest batch around here I can claim to have had a hand in. Let's hope it was clean." The other was the equivalent product from Hanshaw, a much smaller business whose competing job offer Ellis had turned down back in 1981. Bob inhaled from one of the tumblers and concentrated. The mixture of phenolic and aldehydic notes – smells that only weeks ago he would have recognized simply as peaty and grassy – made a very pleasant bouquet. Ellis, already having sipped from both glasses, launched into an evenhanded dissection of their relative merits.

Soon enough, Bob was convinced that the Glenmeadie product was the superior one, but he also understood Ellis's explanation of how the new wood finishes he'd been experimenting with might have made it even better. By transferring the whiskey to sherry butts, Madeira drums, and port barrels before bottling, his group was achieving tastes with new depth and complexity. The conversation turned to Ellis's longtime dream of being able to do single-cask bottling at scale.

"Sure, customers are drinking more now – but is it only because we're buying?"

"I won't say it would be cheap," Ellis admitted. "It would take some new automation of the line. But it's actually possible now. Imagine it: Each cask separately bottled, and each bottle given a label that would detail all the relevant dates – when the whiskey was put down, tipped, bottled – as well as the number of the cask and the number of bottles that came from that particular cask. Each bottle would be a limited edition. Some would be collectible masterpieces."

Bob hated to put him off. "Let's revisit that subject in the next budget cycle," he said. "Sales are up, you know, thanks to Marketing's efforts. Now we just need to get costs back in line, and then we can think about new investments in production technology."

As soon as the words left his lips, Bob knew they would not have their intended effect. Instead, the reference to Marketing struck a nerve. "All this spending on so-called touch points," Ellis spat. "It's daft. Have we lost sight of the fact that we're a distiller? At the end of the day, customers only want us to make superior whiskey."

Ellis warmed to his subject rapidly. "Bob, you now have a hand in the casks that will be opened 25, 26, 27 years from now. Is the product still going to beat the competition and please the connoisseurs? We have a legacy to protect. And I need your help, because the time I can devote to the task is increasingly scarce. Do you know where I spent half the morning? Not overseeing production. I was in a studio taping video bits for the Web site. Before I leave tonight, I'm supposed to have personally participated in our online forum. If Marketing gets its way, I'll be spending my whole day in 'branded experiences.' They'll trot me out till I can't trot anymore – and then they'll chisel it on my gravestone: 'He Was an Engaging Customer Interface.' "

Bob had heard his tutor hold forth on this subject before – even using some of the same phrases. There was nothing to be done now but lean back and enjoy the show. It occurred to Bob that blowing off steam this way was how Ellis came by his gift of gab. He rehearsed. His favorite debates found him constantly reworking metaphors, experimenting with new grace notes, honing his delivery. It was a process not unlike distilling.

"Customer care is what you focus on when you can't compete on product superiority – and by Jove, we've not reached that point yet." Evidently, Ellis wasn't finished. "There's an old expression: Build a better mousetrap, and the world will beat a path to your door. Sayings like that become clichés because there's truth in 'em. Yet we seem to be forgetting these days that the customer has a basic need to be addressed. We've given up on redesigning his mousetrap and are trying to trap him instead!"

With that, the tirade ended. Bob, having weathered the storm, pressed his lips together and nodded sagely. "Ellis, my friend, I hear you." Then, gesturing to the other bottle on the table,

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he changed the subject. "What was it made you join Glenmeadie instead of Hanshaw, anyway?"

Ellis glanced at him, then sat down with a sigh. After a moment, he chose to respond. "To tell you the honest truth, the day I came in for my interviews, there was a lovely receptionist who showed me some kindness…" He paused and looked wistful.

There was no telling whether it was the honest truth or not, but Bob picked up the cue. "Well, there you have it, Ellis. Having the right interface sometimes is the key to competitiveness."

Ellis glanced at his boss slyly and continued. "That evening, she had occasion to usher me into the tun room. Totally off-limits. I couldn't believe my eyes – the setup defined the state of the art. I knew then I couldn't work elsewhere." He lifted his drink to the light, studying its color. "I daresay this has aged better than she."

Choose Your Poison

The superior quality of Glenmeadie's spirits was affirmed once again a few weeks later by the San Francisco World Spirits Competition. Four gold medals came the company's way, to be placed alongside the three won earlier in the season in the International Wine and Spirits Competition.

Bob and Nevin had attended the San Francisco event and were scheduled on the same flight out. They took Nevin's rental car to the airport, allowing plenty of time for the Bay Area traffic. As it turned out, the roads were clear, and the rental car return was unbelievably efficient. They found themselves on the monorail heading toward their terminal with two hours to spare.

They checked in at a kiosk and went through security. As the moving walkway took them toward their gate, Bob spotted a Stubbs, the ubiquitous American coffee chain. "I could use some caffeine," he said to Nevin. "Just as comfortable to sit here as at the gate."

Entering the café, Bob was glad for the aroma of espresso and for the decor that made Stubbs outlets nearly indistinguishable the world over. He stated his order in the way he'd become accustomed to back in Inverness: "Double shot enorme latte with a half shot of almond syrup." Bob was probably not the first person to have noticed that Stubbs was adhering to the rather downscale strategy of fast-food chains – fairly unexceptional product quality delivered with incredible consistency. But no one talked about that. Until a better option came along, wasn't it best to preserve the fiction that your hangout was cool? Customers were complicit in such things. Until the day they were not.

Nevin interrupted Bob's thoughts by nudging his arm with a magazine. "While we're celebrating awards," Nevin said, "I brought this along to show you. In our own small way, Marketing is getting some recognition, too."

The narrowness of trade journals was always amusing to Bob when he encountered them outside his field. This one was called *Corporate Events*. Without thinking, he blurted out his surprise. "There's an entire magazine about company shindigs?" Then he saw why Nevin had pulled it out of his briefcase. Featured as a medalist in the magazine's annual awards was Glenmeadie's Tastemakers program. The accompanying text explained its goals, success factors, and resource requirements.

"Congratulations on the peer recognition," Bob said as they sat down at a table. He paused a moment to compose his next thought. "At the same time, this helps me see the challenge you face. I didn't realize customer programs like ours were so plentiful that whole magazines would be devoted to them. Our successful approach has now been published for the benefit of all. I've often heard you say that the front office is the new basis for competitiveness, because product innovations are so easily matched. But here is our secret recipe in print. Maybe a customer-facing advantage isn't so hard to copy after all."

> "Have we lost sight of the fact that we're a distiller? At the end of the day, customers only want us to make superior whiskey."

One More Round

"Passengers for Flight 126 to New York, with continuing service to London – we are about to begin boarding through Gate 34."

Bob and Nevin wrapped up their cell phone calls and stood, anticipating the call for premier status frequent-fliers.

Minutes later, Bob had a glass of tomato juice and was fiddling with his iStream. Opting for random selection, he was treated to the opening strains of Dire Straits' "Sultans of Swing." He closed his eyes and enjoyed the twang of Mark Knopfler's guitar. He was even happier when the iStream shuffled to the classic New Order tune "Blue Monday." Talk about a 25-year special reserve. It wasn't till the device moved on to a hip-hop artist his son had recommended that Bob pulled the earbuds loose.

What a phenomenon, the iStream, Bob thought. The margins the manufacturer was earning on it were almost obscene, but people were happy to fork over their money. Was that because it was a better mousetrap – or a better customer trap? The question intrigued him enough that he pulled out a notepad to recall his last several interactions as a customer. The airline. Stubbs. The rental car company. The hotel. A purchase of some expensive chocolates. He made a list of questions he would apply to each. Was he satisfied with the experience? Was he loyal to the seller? Did it have a truly superior product? Was the service more pleasing than what he got elsewhere? And if so, was that because it was solicitous or simply efficient? Bob started jotting down his answers. With luck, a pattern would emerge, and he would know how to make his mark at Glenmeadie.

What should be the priority for Glenmeadie's innovation efforts? • Four commentators offer expert advice beginning on page 44.

David Herman (dave_herman@hartmann.com) *is the president of Lebanon, Tennessee–based Hartmann Incorporated, one of the oldest luggage and leather goods manufacturers in the United States. Hartmann is owned by Brown-Forman Corporation, a consumer products company known for Jack Daniel's, Southern Comfort, Fetzer wines, and other brands.*

As Bob Littlefield was sitting on the plane listening to Mark Knopfler's "Sultans of Swing," he would have heard the following lyrics: "Too much competition, too many other places / But not too many horns can make that sound."

It's a nice analogy for the business Bob is leading. The category offers consumers many options, but Glenmeadie's product is the one being singled out for gold medals. Not too many scotches can make that sound. Now Bob needs to decide how best to amplify it.

The right strategy will be a careful balance between front-end initiatives and product development. There's no question that innovation at the customer interface is important – even for a company whose brand is rooted in a heritage of product excellence. My own company, Hartmann Incorporated, has been around since 1877 producing fine luggage and leather goods for those who appreciate luxury. But today, our fastest growing and most profitable channel of distribution is Hartmann.com. It's also an incredible tool for communicating with loyal customers, who tell us they want superb service along with high-quality products.

Glenmeadie's business differs from Hartmann's in some important respects. Due to legal restrictions, Glenmeadie has much less opportunity to sell direct to consumers. Between that and the nature of the product, it's unlikely that quality of service is vital to the consumption experience. So Glenmeadie might allocate its marketing funds differently between building lifetime relationships with current customers and attracting new ones. (Every company should explicitly make that distinction.) I suspect Marketing could back off a bit on its efforts to cement relationships with current customers. How many times must they hear from the company in a single year? And is direct mail the most efficient vehicle? Likewise, while winning over local bartenders may be a good way to attract new customers, I doubt all 25 of the targeted cities are created equal. In general, marketing's "explosion of pilot initiatives" and "swollen" expense line signal a lack of focus, conviction, and discipline.

How many times must they hear from the company in a single year?

Master distiller Ellis Cameron has come up with what sounds like the best way to strengthen the personal relationship Glenmeadie's most loyal consumers have with the product. The single-cask bottling he envisions would deliver a customized product to the company's preferred upscale consumer. This type of offering would command higher margins, provide consumers with more individual choices, and allow them to trade up. Glenmeadie could also sell such limited edition products through appropriate third parties. There, it might take a page from Hartmann's book. We have found much success in offering our key retailer partners – like Bloomingdale's in the United States, Harrods in the United Kingdom, and Mitsukoshi in Japan – their own exclusive patterns and pieces, helping them differentiate themselves in a competitive marketplace. Glenmeadie might start with upscale steak house chains, hotel chains, or casinos and later extend the offer to private clubs, individual restaurants, and even end consumers. Ellis implied that creating the product would entail a large investment in modern technology, and the nature of the supply chain is such that the results wouldn't reach the marketplace for many years. For Bob, persuading his board and the skeptics on his team that the investment is needed will require real finesse – and that will probably be the most important test of his capabilities.

To secure the success of the product innovations, Marketing must ensure that Glenmeadie's core brand remains strong. Whatever differences in taste result from Ellis's port barrels, sherry butts, and so forth, any new products need to draft off of that core brand. In a way, the idea is like Mark Knopfler himself. Twenty-seven years after "Sultans of Swing" hit the pop charts, he's still at it – only now on the Americana charts, paired with country music legend Emmylou Harris. Somehow, his guitar still has that sound.

WENDY WRAY


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Glenmeadie's new initiatives – the Tastemakers program, the Web site enhancements, the loyalty cards – are susceptible to fine-tuning. But if the goal was to build more valuable customer relationships, then the initiatives have proven an unalloyed success. Bob may feel there's a lot of activity and expense to defend as he contemplates his presentation to the board. But the real question he must address is this: Is the company seeing enough of a sales lift to justify the several million extra marketing dollars it's spending on front-office programs? Though we don't have many hard numbers to work with, we know Glenmeadie is a business of scale, and we know that increased demand may soon outstrip supply. Since no rational company would fail to forecast inventory, we can assume that the marketing pushes have proven surprisingly effective – which, in turn, indicates a healthy ROI on the new marketing activities.

Better yet, despite reported pressure on R&D budgets, the front office success does not seem to have come at the expense of product innovation. Of course, Ellis doesn't see it that way. He works in a fabulous castle and pushes the envelope daily on distilling techniques, yet he thinks the company has lost track of its priorities. If I were teaching this case, I'd enjoy the moment when the paradox of Ellis's argument dawned on the class: For his innovations to be successful in the marketplace, there must be an ever larger installed base of consumers capable of appreciating the artisanship involved. Without the front office's efforts to expand the market of aficionados by educating consumers on why Ellis's offering is better than the hundreds of other single-malt options available, his "better mousetrap" would go nowhere. Ellis should be thankful that the company isn't shamelessly hyping itself into a hot consumer brand; it is smart enough to address both end consumers and the trade with a broad-based program to expand the market of certifiable connoisseurs.

Bob's problem isn't that he has difficult trade-offs to make. The new approach is working. It's the organization that's not. Right now, his people live in separate worlds and care about different things. Ellis resents what Marketing is doing (and spending), while the marketing people probably see Ellis as a self-important diva who just doesn't get what matters to the business. As a result, the questions around resource allocation are political, not practical.

What the two groups have in common is the demand side, the customer's point of view. Ellis's notion of doing single-cask bottling presents Bob with an ideal opportunity to make peace. Start with the fact that Ellis's idea is about as front end as a production innovation can get. Numbering barrels and packaging their contents in limited-edition batches represents more of a go-to-market plan than a production strategy. Moreover, what Ellis is really talking about is turning the subtle distinctions of what industry insiders and experts care about into something consumer markets can value – and that kind of sleight of hand has reinvented industries in the past, especially in luxury goods. Consider the impact on the high-end wristwatch business when men started paying close attention to mechanical movements and perpetual calendars, inspiring many to build collections of timepieces. Consider what's happened in wine, what's happened in cigars – and what's already happened in Scotch whisky, where the elite market long ago moved on from pricey blends like Chivas and Johnnie Walker to single malts. Ellis's proposal could push the trend to the nth degree.

Bob should get all his stakeholders to think together about how to capitalize on this potentially breakthrough marketing idea. Once he's set the organization's sights on turning the single-malt scotch industry on its head, he can stop worrying so much about investments and start thinking more about returns.

Bob's problem isn't that he has difficult trade-offs to make. The new approach is working. It's the organization that's not.

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Bartenders in discotheques are great for talking up new vodka drinks–but is that where someone interested in scotch goes for guidance?

Glenmeadie's marketing initiatives strike me as great for launching a vodka brand, but not so appropriate for fine whiskey. For one thing, Glenmeadie's product is in limited supply. A vodka maker has a short production cycle and no end of potatoes to work with, so its emphasis can simply be on drumming up demand. Nevin Wallace and his team, however, have scarcity to their advantage, and they should be more focused on leveraging it into higher prices. Scotch is a luxury good–and no luxury good has ever survived ubiquity. If Glenmeadie's greatly expanded marketing budget is evidence of mass-market ambitions, the company is risking real damage to the brand's allure. I suspect, too, that single malts appeal to a different type of drinker than vodka does. Scotch is associated with quiet conversation and is meant to be savored. It's no surprise that Bob enjoys his tasting session at Glenmeadie Castle so well; the history and romance wrapped around the product captures the very essence of the brand. What's more, a different type of consumer probably means different key influencers. Bartenders in discotheques are great for talking up new vodka drinks–but is that where someone interested in scotch goes for guidance?

That there could be so much variation in the market realities of two types of liquor is not so surprising. VF's various units all produce apparel and are all focused on building global lifestyle brands, yet we go about marketing those brands in very different ways. For the North Face brand, we target the true enthusiasts – the action-sports athletes who care most about technical innovation–knowing that their choices deeply influence aspirational users. Rather than blasting the airwaves, we connect with that core group and how it interacts with the product. An example is our sponsorship of ultramarathoner Dean Karnazes, who set out to run 50 marathons in 50 states in 50 consecutive days, to introduce a new North Face shoe. In our jeanswear business, the emphasis is on increasing our share of voice in traditional media. Lee and Wrangler still have to innovate around fit and style, but the marketing for both those brands aims to form an emotional bond. Yet another model makes sense for Vans, a casual shoe preferred by skateboarders. Here, we have a successful promotion in the Vans Warped Tour, which links the brand to the music and artists that the community identifies with.

The right marketing approach for a given brand is never obvious. It requires going out and living with customers for a while, seeing how they get their information, and understanding the typical behavior path–from first awareness through to loyal purchasing. This is what I don't see any evidence of at Glenmeadie. Who's the category enthusiast for scotch? Who's the brand enthusiast for Glenmeadie? Who are the top 20% of customers who account for 80% of profits? How do those people become familiar with a scotch, and what makes them place it in their considered set? (That's the step in the buying process Glenmeadie should be focusing on, more so than on promoting awareness and trial.) If the company's marketers understood consumers' behavior at a very deep level, they could design a much more downscaled and efficient program. Rather than getting just anyone to try the product, Glenmeadie would get the right people to try it and to switch some part of their consumption.

There doesn't need to be a trade-off between the front and back offices in this story. Customer loyalty comes from the whole package, and Marketing's job, in any company, is not simply to generate demand but to build brand strength and profitability over the long haul. If Glenmeadie's marketers do their job well, there will be plenty of margin to reinvest in the product that is central to the total branded experience it offers.

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The good news is that Glenmeadie's president is deciding how – not whether – to invest in innovation. That innovation of some kind is required is not in doubt. Certainly, we recognize the importance of investing in innovation at Dunkin' Brands. If you think about it, we are in a very perishable business. The coffee sale or other engagement with a consumer that we don't capture today can never be captured again. So it's a constant quest to stay on consumers' radar screens. If we aren't somehow in their faces on a weekly basis with something that can grab their attention, they will drift.

The problem at Glenmeadie is that everyone is seeing front- and back-office innovation as an either-or proposition. This is all too common in organizations, and it gets especially divisive when the argument escalates to the senior executive level. I think I recall hearing some of the very phrases in this story's dialogue back when Dunkin' Brands was owned by Allied Domecq and the leadership of the various brands would assemble for annual meetings. One gentleman in particular stands out in my memory. He was a great winemaker, devoted to the stewardship of his casks and his fields, but it was always a struggle for him to understand that the investments had to be balanced–that to stay in the business, we also had to have people *buying* wine. The debate is hardly unique to wine and spirits makers.

This is partly why Dunkin' Brands made the unusual move four years ago of pulling together our potentially competitive innovation factions and housing them in one organization, which is the group I lead. Now, even though our culinary team and our operations specialists remain distinct, they collaborate from the beginning on any change. When one of our culinary R&D folks creates a new product, the operating specialists are right there, figuring out ways to deliver it efficiently. Our supply chain organization is right there, too, anticipating costs and ways to reduce them. Our value proposition to the customer – fresh, fast, and affordable – has become a mantra that helps everyone converge on a clear vision.

Putting these groups under one umbrella allows us to achieve the right balance of the three different forms innovation takes in our business: the ambiance of the stores, the quality of customer interactions, and the goods we sell. As we proceed down those three tracks simultaneously, we introduce new products very frequently while taking a longer-cycle approach to the operating system and store environment. All three tracks come together in a major effort like our new prototypical store, which we call 2015. The aim in this initiative has been to ensure that the Dunkin' Donuts concept is as relevant to consumers in that year as it is today.

I'm not claiming that no one ever chafes at the compromises we make with one another along the way. Our head of R&D for donuts is every bit as passionate about his craft as Ellis Cameron and has just as little time for business model innovations that don't center on his product. But in an organization devoted to change, it's great to have his kind of talent and dedication in the room, providing a balance to some of the more starry-eyed notions and keeping us headed toward true north. Most important, we know the debate is going on at the right level, among the people who actually know what the implications will be. With all due respect to senior managers like Bob Littlefield and his CFO, when organizational problems get worked through below their level, the solutions are usually better.

It's a constant quest to stay on consumers' radar screens. If we aren't somehow in their faces on a weekly basis, they will drift.

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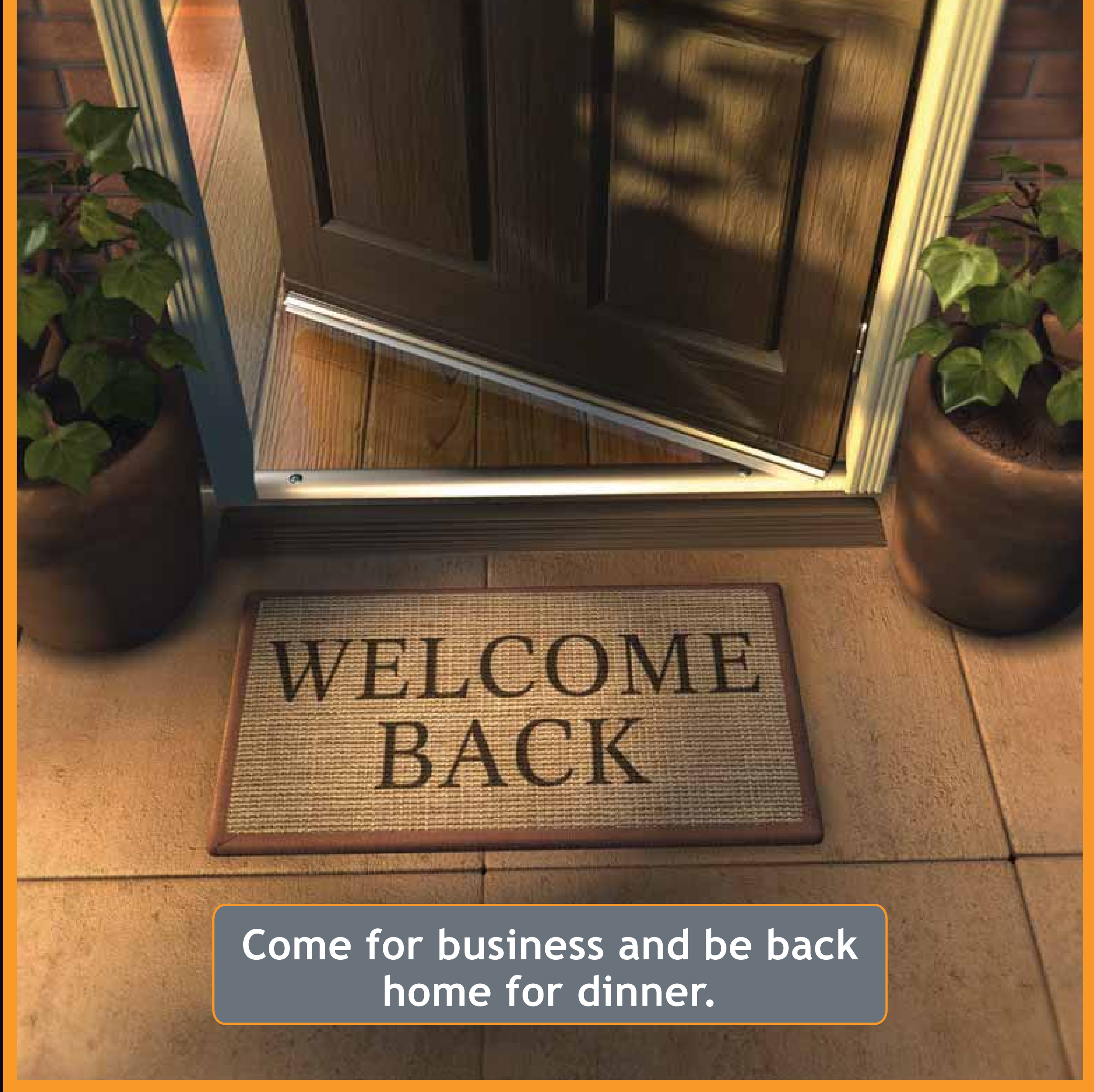
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Sleep Deficit: The Performance Killer

A Conversation with Harvard Medical School Professor Charles A. Czeisler

Sleep is a stranger to many managers. Research by leading scientists shows just how dangerous that problem is.

AT 12:30 AM on June 10, 2002, Israel Lane Joubert and his family of seven set out for a long drive home following a family reunion in Beaumont, Texas. Joubert, who had hoped to reach home in faraway Fort Worth in time to get to work by 8 AM, fell asleep at the wheel, plowing the family's Chevy Suburban into the rear of a parked 18-wheeler. He survived, but his wife and five of his six children were killed.

The Joubert tragedy underscores a problem of epidemic proportions among workers who get too little sleep. In the past five years, driver fatigue has accounted for more than 1.35 million automobile accidents in the United States alone, according to the National Highway Traffic Safety Administration. The general effect of sleep deprivation on cognitive performance is well-known: Stay awake longer than 18 consecutive hours, and your reaction speed, short-term and long-term memory, ability to focus, decision-making capacity, math processing, cognitive speed, and spatial orientation all start to suffer. Cut sleep back to five or six hours a night for several days in a row, and the accumulated sleep deficit magnifies these negative effects. (Sleep deprivation is implicated in all kinds of physical maladies, too, from high blood pressure to obesity.)

Nevertheless, frenzied corporate cultures still confuse sleeplessness with vitality and high performance. An ambitious manager logs 80-hour work weeks, surviving on five or six hours of sleep a night and eight cups of coffee (the world's second-most widely sold commodity, after oil) a day. A Wall Street trader goes to bed at 11 or midnight and wakes to his BlackBerry buzz at 2:30 AM to track opening activity on the DAX. A road warrior lives out of a suitcase while traveling to Tokyo, St. Louis, Miami, and Zurich, conducting business in a cloud of caffeinated jet lag. A negotiator takes a red-eye flight, hops into a rental car, and zooms through an unfamiliar city to make a delicate M&A meeting at 8 in the morning.

People like this put themselves, their teams, their companies, and the general public in serious jeopardy, says Dr. Charles A. Czeisler, the Baldino Professor of Sleep Medicine at Harvard Medical School.[1] To him, encouraging a culture of sleepless machismo is worse than nonsensical; it is downright dangerous, and the antithesis of intelligent management. He notes that while corporations have all kinds of policies designed to prevent employee endangerment – rules against workplace smoking, drinking, drugs, sexual harassment, and so on – they sometimes push employees to the brink of self-destruction. Being "on" pretty much around the clock induces a level of impairment every bit as risky as intoxication.

As one of the world's leading authorities on human sleep cycles and the biology of sleep and wakefulness, Dr. Czeisler understands the physiological bases of the sleep imperative better than almost anyone. His message to corporate leaders is simple: If you want to raise performance – both your own and your organization's – you need to pay attention to this fundamental biological issue. In this edited interview with senior editor Bronwyn Fryer, Czeisler observes that top executives now have a critical responsibility to take sleeplessness seriously.

Putting yourself or others at risk while driving or working at an impaired level is bad enough; expecting your employees to do the same is just irresponsible.

What does the most recent research tell us about the physiology of sleep and cognitive performance?

Four major sleep-related factors affect our cognitive performance. The kinds of work and travel schedules required of business executives today pose a severe challenge to their ability to function well, given each of these factors.

The first has to do with the homeostatic drive for sleep at night, determined largely by the number of consecutive hours that we've been awake. Throughout the waking day, human beings build up a stronger and stronger drive for sleep. Most of us think we're in control of sleep – that we choose when to go to sleep and when to wake up. The fact is that when we are drowsy, the brain can seize control involuntarily. When the homeostatic pressure to sleep becomes high enough, a couple thousand neurons in the brain's "sleep switch" ignite, as discovered by Dr. Clif Saper at Harvard Medical School. Once that happens, sleep seizes the brain like a pilot grabbing the controls. If you're behind the wheel of a car at the time, it takes just three or four seconds to be off the road.

The second major factor that determines our ability to sustain attention and maintain peak cognitive performance has to do with the total amount of sleep you manage to get over several days. If you get at least eight hours of sleep a night, your level of alertness should remain stable throughout the day, but if you have a sleep disorder or get less than that for several days, you start building a sleep deficit that makes it more difficult for the brain to function. Executives I've observed tend to burn the candle at both ends, with 7 AM breakfast meetings and dinners that run late, for days and days. Most people can't get to sleep without some wind-down time, even if they are very tired, so these executives may not doze off until 2 in the morning. If they average four hours of sleep a night for four or five days, they develop the same level of cognitive impairment as if they'd been awake for 24 hours – equivalent to legal drunkenness. Within ten days, the level of impairment is the same as you'd have going 48 hours without sleep. This greatly lengthens reaction time, impedes judgment, and interferes with problem solving. In such a state of sleep deprivation, a single beer can have the same impact on our ability to sustain performance as a whole six-pack can have on someone who's well rested.

The third factor has to do with circadian phase – the time of day in the human body that says "it's midnight" or "it's dawn." A neurological timing device called the "circadian pacemaker" works alongside but, paradoxically, in opposition to the homeostatic drive for sleep. This circadian pacemaker sends out its strongest drive for sleep just before we habitually wake up, and its strongest drive for waking one to three hours before we usually go to bed, just when the homeostatic drive for sleep is peaking. We don't know why it's set up this way, but we can speculate that it has to do with the fact that, unlike other animals, we don't take frequent catnaps throughout the day. The circadian pacemaker may help us to focus on that big project by enabling us to stay awake throughout the day in one long interval and by allowing us to consolidate sleep into one long interval at night.

In the midafternoon, when we've already built up substantial homeostatic sleep drive, the circadian system has not yet come to the rescue. That's typically the time when people are tempted to take a nap or head for the closest Starbucks or soda machine. The caffeine in the coffee temporarily blocks receptors in the brain that regulate sleep drive. Thereafter, the circadian pacemaker sends out a stronger and stronger drive for waking as the day progresses. Provided you're keeping a regular schedule, the rise in the sleep-facilitating hormone melatonin will then quiet the circadian pacemaker one to two hours before your habitual bedtime, enabling the homeostatic sleep drive to take over and allow you to get to sleep. As the homeostatic drive dissipates midway through the sleep episode, the circadian drive for sleep increases toward morning, maintaining our ability to obtain a full night of sleep. After our usual wake time, the levels of melatonin begin to decline. Normally, the two mutually opposing processes work well together, sustaining alertness throughout the day and promoting a solid night of sleep.

The fourth factor affecting performance has to do with what's called "sleep inertia," the grogginess most people experience when they first wake up. Just like a car engine, the brain needs time to "warm up" when you awaken. The part of your brain responsible for memory consolidation doesn't function well for five to 20 minutes after you wake up and doesn't reach its peak efficiency for a couple of hours. But if you sleep on the airplane and the flight attendant wakes you up suddenly upon landing, you may find yourself at the customs station before you realize you've left your laptop and your passport behind. There is a transitional period between the time you wake up and the time your brain becomes fully functional. This is why you never want to make an important decision as soon as you are suddenly awakened – ask any nurse who's had to awaken a physician at night about a patient.

Most top executives are over 40. Isn't it true that sleeping also becomes more difficult with age?

Yes, that's true. When we're past the age of 40, sleep is much more fragmented than when we're younger. We are more easily awakened by disturbances such as noise from the external environment and from our own increasing aches and pains. Another thing that increases with age is the risk of sleep disorders such as restless legs syndrome, insomnia, and sleep apnea – the cessation of breathing during sleep, which can occur when the airway collapses many times per hour and shuts off the flow of oxygen to the heart and brain, leading to many brief awakenings.

Many people gain weight as they age, too. Interestingly, chronic sleep restriction increases levels of appetite and stress hormones; it also reduces one's ability to metabolize glucose and increases the production of the hormone ghrelin, which makes people crave carbohydrates and sugars, so they get heavier, which in turn raises the risk of sleep apnea, creating a vicious cycle. Some researchers speculate that the epidemic of obesity in the U.S. and elsewhere may be related to chronic sleep loss. Moreover, sleep-disordered breathing increases the risk of high blood pressure and heart disease due to the strain of starving the heart of oxygen many times per hour throughout the night.

As we age, the circadian window during which we maintain consolidated sleep also narrows. That's why airline travel across time zones can be so brutal as we get older. Attempting to sleep at an adverse circadian phase – that is, during our biological daytime – becomes much more difficult. Thus, if you take a 7 PM flight from New York to London, you typically land about midnight in your home time zone, when the homeostatic drive for sleep is very strong, but the local time is 5 AM. Exposure to daylight – the principal circadian synchronizer – at this time shifts you toward Hawaiian time rather than toward London time. In this circumstance, the worst possible thing you can do is rent a car and drive to a meeting where you have to impress people with your mental acuity at the equivalent of 3 or 4 in the morning. You might not even make the meeting, because you very easily could wrap your car around a tree. Fourteen or 15 hours later, if you're trying to go to bed at 11 PM in the local time zone, you'll have a more difficult time maintaining a consolidated night's sleep.

A company's sleep policy should not permit anyone, under any circumstances, to take an overnight flight and then drive to a business meeting somewhere – period.

So sleep deprivation, in your opinion, is a far more serious issue than most executives think it is.

Yes, indeed. Putting yourself or others at risk while driving or working at an impaired level is bad enough; expecting your employees to do the same is just irresponsible. It amazes me that contemporary work and social culture glorifies sleeplessness in the way we once glorified people who could hold their liquor. We now know that 24 hours without sleep or a week of sleeping four or five hours a night induces an impairment equivalent to a blood alcohol level of .1%. We would never say, "This person is a great worker! He's drunk all the time!" yet we continue to celebrate people who sacrifice sleep. The analogy to drunkenness is real because, like a drunk, a person who is sleep deprived has no idea how functionally impaired he or she truly is. Moreover, their efficiency at work will suffer substantially, contributing to the phenomenon of "presenteeism," which, as HBR has noted, exacts a large economic toll on business. [See Paul Hemp's article "Presenteeism: At Work–But Out of It," HBR October 2004.]

Sleep deprivation is not just an individual health hazard; it's a public one. Consider the risk of occupational injury and driver fatigue. In a study our research team conducted of hospital interns who had been scheduled to work for at least 24 consecutive hours, we found that their odds of stabbing themselves with a needle or scalpel increased 61%, their risk of crashing a motor vehicle increased 168%, and their risk of a near miss increased 460%. In the U.S., drowsy drivers are responsible for a fifth of all motor vehicle accidents and some 8,000 deaths annually. It is estimated that 80,000 drivers fall asleep at the wheel every day, 10% of them run off the road, and every two minutes, one of them crashes. Countless innocent people are hurt. There's now a vehicular homicide law in New Jersey (and some pending in other states) that includes driving without sleep for more than 24 hours in its definition of recklessness. There's a man in Florida who's serving a 15-year prison term for vehicular homicide – he'd been awake for 30-some hours when he crashed his company's truck into a group of cars waiting for a light to change, killing three people. I would not want to be the CEO of the company bearing responsibility for those preventable deaths.

Sleep deprivation among employees poses other kinds of risks to companies as well. With too little sleep, people do things that no CEO in his or her right mind would allow. All over the world, people are running heavy and dangerous machinery or guarding secure sites and buildings while they're exhausted. Otherwise intelligent, well-mannered managers do all kinds of things they'd never do if they were rested – they may get angry at employees, make unsound decisions that affect the future of their companies, and give muddled presentations before their colleagues, customers, the press, or shareholders.

What should companies be doing to address the sleep problem?

People in executive positions should set behavioral expectations and develop corporate sleep policies, just as they already have concerning behaviors like smoking or sexual harassment. It's important to have a policy limiting scheduled work – ideally to no more than 12 hours a day, and exceptionally to no more than 16 consecutive hours. At least 11 consecutive hours of rest should be provided every 24 hours. Furthermore, employees should not be scheduled to work more than 60 hours a week and not be permitted to work more than 80 hours a week. When working at night or on extended shifts, employees should not be scheduled to work more than four or five consecutive days, and certainly no more than six consecutive days. People need at least one day off a week, and ideally two in a row, in order to avoid building up a sleep deficit.

Now, managers will often rationalize overscheduling employees. I hear them say that if their employees aren't working, they will be out partying and not sleeping anyway. That may be true for some irresponsible individuals, but it doesn't justify scheduling employees to work a hundred hours a week so that they can't possibly get an adequate amount of sleep. Of course, some circumstances may arise in which you need someone to remain at work for more than 16 consecutive hours. The night security guard, for example, can't just walk off the job if his replacement isn't there, so you will need to have a provision for exceptional circumstances, such as offering transportation home for a sleep-deprived worker.

Companies also need executive policies. For example, I would advise executives to avoid taking red-eye flights, which severely disrupt sleep. If someone must travel overnight internationally, the policy should allow the executive to take at least a day to adapt to the sleep deprivation associated with the flight and the new time zone before driving or conducting business. Such a policy requires some good schedule planning, but the time spent making the adjustments will be worth it, for the traveler will be more functional before going into that important meeting. And the sleep policy should not permit anyone, under any circumstances, to take an overnight flight and then drive to a business meeting somewhere – period. He or she should at least be provided a taxi, car service, or shuttle.

Companies can do other things to promote healthy sleep practices among employees. Educational programs about sleep, health, and safety should be mandatory. Employees should learn to set aside an adequate amount of time for sleep each night and to keep their bedrooms dark and quiet and free of all electronic devices – televisions, BlackBerries, and so on. They should learn about the ways alcohol and caffeine interfere with sleep. When someone is sleep deprived, drinking alcohol only makes things worse, further eroding performance and increasing the propensity to fall asleep while also interfering with the ability to stay asleep. Additionally, companies should provide annual screening for sleep disorders in order to identify those who might be at risk. For example, this past year our team launched a Web-based screening survey that any law enforcement officer in the U.S. can take to help identify whether he or she is suffering from sleep apnea, restless legs syndrome, narcolepsy, or other sleep disorders. Those whose answers place them at high risk are referred for evaluation and treatment by a specialist accredited by the American Academy of Sleep Medicine. [Accredited sleep centers may be found at www.sleepcenters.org.]

Finally, I would recommend that supervisors undergo training in sleep and fatigue management and that they promote good sleep behavior. People should learn to treat sleep as a serious matter. Both the company and the employees bear a shared responsibility to ensure that everyone comes to work well rested.

This corporate sleep policy of yours sounds a little draconian, if not impossible, given people's crazy schedules.

I don't think it's draconian at all. Business travelers expect that their pilots won't drink before flying an airplane, and all of us expect that no driver on the highway will have a blood alcohol level above the legal limit. Many executives already realize that the immediate effect of sleep loss on individuals and on overall corporate performance is just as important. A good sleep policy is smart business strategy. People think they're saving time and being more productive by not sleeping, but in fact they are cutting their productivity drastically. Someone who has adequate sleep doesn't nod off in an important meeting with a customer. She can pay attention to her task for longer periods of time and bring her whole intelligence and creativity to bear on the project at hand.

What do you think about the use of drugs that help people fall asleep or that shut off the urge to sleep?
These agents should be used only after a thorough evaluation of the causes of insomnia or excessive daytime sleepiness. Patients too often think there's a silver bullet for a problem like insomnia, and doctors too easily prescribe pills as part of a knee-jerk reaction to patient requests during the final minutes of an office visit. The causes of insomnia are subtle and need to be carefully investigated. These can be from too much caffeine, an irregular schedule, anxiety or

What's New in Sleep?

Sleep science is advancing on a number of frontiers that, over time, may cause us to rethink everything from our personal habits to public policy. Here's a short sampling of these new developments.

Sleep is power. Your mother was right – to perform at your best, you need sleep. Discoveries about sleep cycles have given researchers new insight into the specific roles sleep plays in overall health and performance. For example, there is growing evidence that sleep aids in immune function, memory consolidation, learning, and organ function. "Some researchers now think sleep may be the missing link when it comes to overall health, safety, and productivity," says Darrel Drobnich, the senior director of government and transportation affairs for the National Sleep Foundation. One new field of study is looking at a specific correlation between sleep and productivity, and the benefits of what sleep researchers call a "power nap" – a 20-minute period of sleep in the afternoon that heads off problems associated with cumulative sleep deficit.

Move over, Ambien. Ambien, the sleep aid from drugmaker Sanofi-Aventis, is now de rigueur for the sleepless, ringing up $1.4 billion annually in U.S. sales alone. While Ambien has fewer side effects than most over-the-counter sleep aids, it's still a blunt instrument, neurophysiologically speaking. "All of the current products on the market, including Ambien, take a sledgehammer to specific receptors in the brain," says Dr. Robert McCarley, the head of psychiatry at Boston VA Medical Center and a professor of psychiatry at Harvard Medical School. "They have several negative side effects, ranging from disassociated states of consciousness to potential addiction. They also tend to lose their effectiveness over time." Researchers hope a new family of sleep-inducing drugs will function closer to the body's natural sleep mechanisms and so avoid problems associated with sedatives like Ambien. One such new drug – Rozerem, from Japanese drug giant Takeda – targets melatonin receptors in the brain. As researchers learn more about the body's internal sleep mechanisms, McCarley believes, sleep aids will inevitably improve.

On the other side of the equation, the pharmaceutical company Cephalon is now marketing modafinil, a drug that helps people function well on very little sleep without suffering the ill effects of common stimulants. Sold under the commercial trade name Provigil in the U.S., modafinil was originally prescribed to treat narcolepsy; it's now used to promote wakefulness among those who can't afford to go to sleep (such as field soldiers in war zones). Studies have shown that subjects taking modafinil are able to stay alert with only eight hours of sleep during an 88-hour period. While modafinil sounds like a dream drug, no one yet knows what effects may result from more than occasional use.

Car drowse alarms. By the end of the decade, automakers will offer cars outfitted with devices designed to keep drowsy drivers from falling asleep at the wheel. Some may use cameras to scan drivers' eyes for droopiness, or to sense when people are loosening their grip on the steering wheel, and then sound an alarm. In 2005, Ford and Volvo announced that they were working on a system called Driver Alert, consisting of a camera that measures the distance between the vehicle and the markings on the surface of the road. If the driver starts to swerve, an alarm goes off and a text warning appears on the dashboard. Another approach under consideration by the U.S. National Highway Traffic Safety Administration is the development of "intelligent" highways equipped with specialized sensors that continuously track vehicle trajectory and speed.

Tomorrow's workforce needs sleep now. Businesses need an educated workforce; ironically, school is interfering. The current high school schedule in the U.S., which typically begins around 7:20 AM, threatens the neurological development and health of adolescents, whose homeostatic drive operates differently from adults'. Most teens experience a delayed sleep phase, in which melatonin is released around 11 PM – an hour later than in most adults. Students who finally go to sleep by midnight and wake at 6 experience a chronic sleep deficit, which disrupts their ability to learn and puts them and you at risk on the roads. In the U.S., researchers and sleep advocates are now working closely with school districts, communities, and educators to change school start times so that students can get more sleep.

–BRONWYN FRYER

depression, physical problems such as arthritis, use of other medications, and so on – and only a careful evaluation by a doctor experienced in sleep medicine can uncover the causes. I once saw a professor who complained of difficulty sleeping at night, and only after taking a careful history did we find that he was drinking 20 cups of coffee a day. He didn't even realize he was drinking that much and didn't think about the fact that so much caffeine, which has a six- to nine-hour half-life, would interfere with his ability to sleep. Prescribing a sleeping pill for his insomnia without identifying the underlying cause would have been a mistake.

There are non-pharmacological treatments for insomnia that seem very promising, by the way. Cognitive behavioral therapy, or CBT, helps people recognize and change thoughts and behaviors that might be keeping them awake at night. A researcher named Dr. Gregg Jacobs at Harvard Medical School has reported that CBT works better over both the short and the long term than sleeping pills do.

Sometimes executives simply have to function without much sleep. What are some strategies they can use to get by until they can go to bed?

Though there is no known substitute for sleep, there are a few strategies you can use to help sustain performance temporarily until you can get a good night's sleep. Obviously, executives can drink caffeine, which is the most widely used wake-promoting therapeutic in the world. Naps can be very effective at restoring performance, and if they are brief – less than a half hour – they will induce less grogginess upon awakening. Being in a novel or engaging circumstance will also help you stay alert. Exercise, standing in an upright position, and exposure to bright light are all very helpful. Human beings are amazingly sensitive to light. In fact, the color of light may also be important. Exposure to shorter wavelength blue light is particularly effective in suppressing melatonin production, thereby allowing us to stay awake during our biological night. Photon for photon, looking up at the blue sky, for example, is more effective in both resetting our biological clock and enhancing our alertness than looking down at the green grass.

While all these things can help an executive function in an emergency, I must reiterate that he or she should still not drive when sleep deprived, even if a cup of coffee or a walk on a sunny day seems to help for a little while.

Do *you* get enough sleep?

Like everyone else, I try to, but I don't always achieve it.

1. Dr. Czeisler is the incumbent of an endowed professorship donated to Harvard by Cephalon and consults for a number of companies, including Actelion, Cephalon, Coca-Cola, Hypnion, Pfizer, Respironics, Sanofi-Aventis, Takeda, and Vanda.

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To order, see page 151.

Companies in emerging markets must choose among three kinds of strategies to compete successfully, both at home and abroad.

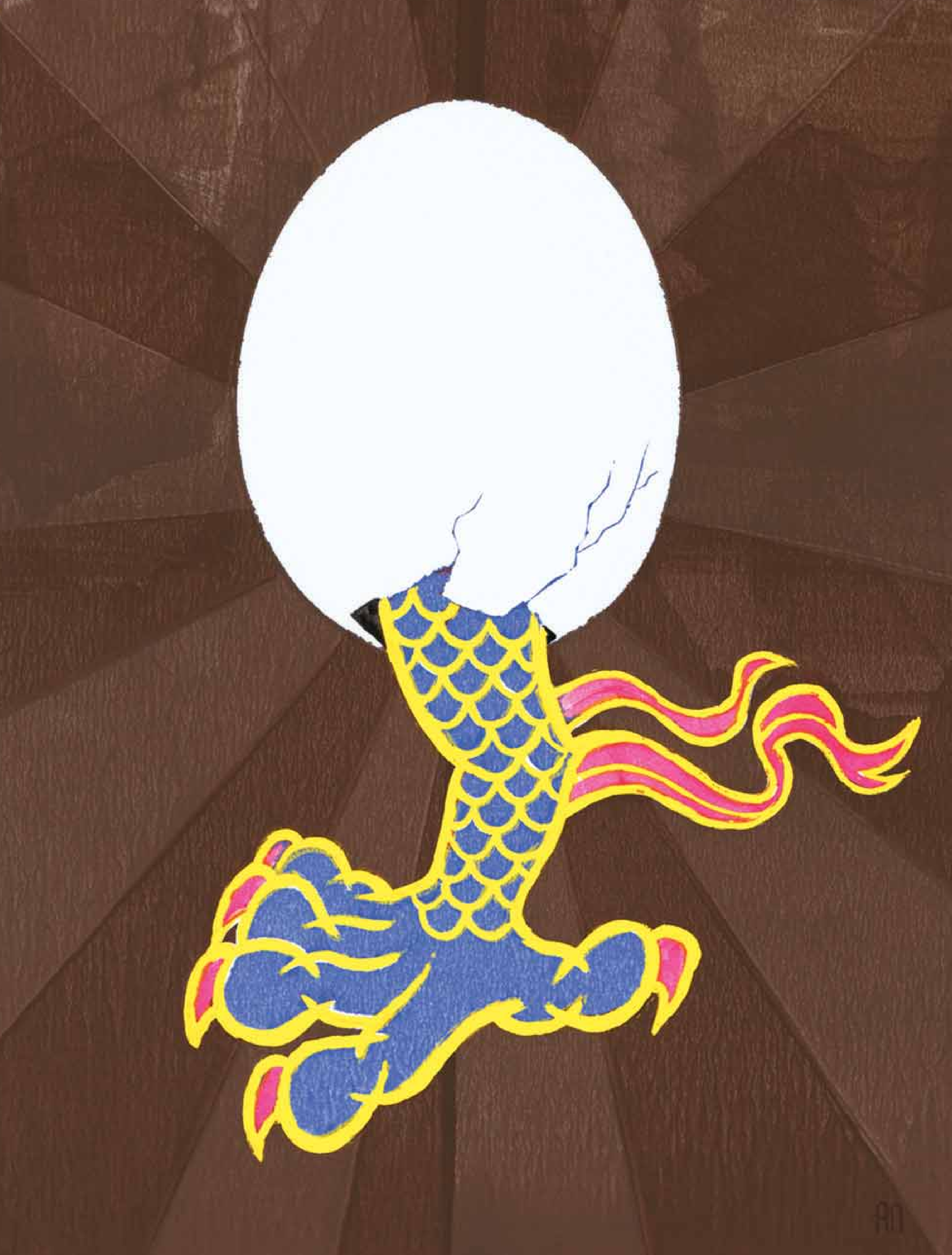
by Tarun Khanna and Krishna G. Palepu

Emerging Giants

Building World-Class Companies in Developing Countries

IN 2003, JUST MONTHS AFTER Mahindra & Mahindra launched a smartly designed sport-utility vehicle called the Scorpio, CNBC India, BBC World's *Wheels* program, and others were heaping Car of the Year awards on the SUV. That was no mean achievement: The made-in-India automobile won top honors ahead of global best sellers such as the Mercedes-Benz E-Class and Toyota Camry sedans. To M&M, which manufactures tractors in several countries as well as vehicles targeted at India's semi-urban and rural markets, the awards signaled that it could finally take the world's automakers head-on. Even as the Scorpio successfully battles multipurpose vehicles like Toyota's Innova and GM's Chevy Tavera at home, M&M has started marketing the SUV in South Africa and Spain. Clearly, the $1.73 billion Indian

ALEX NABAUM



company is on the road to becoming a player in the global automobile industry.

M&M isn't the only company from an emerging market that is making the world sit up and take notice.

Over the past two-plus decades, waves of liberalization have all but washed away protectionist barriers in developing countries. As those nations integrated themselves into the world economy, multinational corporations from North America, Western Europe, Japan, and South Korea stormed in. Many local companies lost market share or sold off businesses as a result, but some fought back. They held their own against the onslaught, restructured their businesses, exploited new opportunities, and built world-class companies that today are giving their global rivals a run for their money.

Some emerging giants compete in several countries – for instance, Brazil's AmBev (which in 2004 merged with Belgium's Interbrew to form InBev); Chile's S.A.C.I. Falabella; China's Baosteel, Galanz, and Lenovo groups and Huawei Technologies; India's Dr. Reddy's Laboratories, Infosys, NIIT, Ranbaxy, Satyam, Tata Group, and Wipro; Israel's Teva Pharmaceuticals; Mexico's Cemex; the Philippines' Jollibee Foods; and South Africa's SABMiller. Others operate mainly at home – for example, China's Wahaha Group; India's Bharti Tele-Ventures and ITC Limited; and Turkey's Koç and Doğuş business groups.

What strategies did these globally competitive businesses deploy to overcome the myriad obstacles that their home environments pose? Why and how did some of them move from their dominant positions at home to establish an international presence? Must every emerging-market company follow suit? What sequence of steps should wannabe giants take to build stronger businesses at home or to enter markets overseas?

Six years ago, we decided to study several companies in developing countries as they created global businesses and emerged on the world stage. Academics such as Harvard Business School's Louis T. Wells, Jr. (who in 1983 popularized the term "Third World multinationals") and MIT's Alice H. Amsden (who in 2000 called firms in emerging markets "companies that rise from the rest") have studied similar businesses. Our focus, however, wasn't on the role that economic policy plays in creating globally competitive companies but on strategies and business models. That's important; several countries have opened up to foreign competition over the years, which has recast the challenges companies in emerging markets face: Survival is tougher, but the opportunities are more enticing than ever. We identified 134 major companies in ten emerging markets – Argentina, Brazil, Chile, China, India, Indonesia, Mexico, Poland, South Africa, and Turkey – and analyzed data on each company, from its strategies to its stock market performance. The patterns, you'll find, are intriguing.

Blunting the Multinationals' Edge

At first glance, Western, Japanese, and South Korean companies appear to hold near-insurmountable advantages over businesses in newly industrializing countries. They not only possess well-known brand names, efficient innovation processes and management systems, and sophisticated technologies but also have access to vast reservoirs of finance and talent. Western European and American companies, for instance, can raise large sums of money at a low cost because of their well-established financial markets. They can hire talent easily because the labor markets on both continents work well. Most developing countries lack the soft infrastructure that makes markets work efficiently, as we have pointed out in previous *Harvard Business Review* articles. (See, for instance, "Why Focused Strategies May Be Wrong for Emerging Markets" July–August 1997.) Because of institutional voids – the absence of specialized intermediaries, regulatory systems, and contract-enforcing mechanisms – corporations in emerging markets cannot access capital or talent as easily or as inexpensively as European and American corporations can. That often makes it tough for businesses in developing countries to invest in R&D or to build global brands.

Nevertheless, these companies can overcome such disadvantages, for three reasons. First, when multinational companies from the developed world explore business opportunities in emerging markets, they must confront the same institutional voids that local companies face. However, executives from multinational companies are used to operating in economies with well-developed institutional infrastructures and are therefore ill equipped to deal with such voids. Western organizations, for instance, rely on data from market research firms to tailor their products and marketing strategies to compete in different markets. They also count on supply chain partners to make and deliver products to customers inexpensively. When these companies attempt to move into countries that don't have sophisticated market researchers or reliable supply chain partners, they find it difficult to deploy their business models. By contrast, the managers at local companies know how to work around institutional voids because they've had years of experience doing so. Their familiarity with the local context allows them to identify and meet customers' needs effectively. Moreover, business groups such as India's Tata Group, the Philippines'

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Ayala Group, and Turkey's Koç Group have created mechanisms for raising capital and developing talent. They can, for instance, raise money from the local stock market by trading on their reputations. These groups can also spread the cost of training executives in-house by deploying their managers across businesses. Such mechanisms allow many local companies to compete effectively with foreign giants.

Second, once companies from emerging markets have demonstrated a degree of success, they, too, can tap capital and talent markets in developed countries. Like American and European companies, they can raise money by, say, listing themselves on the New York Stock Exchange or on Nasdaq. Emerging giants often become investors' darlings, making it easy for them to sell equity shares or bonds. In the talent market, intermediaries from developed countries that are trying to fill the gaps in the soft infrastructure in emerging markets help local businesses become more competitive. In recent years, American and European business schools have launched education programs in developing countries. This has allowed emerging-market companies to retrain their existing managers and to hire people with the same skills that executives in multinational companies possess.

Third – and this is often downplayed by executives – multinational companies are reluctant, sometimes rightly so, to tailor their strategies to every developing market in which they operate. They find it costly and cumbersome to modify their products, services, and communications to suit local tastes, especially since the opportunities in developing countries tend to be relatively small and risky. Further, their organizational processes and cost structures make it difficult for them to sell products and services at optimal price points in emerging markets; they often end up occupying small, superpremium niches. Local companies don't suffer from those constraints, particularly since they operate in just a few geographic markets. In fact, we've found that once emerging-market companies improve the quality of their products and services, they are able to cater to customers at home as well as, if not better than, multinational companies.

Market Structures in Developing Countries

The structure of markets in developing countries helps local companies counter their multinational rivals. Most product markets comprise four distinct tiers: a global customer segment that wants products of global quality and with global features–that is, offerings with the same quality and attributes that goods in developed countries have – and is willing to pay global prices for them; a "glocal" segment that demands products of global quality but with local features (and local soul) at less-than-global prices; a local segment that wants local products with local features at local prices; and a bottom-of-the-pyramid segment, as Michigan University's C.K. Prahalad calls it, that can afford to buy only the most inexpensive products. (See C.K. Prahalad and Allen Hammond's "Serving the World's Poor, Profitably" HBR September 2002.) The markets for talent and capital in developing countries are usually structured along the same lines, as we explain in the exhibit "The Four-Tiered Structure of Markets."

Because of the institutional voids in developing countries, multinational companies find it difficult to serve anything but the market's global tier. In product markets, the lack of market research makes it tough for multinational companies to understand customers' tastes, and the paucity of distribution networks makes it impossible for them to deliver products to customers in the hinterland. In talent markets, they don't have enough knowledge about the local talent pool to design policies that will attract and motivate employees at the glocal, local, and bottom-of-pyramid tiers. Therefore, when a developing country opens up, multinational companies rush into the global tier, and local companies dominate the local tier. There are immense opportunities in the bottom tier, but companies have to use radically different strategies to crack it open. Over time, the glocal tier becomes the battleground between local and foreign corporations. Since glocal customers demand global products with local features, several emerging-market companies have used their knowledge of local markets to serve customers better than multinational firms have been able to, as we shall see in the following pages.

Companies' successes depend on their ability to exploit their competitive advantages. Since emerging giants both circumvent institutional voids and tailor their strategies to local markets better than multinational companies do, they initially take on foreign competitors by capitalizing on their ability to navigate their home turf. They do that by using one of three strategies.

Many emerging-market companies have kept multinational rivals at bay by adapting to the special characteristics of customers and business ecosystems at home.

Exploit Understanding of Product Markets

Many emerging-market companies have become world-class businesses by capitalizing on their knowledge of local product markets. They've kept multinational rivals at bay by judiciously adapting to the special characteristics of customers and business ecosystems at home. These emerging giants have also exploited similarities between geographically proximate developing markets to grow across borders.

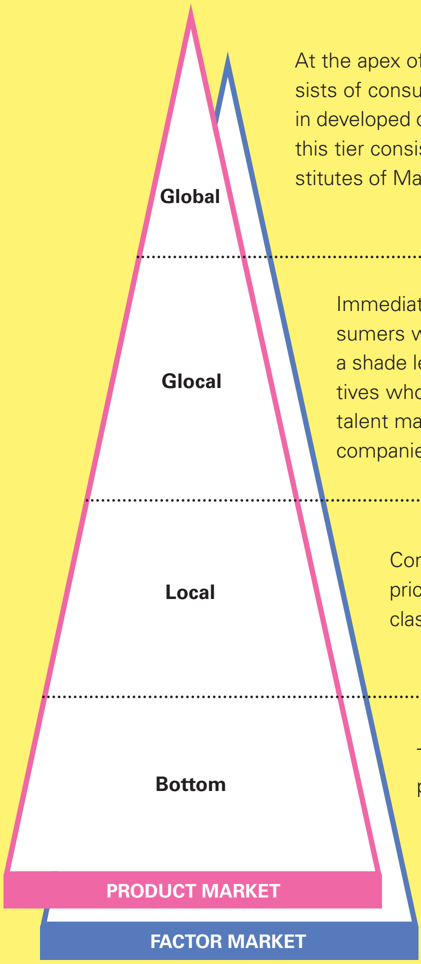
Product markets often turn out to be unique because customers' needs and tastes are idiosyncratic. Local companies are the first to realize that and to build businesses around distinctive national characteristics. For instance, Jollibee Foods thrives because it realizes that Filipinos like their burgers to have a particular soy and garlic taste; Nandos is growing in South Africa by providing cooked chicken that suits local palates; and Pollo Campero is doing the same in Guatemala. Over the past ten years, these companies have profitably battled American giants like McDonald's and KFC. They have also used their understanding of local preferences to cater to the tastes of the diaspora from their home markets. Jollibee serves Filipino communities in Hong Kong, the Middle East, and California; Nandos has expanded into the United Kingdom and Malaysia; and Pollo Campero sells to Latino communities in Ecuador, El Salvador, Honduras, Mexico, Nicaragua, and Peru, as well as parts of the United States.

Haier became a leader in China's white goods market, in the teeth of competition from GE, Electrolux, and Whirlpool, mainly because it was able to develop products tailored to the needs of Chinese consumers. For example, when Haier discovered that customers in rural China were using the company's washing machines to clean vegetables like sweet potatoes, the company modified its product designs to accommodate that need. The humid weather in Chinese cities such as Shanghai and Shenzhen requires people to change clothes frequently, so Haier created a tiny washing machine that cleans a single set of clothes. Because the model uses less electricity and water than a regular washing machine does, it has become an instant hit in China's coastal cities. Haier's strategy compels the company to manufacture a large variety of products, but the company exploits its expert knowledge of the Chinese market – knowledge that is hard for multinational companies to obtain – by developing a product for every need.

Haier has also painstakingly created a distribution and service network that covers not only urban markets on the east coast of China but also markets in semi-urban and rural China. In a country where reliable after-sales service and national distribution aren't common, Haier's investments in those two areas have yielded formidable sources of competitive advantage. Product markets often turn out to be hard to penetrate because companies need specialized infrastructures, distribution channels, or delivery systems to meet customers' needs. Most multinational companies, we find, are ill equipped to pioneer the development of such systems.

The Four-Tiered Structure of Markets

In developing countries, the markets for finished goods (products) and raw materials (factors of production) can be broken up into four distinct components.



At the apex of the market pyramid is the **global tier**. In the product market, this section consists of consumers who want offerings to have the same attributes and quality that products in developed countries have and are willing to pay global prices for them. In the talent market, this tier consists of top-notch managers, such as newly minted graduates from the Indian Institutes of Management, who demand global-level salaries.

Immediately below that is the **glocal tier**. In the product market, this tier consists of consumers who demand customized products of near-global standard and are willing to pay a shade less than global consumers do. An example would be Chinese and Indian executives who prefer to stay in a Shangri-La or Taj hotel rather than at a Four Seasons. In the talent market, this section consists of high-quality managers who will work only for local companies even if the pay is a little less than it would be at multinational corporations.

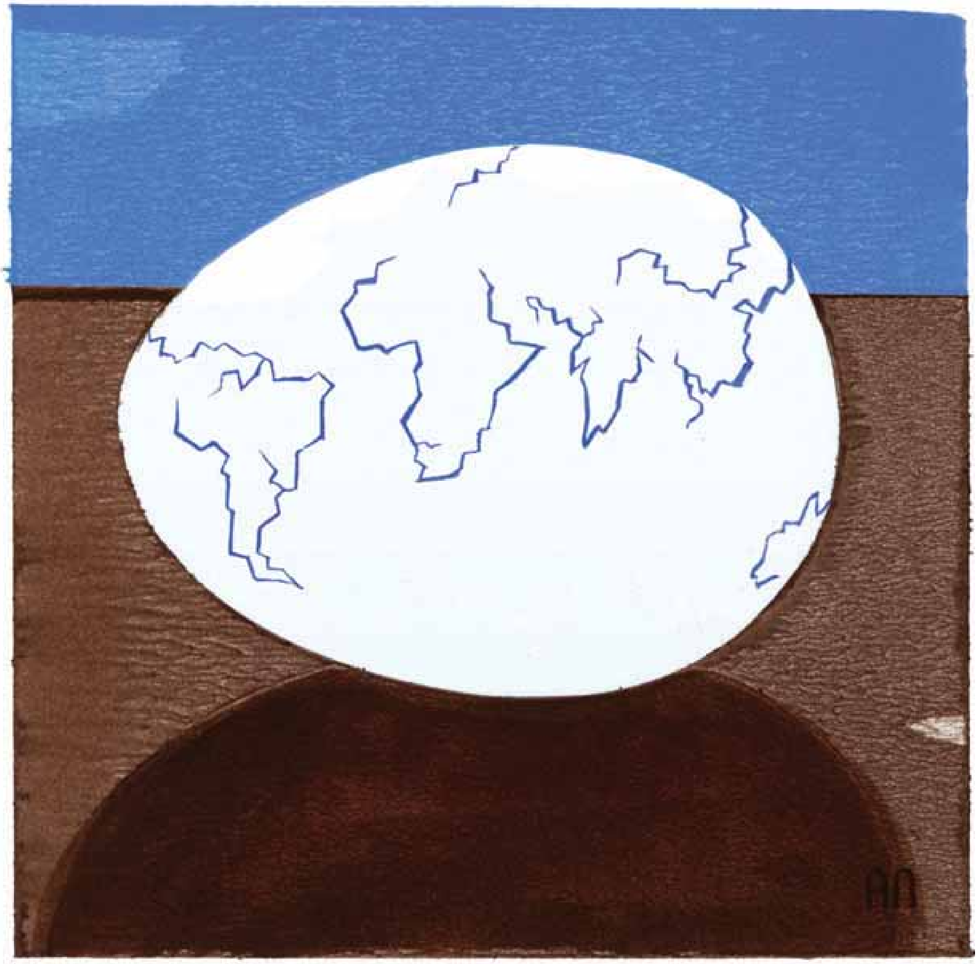
Consumers in the **local tier** are happy with products of local quality and at local prices. In the talent market, managers in this section will put up with less-than-world-class working conditions as long as they are paid higher-than-average salaries.

The **bottom** of the market consists of people who can afford only the least expensive products.

Multinational corporations typically compete for consumers and talent only in the global tier. Meanwhile, smart local companies, which dominate the local tier, move into the glocal tier and also create breakthrough products for the bottom segment as economies liberalize. These businesses often become emerging giants.

Interestingly, Haier took care to cement its leadership at home before venturing abroad. By 1991, the company had become China's biggest manufacturer of refrigerators, but it wasn't until 1995 that Haier set up its first joint venture, in Indonesia. It then quickly moved into the Philippines, Malaysia, and Yugoslavia over the next two years. Germany became the first Western market for Haier-branded refrigerators in 1997, and two years later, Haier entered the United States, setting up a design center in Boston, a marketing operation in New York, and a manufacturing facility in South Carolina. In the U.S. market, the Chinese giant has focused on entering price-sensitive segments and on learning how to establish partnerships with American retailers such as Best Buy, Home Depot, and Wal-Mart. In 2005, research firm Euromonitor International reported that Haier had a 26% share of the U.S. market for compact refrigerators (the kind found in college dormitories and hotel rooms) and a 50% share of the market for low-end wine cellars. Haier's ability to develop products for small segments has stood it in good stead overseas: In July 2006, Wal-Mart's Web site listed 59 Haier products, many aimed at college students.

Haier's travels epitomize the globalization journey that emerging giants make when they embrace opportunities in product markets. They instinctively turn to other emerging markets when they initially venture abroad



because they have the capabilities to respond to opportunities in such countries. Because of their knowledge of products and cost bases, however, they aren't content with operating only in developing countries. When they enter advanced markets, they tend to avoid head-to-head competition with foreign companies; they focus on niche opportunities that allow them to capitalize on their existing strengths. This approach helps emerging giants gradually stretch their capabilities even as they learn how to operate in developed markets. The experience helps them enlarge their footprints in advanced countries and compete more effectively with multinational giants when their home markets mature. For instance, Haier's experience in Europe and the United States will benefit the company as Western retailers such as Carrefour and Wal-Mart become important distribution channels in China.

Build on Familiarity with Resource Markets

Some emerging-market companies have gained competitive advantage by exploiting their knowledge about local factors of production – the markets for talent and capital – thereby serving customers both at home and abroad in a cost-effective manner.

Consider Indian information technology majors such as Tata Consultancy Services, Infosys Technologies, Wipro, and Satyam Computer Services, all of which have excelled in recent years at catering to the global demand for software and services. This is partly because India's education system produces many engineers and technical graduates; local companies hire these people at salaries much lower than those that engineers in developed markets earn. Since institutional voids pervade the talent market in India, however, it is very difficult for foreign companies to capitalize on the same human resources. Multinational software service providers, such as Accenture and EDS, have a hard time sorting talent in a market where the level of people's skills and the quality of educational institutions vary wildly. In fact, as talent becomes scarcer in urban centers like Bangalore and Delhi, Indian companies will maintain their advantage, because they know how to lure people from India's second-tier cities better than multinational companies do.

Transnational giants also find it tough to operate in an economy with a poor physical infrastructure and to cope with the Indian regulatory apparatus. India's software companies recognized the possibility of providing services to overseas customers at least a decade before Western companies acknowledged the feasibility of hiring Indian software professionals. Consequently, the Indian firms gained experience early, which has kept them ahead of their foreign rivals. Recently, some Indian companies have also been able to tap the global capital and talent markets, nullifying more of their overseas rivals' inherent advantages.

Some companies have exploited their knowledge of local factors of production and supply chains to build world-class businesses. Taiwan-based Inventec, for instance, is among the world's largest manufacturers of notebook computers, PCs, and servers, many of which it makes in China and supplies to Hewlett-Packard and Toshiba. It also makes cellular telephones and portable music players for other multinational companies. Inventec's customers benefit from the low costs of manufacturing products in China without having to invest in factories there. They are also able to use China's talented software and hardware professionals, who can design products quickly in an industry where product life cycles are notoriously short. Inventec has mastered the challenges associated with sourcing electronic components from around the world, assembling them into quality products at a low cost, and shipping them to multinational companies in a reliable fashion. Recently, Inventec started selling computers in Taiwan and China under its own brand name. The computers have a Chinese operating system and software, so Inventec doesn't compete directly with its customers – yet.

Likewise, Bunge, the world's largest processor of oilseeds, has created a supply chain that links Brazil's farmers to consumers all over the world. Bunge's savvy trading organization tracks the supply of and demand for oilseeds, which lets executives decide when to buy oilseeds; when and where to crush them; and when and where to transport oil and oil meal for consumer, agricultural, and industrial use. Bunge charters approximately 100 ships; it leases warehouses and crushing plants all over the world; and it even takes equity positions in ports. That infrastructure allows the company to respond quickly to changes in customer requirements and helps it cope with logistics problems, such as those caused by Hurricane Katrina in 2005. Finally, the $24 billion company feeds supply and demand data to Brazil's farmers, along with advice about everything from fertilizers to harvesting techniques, so they can plant the most profitable kinds of oilseeds. Bunge's sales grew by 235% between 1997 and 2004, from $7.4 billion to $25.1 billion. Its net income has risen by about 425% over the same period, from $83 million to $469 million.

Businesses that are built around raw materials are usually global from their inception, either because they serve customers in advanced markets or because they are part of a global value chain. As they grow, these emerging giants expand their footprints in three ways. First, they look for customers in advanced markets that they can serve from their home bases. Second, as factor markets at home become saturated and thus more expensive, these businesses look for other developing countries that offer similar resources. Finally, these companies move up the value chain, selling branded products or offering solutions to niche segments. That's exactly what India's information technology leaders are doing. After establishing themselves as reliable providers of IT services in North America, they moved into Latin America and Asia. By setting up operations in developing countries such as China and Russia, they have started exploiting the large pools of talent in those countries. They have also acquired small consulting firms in the United States and Europe, thereby enhancing their ability to develop high-end solutions for customers.

Treat Institutional Voids as Business Opportunities

The third way to build emerging giants is for private sector businesses to fill institutional voids. Only governments can set up certain institutions, but companies can own and profitably operate many kinds of intermediaries in product and factor markets.

Many institutional intermediaries facilitate the flow of information in markets; these include newspaper publishers and database vendors. Some intermediaries enhance the credibility of the claims sellers make – for instance, accounting firms, quality-certification firms, and accreditation agencies. Others analyze information and advise buyers and sellers; these include rating agencies, product-rating companies such as JD Power and Associates, and publications that rank universities and professional schools. Private sector institutions can also facilitate transactions, either by aggregating and distributing goods and services or by creating forums where buyers and sellers can conduct their own transactions. The aggregators – venture capitalists, private-equity firms, and banks in the financial market; retailers in the product market; and, to some extent, universities in the talent market – help buyers and sellers find each other. Stock exchanges, online auction sites, and job sites on the Internet serve as forums where transactions can take place in the financial, product, and talent markets, respectively. (For more on two-sided markets, see Thomas Eisenmann, Geoffrey Parker, and Marshall W. Van Alstyne's "Strategies for Two-Sided Markets," in this issue.)

Multinational companies enjoy an edge in the intermediaries business because they bring expertise, credibility, and experience to the table. However, emerging-market companies can take them on for three reasons. First, many intermediaries are people intensive, so running them requires familiarity with the local language and culture. Second, intermediaries are information intensive, and it takes local expertise to access scattered information and analyze data of variable quality. Third, governments consider some institutions, such as media, banking, and financial services, to be of national importance. They often prohibit multinational companies from setting up those institutions or force them to collaborate with local companies.

Resource markets can be separated into the four tiers we discussed earlier – one global and three local. Multinational companies are suited to serve as intermediaries in the global tier, but local firms are better able to cater to the other tiers. For example, multinational banks serve large blue-chip customers in emerging markets because evaluating those companies' creditworthiness is relatively straightforward. Those businesses produce high-quality financial statements, get them audited by globally reputable accountants, and, if their shares are listed overseas, follow international accounting norms. However, evaluating the credit of small and medium enterprises is tough: There's so little data on them. Domestic banks, with their local knowledge and informal connections, cater to this segment better than foreign banks do. In Turkey, for example, the likes of Citibank skim the top of the corporate market whereas local banks, like Garanti Bank Turkey and Akbank, cater to Turkish businesses better than the multinational banks do.

Several emerging giants have learned to play the role of market institutions. Consider Old Mutual, an insurance company that realized that South Africa lacked mutual funds and other long-term investment products. Old Mutual responded by creating insurance policies for poor people that had the features of savings accounts. By marketing the policies to millions of South Africans, the company became a large financial services firm. When the South African economy integrated itself with the world market in the early 1990s, Old Mutual moved into other African countries, such as Botswana, Kenya, Malawi, Namibia, and Zimbabwe, and listed itself on the Johannesburg and London stock exchanges.

To take another example, Agora is one of Poland's most successful media companies. It publishes Poland's biggest newspaper, *Gazeta Wyborcza* (GW), which commands 43% of the national readership and has a 62% share of national newspaper advertising revenues. The paper started in April 1989 as an organ for the Solidarity political movement, but after Solidarity's victory in Poland's elections in June 1989, Agora's founders made the newspaper an independent organization. Agora filled the information void in Poland by providing not only news coverage but also a vehicle for advertising. Since GW's readers are educated, live in urban areas, and have plenty of disposable income, the newspaper's advertisers include travel agencies, automakers, cellular phone companies, pension funds, and so on. The company trades on the Warsaw and London stock exchanges, which has enabled it to raise capital to fund its growth. In 1993, the company sold approximately 20% of its shares to Cox Enterprises, an American media company. The alliance enabled Agora to get expertise and capital from Cox.

China's Emerge Logistics is another company that has exploited an institutional void in an emerging market to create a profitable business. Although China has plenty of eight-lane highways, delivering goods isn't easy because the transportation system is underdeveloped. No trucking firm operates nationally; in fact, the average Chinese trucking company owns only one or two vehicles. In addition, separate government bodies regulate air, rail, road, and river transport, and several levels of government impose tolls on vehicles. These factors add to companies' costs and hinder them from distributing products. Emerge Logistics, one of China's few third-party logistics services providers, helps multinational companies sell products all over the country by capitalizing on its understanding of the disjointed transportation system and the baffling bureaucracy. Operating from a warehouse an hour away from Shanghai, Emerge Logistics takes foreign companies all the way through the delivery process – from filing import applications before goods enter the country to collecting payments from customers. The company coordinates the transfer of goods among different modes of transportation and takes orders from Chinese customers for its clients' products. By doing the billing itself, Emerge Logistics also facilitates direct sales by Western multinational companies to Chinese customers.

Emerging giants tend to avoid head-to-head competition with foreign companies; they focus on niche opportunities that allow them to capitalize on their existing strengths.

Exploiting institutional opportunities often doesn't create a launchpad for globalization. That doesn't mean these businesses stay small, however. In markets such as Brazil, China, India, and Russia, institutional businesses can become quite large even if they focus only on the domestic market. In smaller emerging markets, companies that try to fill institutional voids can grow by exploiting adjacent opportunities. A print media company, for instance, can expand into electronic media; a bank can diversify into asset management and investment banking; and a privately owned business school can set up a medical, law, or technology school. Doing so often paves the way for these businesses to go global at a later stage.

The Importance of Execution and Governance

Identifying the right growth strategy is critical for building a world-class business, but execution and governance determine whether companies in emerging markets can realize their potential. While that may be true about building great companies anywhere, our research suggests that excellent execution and good governance are particularly valuable in newly industrializing countries. Financial and talent resources in emerging markets are scarce, but companies that can execute well end up getting more out of them. And since resource providers cannot rely on the enforcement of contracts in emerging markets, good governance – organizational mechanisms that ensure that a company lives up to its commitments to investors, customers, employees, and business partners – allows an organization to acquire a reputation that is invaluable in its dealings with constituents. It can, for instance, access the best resources at the lowest cost.

The manner in which emerging-market companies achieve good governance varies greatly. Countries put different weights on the extent to which a governance system should protect shareholders, employees, and other constituents. The laws regarding corporate governance differ across nations, with greater similarities among those that share economic links such as trading connections. Governance practices vary even more. However, only companies that zealously protect the interests of shareholders and employees, and ensure that both receive competitive returns on investment, become emerging giants.

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Is it better to be more global? The answer may appear to be yes. Well-managed companies do spread their wings over time and enter many geographic markets. There is a correlation between global scope and performance. But executives shouldn't confuse that with a causal relationship. What is important is whether global scope results in competitive advantage rather than being the result of advantage derived in some other fashion. Our research shows that there's more than one way to skin the proverbial cat: Some emerging giants operate in several countries, but others sell only at home. In fact, look at the United Nations Conference on Trade and Development's list of top 50 emerging-market companies, and you'll see that the correlation between size and degree of globalization in these businesses (as measured by market value) is, at 0.4, low. Moreover, the financial performance of world-class companies that have diversified across countries isn't superior to the performance of those that haven't. Emerging giants can thus be successful even if they don't have global footprints.

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The Tools of Cooperation and Change

by Clayton M. Christensen, Matt Marx, and Howard H. Stevenson

Managers can use a variety of carrots and sticks to encourage people to work together and accomplish change. Their ability to get results depends on selecting tools that match the circumstances they face.

The primary task of management is to get people to work together in a systematic way. Like orchestra conductors, managers direct the talents and actions of various players to produce a desired result. It's a complicated job, and it becomes much more so when managers are trying to get people to change, rather than continue with the status quo. Even the best CEOs can stumble in their attempts to encourage people to work together toward a new corporate goal.

In 1999, for example, Procter & Gamble's Durk Jager, a highly regarded insider who had recently been promoted to CEO, announced Organization 2005, a restructuring

JIM FRAZIER

program that promised to change P&G's culture. However, not everyone at P&G agreed that such sweeping change was necessary or that the way to achieve it was to reduce investments in the company's core brands in order to fund radical, new products. The organization rebelled, and Jager was forced to resign only 17 months after taking the helm.

The root cause of Jager's very public failure was that he didn't induce P&G employees to cooperate – a requirement of all change campaigns. To achieve such cooperation, managers have a wide variety of tools at their disposal, such as financial incentives, motivational speeches, training programs, and outright threats. But although most competent managers have a good grasp of what cooperation tools are available, we've observed that they may be less sure about which to use. The effectiveness of a given tool depends on the organization's situation. In this article, which employs some ideas from *Do Lunch or Be Lunch*, by Howard Stevenson and Jeffrey Cruikshank, we explain how to choose the right tools and offer advice for managers contemplating change.

Assessing the Existing Level of Agreement

Over our many years observing management successes and failures up close, we've found that the first step in any change initiative must be to assess the level of agreement in the organization along two critical dimensions. The first is the extent to which people agree on *what they want:* the results they seek from their participation in the enterprise; their values and priorities; and which trade-offs they are willing to make in order to achieve those results. Employees at Microsoft, for instance, have historically been united around a common goal: to dominate the desktop. While of course there will always be pockets of employees who are an exception, this theme has defined the company's culture. The second dimension is the extent to which people agree on *cause and effect:* which actions will lead to the desired outcome. When people have a shared understanding of cause and effect, they will probably agree about which processes to adopt – an alignment that was clearly absent at P&G as Jager attempted to transform the company.

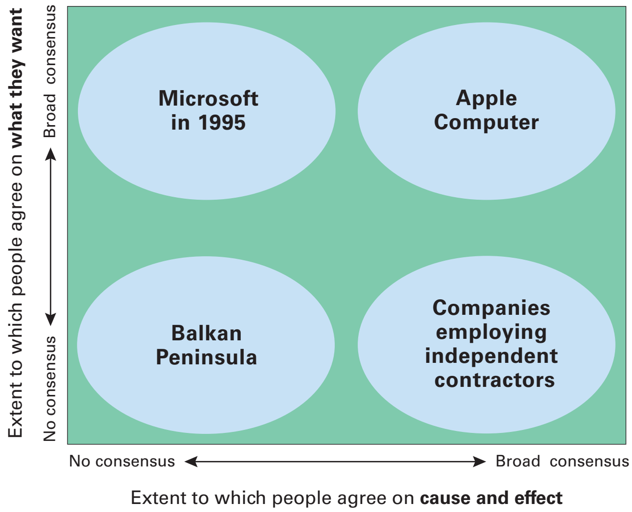
The exhibit "The Agreement Matrix" depicts these dimensions. The vertical axis shows agreement by an organization's members on what they want; the horizontal axis shows their agreement on cause and effect. Employees in organizations in the upper-left quadrant share hopes for what they will gain from being part of the organization, even though each might have a different view of what actions will be required to fulfill those hopes. Microsoft found itself in this situation in 1995, when Netscape was threatening to become the primary "window" through which people would use their computers. Everyone in the company wanted the same thing – to preserve Microsoft's domination of the desktop – but initially there was little consensus about how to do that.

Many companies that employ independent contractors and unionized workers, in contrast, are in the lower-right corner. These employees may have little passion for the goals of the company but are willing to follow prescribed procedures if they agree that those actions will produce the needed results.

In the upper-right quadrant are companies whose employees agree on what they want *and* how to get there. Clear consensus on both dimensions makes these organizations' cultures highly resistant to change: People are generally satisfied with what they get out of working in

The Agreement Matrix

Leaders who want to move their organizations in a new direction must first understand the degree to which employees agree on two dimensions: what they want out of working at the company and cause and effect, or how to achieve what they want. A high level of agreement on both dimensions, such as exists at Apple Computer, requires a completely different set of change tools than leaders will need in, for instance, low-agreement environments.



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the organization and agree strongly about how to maintain that status quo.

The final scenario is the lower-left quadrant of the agreement matrix, where participants do not agree either on what they want or on how the world works. The perpetually warring nation-states of the Balkan Peninsula exemplify this lack of agreement. We will return to each situation in the following pages.

It's important to note that there is no "best" position for managers to aspire to in the agreement matrix. To choose the right tools for fostering cooperation among employees, however, managers must assess where their organization lies. The tools that will induce employees in one quadrant to cooperate with a change program may well misfire with employees in a different quadrant. In fact, in any given situation, most tools for eliciting cooperation will not work.

Moving from Agreement to Cooperation

The tools of cooperation can be grouped into four major categories: power, management, leadership, and culture. In the exhibit "The Four Types of Cooperation Tools," we've matched each category with a quadrant of the agreement matrix. While the boundaries are not rigid, the broad labels can give managers a sense of which tools are likely to be effective in various situations.

Power tools. When members of an organization share little consensus on either dimension of agreement, the only tools that will elicit cooperation are "power tools" such as fiat, force, coercion, and threats. Marshal Josip Broz Tito, the leader of Yugoslavia during most of the Cold War, wielded power tools effectively. He herded the disparate and antagonistic ethnic groups of the Balkan Peninsula into a more or less artificial nation and said, in effect, "I don't care whether you agree with me or with one another about what you want out of life or about how to get it. What I want is for you to look down this gun barrel and cooperate." His approach worked, and the Balkan nations lived in relative peace for several decades.

This is not to suggest, of course, that managers bring firearms to the office. But when organizational factions can't agree on what they want or what to do, power tools are the only ones that work. Jamie Dimon, currently the CEO of JPMorgan Chase, used these tools during the bank's integration with his previous company, Bank One. Convinced that pay had gotten out of control (the head of HR at Bank One was paid more than $5 million), Dimon met with executives individually to tell them they were vastly overpaid and slashed hundreds of salaries by 20% to 50%. He drove a replacement of the firm's myriad IT systems with a single platform, threatening to make all the decisions himself if the IT staff didn't reach any decisions in six weeks. He yanked hundreds of unvisited small-to-midsize businesses from the investment bank's "prospects" list so that the commercial bank could have the chance to work with them. Dimon also reconfigured control systems so that retail branch managers, who had received modest bonuses for meeting sales quotas on mortgages and other products, now stood to lose their jobs for missing quotas.

We have included three tools in the exhibit – negotiation, strategic planning, and financial incentives – to make a point. These tools will work only when there is a modicum of agreement on both dimensions of the matrix. In environments of antagonistic disagreement – whether in the Middle East or in the infamous clashes between Eastern Air Lines' management and its machinist union – negotiation generally doesn't work. A leader might use strategic planning to figure out where the organization ought to go next, but in the absence of the requisite degree of agreement on both dimensions, the strategic plan itself won't elicit the cooperative behavior required to get there.

And using financial incentives – essentially paying employees to want what management wants – may backfire in an environment of low consensus. Consider, for example, the world of K-12 public education, which is decidedly in the lower-left quadrant of the agreement matrix. Teachers, taxpayers, administrators, parents, students, and politicians have divergent priorities and disagree strongly about how to improve. Most pay-for-performance schemes have failed miserably in producing enduring change in schools, because financial incentives are a tool that just won't work in this situation.

Power tools can be extremely effective in low-agreement situations. The key is having the authority to use them. Managers sometimes find themselves in balkanized circumstances without the power to wield the only tools

A WISE MANAGER IN A LOW-CONSENSUS ENVIRONMENT would not agree to lead a change program without the authority to wield the right power tools.

that will induce cooperation under those conditions. If managers are asked to lead a matrixed or "lightweight" project team whose members' loyalties are in conflict with the objectives of the project, for instance, the road to success will be tortuous. Just as a carpenter would never undertake a job without having the requisite tools in his or her toolbox, a wise manager in a low-consensus environment would not agree to lead a change program without the authority to wield the right power tools.

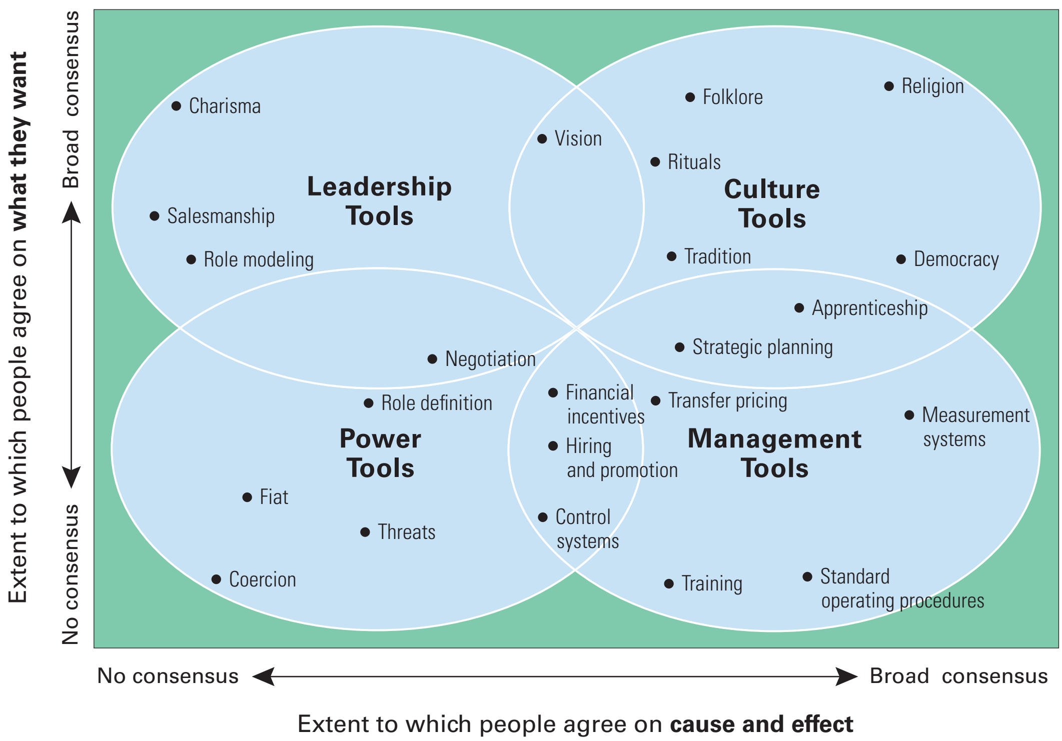
Management tools. The tools of cooperation that drive change in the lower-right quadrant of the agreement matrix focus on coordination and processes. These "management tools" include training, standard operating procedures, and measurement systems. For such tools to work, group members need to agree on cause and effect but not necessarily on what they want from their participation in the organization.

For example, in many companies the reasons unionized manufacturing workers come to work are very different from the reasons senior marketing managers do. But if both groups agree that certain manufacturing procedures will result in products with targeted levels of quality and cost, they will cooperate to follow those procedures.

Measurement systems can also elicit cooperation in such situations. During Intel's first two decades, gross-margin-per-wafer-start was the widely agreed-upon metric for profitability. In the 1980s, the company's DRAM products, which had enjoyed high gross margins in the 1970s, were withering under Japanese competition. Focused on the accepted metric – and even without an explicit execu-

The Four Types of Cooperation Tools

When people in an organization disagree on what they want and on how to achieve desired results, the only tools that induce cooperation are "power tools," which are essentially variations on coercion and fiat. If people want the same thing but disagree on how to achieve it, "leadership tools" such as role modeling and charisma can move them toward a consensus. If people agree strongly on cause and effect but little on what they want, leaders can employ "management tools" such as training and measurement systems. Companies where employees agree on both dimensions of the matrix, and so are generally happy with the status quo, have very strong cultures that are difficult to change. In such circumstances, it is possible only to tweak direction, using such "culture tools" as rituals and folklore. Managers do have other tools at their disposal – such as negotiation and financial incentives – but these will work only when there is a certain level of agreement on both dimensions of the matrix.



tive mandate–middle managers in disparate parts of the organization cooperated to shift manufacturing emphasis from DRAMs to microprocessors, which had become higher-margin products.

Leadership tools. The tools useful in the upper-left quadrant of the agreement matrix tend to be results oriented rather than process oriented. Such "leadership tools" can elicit cooperation as long as there is a high level of consensus that a change is consistent with the reason employees have chosen to work in the enterprise–even if consensus is low on how to achieve the change. Charismatic leaders respected by employees, for example, often do not address how to get things done. Instead, they motivate people to "just go out and do it." Good sales managers employ these tools skillfully.

Bill Gates used the leadership tool we call vision in his 1995 Internet Tidal Wave memo, which helped Microsoft's employees see that maintaining the company's dominance in the software industry (what they wanted) required an aggressive acknowledgment that the nascent World Wide Web would become an integral part of computing rather than a sideshow to the then-dominant desktop applications–an acknowledgment that ran counter to most employees' deeply held beliefs. The fierce response of the company's Internet Explorer team crippled Netscape and won Microsoft a more than 90% share of the browser market. Faced with stiff competition from Google in late 2005, Gates reemployed this technique in his memo regarding a "services wave," calling for a shift from sales of shrink-wrapped software to sales of subscriptions.

The same actions viewed as inspiring and visionary among employees in the upper-left corner of the matrix can be regarded with indifference or disdain by those in the lower quadrants. Consider vision statements. When members of a group agree on what they want to achieve, statements that articulate where the organization needs to go can be energizing and inspiring. But if employees don't agree about what they want, vision statements won't help much in changing their behavior–aside from inducing a collective rolling of eyes.

Culture tools. In organizations located in the upper-right quadrant of the matrix, employees will cooperate almost automatically to continue in the same direction. Their deep consensus on priorities, and on what set of actions will allow the company to achieve those priorities, is the essence of a strong culture. As MIT's Edgar Schein wrote in *Organizational Culture and Leadership,* culture is "a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems." In organizations with strong cultures, people instinctively prioritize similar options, and their common view of how the world works means that little debate is necessary about the best way to achieve those priorities. Companies with strong cultures in many ways can be self-managing.

But this very strength can make such organizations highly resistant to change. So-called culture tools–such as rituals and folklore – only facilitate cooperation to preserve the status quo; they are not tools of change. Leadership and management tools can also be used in this quadrant to foster cooperation, but only in order to reinforce or enhance the existing culture. A manager of such a company might see herself as a visionary leader wanting to chart a new course for the organization. She may want to use a vision statement as a tool for analyzing and refining the vision in her mind. But as a tool of change? Employees in the upper-right strong-culture quadrant are unlikely to cooperate with any strategy that is at odds with their deeply shared beliefs about what they want and what must be done. Hewlett-Packard's Carly Fiorina learned this the hard way when she tried to challenge the so-called HP Way. Her very public clashes with HP's employees and board led to her ouster in 2005, following the company's controversial merger with Compaq. Essentially, as P&G's Durk Jager needed to recognize, the only tools that can be wielded are those that are effective in the domain *where the employees are* – and in strong cultures, the tools in the upper-right quadrant lead to cooperation in gradual change, at best.

What Managers Can – and Cannot – Do

We noted earlier that there is no "best" position in the matrix of agreement; each quadrant carries its own challenges. A company's position may reflect where it is in its life cycle and is largely determined by how successful it has been. Most organizations start at the left and often at the bottom of the matrix, where the founder's fiats drive much of what gets prioritized and how it gets done. If employees develop effective methods that result in success, consensus will begin to coalesce on the horizontal dimension of agreement – what actions yield the desired results. As the company succeeds, employees who fit with these ways of working, and who want what senior management wants, tend to be promoted. Those who don't tend to leave. Hence, success is the mechanism that builds consensus around what people want and how they can get it. Success shifts the organization toward the upper-right quadrant.

Crisis and failure, in contrast, can destroy that consensus, plunging the organization toward the lower-left quadrant. Employees in crisis are no longer certain or unanimous in their beliefs about what actions are necessary. Managers who are able and willing to use power tools during crises can get employees to cooperate in a remedial course of action, provided those managers know where the organization needs to go and what must be done to get there. Indeed, scholars of organizational change frequently prescribe "creating a crisis" because it forces employees into a situation where they can be compelled to cooperate.

While there is merit to the create-a-crisis strategy, there's a rub to this simple solution: What if the CEO sees the need to change direction while the business is still healthy – when the crisis is in the future, not the present? And what if this healthy company also has an extremely strong culture? That was the situation facing John Sculley, CEO of Apple Computer from 1983 until 1993. Fresh from a triumphant career at PepsiCo, Sculley was an exceptional executive. During his first several years at Apple, the company continued to prosper. By the late 1980s, however, Sculley sensed trouble over the horizon and saw the need to change strategy in three specific ways. First, he saw fledgling low-cost computer makers, such as Dell, menacingly exploring how to make higher-performance computers within their low-cost business models. Sculley declared that Apple needed to move down-market aggressively, reducing its prices by as much as 75% in order to blunt this disruptive attack. Second, before Microsoft introduced its Windows operating system, Sculley urged

The Tools of Politics

In institutions with well-established cultures (those in the upper-right portion of the exhibit "The Agreement Matrix"), democracy can be used as a tool to encourage cooperation. An important insight from this model is that democracy will not work except where people agree strongly on both dimensions of the matrix: what they want and the rules of cause and effect. The very functioning of democracy depends upon the existence of strong cultural beliefs that are often rooted in the teachings of certain religions. The religious institutions at the root of these cultures have taught that people are meant to be free and that they should voluntarily be honest and respect the life, property, and equal opportunity of others – because even if the police don't catch and punish them, they will be rewarded or punished in some way in the afterlife. The successful practice of these beliefs – together with a shared value that every person should be allowed to worship God in his or her own way – has created successful societies in places such as India, Japan, the United States, and Western Europe. The practices have become so deeply embedded over so many years that almost all people in these societies, regardless of religious belief, now strongly share these values and are ensconced in the upper-right quadrant of the agreement matrix. The vast majority of people living in these cultures obey the law voluntarily – and, as a result, democracy works.

On occasion, Americans in particular have tried to impose democracy on countries whose populations are not in the upper-right corner of the agreement matrix – where religious or other institutions have not built the type of cultural consensus that is consistent with democratic principles. When America has essentially snapped its fingers at these countries, ordering them to establish stable democracies – and quickly – chaos typically has ensued. The crime, corruption, and tax evasion that characterize much of Russia; the collapse of civil order that torments Haiti; and the costly, tragic dilemma that America now faces in Iraq – all are testaments to the fact that democracy doesn't work when the enabling preconditions don't exist.

DEEP CONSENSUS ON PRIORITIES, and on what set of actions will allow the company to achieve those priorities, is the essence of a strong culture.

Apple to open its proprietary product architecture and begin selling its vaunted operating system. Third, he saw that portable, handheld devices would become an important growth market. In retrospect, Sculley saw the future of his industry with remarkable clarity.

But being a visionary leader isn't all it's cracked up to be. When leaders like Sculley conclude that their organization's course must change, they need to consider where the rest of the employees are in the agreement matrix. At Apple, they were decidedly in the upper-right quadrant–some said that Apple put the "cult" in "culture." Sculley tried reorganization, firings, control systems, financial incentives, training, measurement systems, standard procedures, vision statements, salesmanship, strategic planning, and many more tools to elicit cooperation behind the changes he envisioned. But none worked. The Apple employees wouldn't listen.

Sculley gradually lost credibility with his board and employees as tool after tool failed to produce the changes he desired, and he was ousted in 1993. Apple's board then appointed Michael Spindler, head of the company's successful European operations, as CEO. Spindler also found that the only tools of cooperation at his disposal were those that reinforced Apple's culture, and he was dismissed after three years. The board then brought in Gil Amelio, who had turned around the deeply troubled National Semiconductor – expecting that he could do the same at Apple. He couldn't and was gone in 18 months.

Unable to recruit another qualified CEO, Apple's board turned in desperation to ousted Apple founder Steve Jobs as interim CEO. Jobs essentially stopped trying to change the company and instead encouraged the troops to resume designing cool, innovative, high-end products such as the iMac and iPod. Apple now dominates the digital music industry. But if there had been any tools to wield within this strong culture to elicit cooperation behind the new direction Sculley foresaw, Apple might have captured much of the fruit that ultimately fell into the hands of Compaq, Dell, and Microsoft.

The Tool of Disaggregation

All is not lost for managers who see the need to change a successful company before the onset of a crisis. They can wield the tool of *disaggregation*–the separation of organizations into units. This allows managers at the new unit to build a different consensus among its employees regarding what they want and how to get there, while the prior culture continues to thrive in the original unit.

Disaggregation works by eliminating the need for cooperation between groups with opposing goals. This is how Hewlett-Packard succeeded in the disruptive ink-jet printer business even while its laser-jet printer business was prospering with a very different profit model. HP disaggregated the printer business, leaving the laser-jet unit in Boise, Idaho, and setting up the ink-jet unit in Vancouver, Washington. Likewise, IBM stayed strong in computers for many years, whereas all its mainframe and minicomputer rivals failed, because it used the tool of disaggregation. When minicomputers began disrupting mainframes, IBM created a separate business unit in Rochester, Minnesota, to focus on minicomputers, which had to be designed, built, and sold within a very different economic model than mainframes. When personal computers disrupted minicomputers, IBM disaggregated again, setting up in Boca Raton, Florida, another freestanding unit, which developed a business model tailored to PCs. Had IBM executives tried to convince the managers and employees of the original computer business to cooperate on a strategy, economic model, and culture to succeed simultaneously in mainframes, minicomputers, and PCs, the company would have failed.

Mastering the Tools of Cooperation at Continental Airlines

It would be rare, of course, for *all* employees in a company to be in one place in the agreement matrix at a given time or across time. While the founding group of senior managers may be in the upper-right quadrant, manufacturing employees may be in the lower-right. Those in sales and creative design might be in the upper-left, sharing an understanding of what is important but unwilling to subject themselves to the sorts of standards and processes that are effective in the lower-right quadrant. Most managers, unfortunately, have a limited tool kit and thus can successfully manage only in certain types of situations. One of the rarest managerial skills is the ability to understand which tools will work in a given situation – and not to waste energy or risk credibility using tools that won't.

Gordon Bethune, CEO of Continental Airlines from 1994 until 2004, was such a manager. Bethune was the airline's tenth CEO in ten years, following a disastrous run including industry worsts in lost baggage, customer complaints, overbooking, and on-time departures. Moreover, Continental had declared bankruptcy twice during the previous decade and was losing $55 million per month despite years of cost cutting.

Bethune turned down the top job twice even though he was already serving as Continental's COO. The first offer was to be acting CEO during the existing CEO's six-month leave of absence, and the second was to serve in the office of the CEO after that executive decided to retire. Although board members respected Bethune, they believed that the only way to restore profitability was through further cost cutting–a path Bethune was convinced would lead to disaster, not deliverance. Given the significant disagreement about how to restore profitability, Bethune knew he could do nothing without the full authority that came with the top job, without the qualifiers of "acting" or "office of."

Even after the board approved Bethune as CEO, few within the company agreed with his unconventional view that Continental needed to be *less* restrictive of its employees and spend *more* in order to get out of bankruptcy. As Bethune wrote in his book *From Worst to First,* when the operations staff rebuffed his instruction to repaint all of the carrier's more than 200 airplanes, he threatened to shoot them unless they complied. Concerned that customer-service employees were micromanaging customers by relying too heavily on a very thick instruction manual, he set fire to a stack of manuals in the parking lot.

Having won some initial battles by sheer force, Bethune achieved preliminary success and began to move the company out of the lower-left quadrant toward the upper-right. As the company started to recover, Bethune began employing more traditional management tools, including financial incentives. After he offered each employee a $65 bonus every month that Continental placed among the top five for on-time departures, Continental jumped to fourth the subsequent month and first thereafter. Our model suggests that this incentive would not have worked in the environment of distrust and disagreement that characterized the company when Bethune began his work. By 1998, the company had posted 11 straight quarters of improved profits and had won two consecutive J.D. Power and Associates' awards. Bethune spent the final years of his career using the tools in the upper-right quadrant, working to reinforce what has become a very productive culture.

Bethune's well-timed choice of tools mirrored that of Jack Welch at General Electric, who started out as Neutron Jack, using power tools when the company was a collection of businesses with vastly different cultures, operating procedures, and expectations about growth and profitability. As he oriented the company around the mantra of being first or second in each of the conglomerate's businesses, GE moved from the lower-left corner of the matrix toward the upper-right, and Welch shifted his focus to culture-reinforcing activities, teaching up-and-coming managers at the company's Crotonville campus.

ONE OF THE RAREST MANAGERIAL SKILLS is the ability to understand which tools will work in a given situation–and not to waste energy or risk credibility using tools that won't.

The success of Bethune and Welch, of course, is both good news and bad news for their successors. As long as the shared purposes and unified view of how to achieve them are appropriate for their companies' challenges, Larry Kellner and Jeffrey Immelt ought to be able to preside over continued success using the cooperation tools handed to them on their arrival. However, if there are shifts in the competitive environment that mandate significant changes either to what people want or to the required actions, the two CEOs may find that the tools their predecessors used to turn their organizations around cannot be wielded effectively in the strong-culture quadrant.

For example, much has been written about former CEO Lou Gerstner's success in refashioning IBM from a "big iron" company to one built on services. Managing change is always hard. But our model suggests that because he took IBM's helm when the company was in genuine crisis, losing billions of dollars, Gerstner was fortunate. The situation demanded power tools. As IBM's service businesses mature, his successor, Sam Palmisano, may face the tougher challenge. There is no current crisis that enables the effective use of power tools to marshal a cooperative march in a new direction. He faces a cultural challenge that will likely prove more difficult than the crisis Gerstner faced.

Bethune, Welch, and Gerstner were blessed with an instinct for choosing the right tools at the right time. Our hope is that by making the instincts of effective managers more explicit, even those of us who are not born knowing how to manage change can learn to do so more effectively.

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To order, see page 151.

THE HBR INTERVIEW | **JAMES G. MARCH**

Stanford's James March has become a leading business thinker of our time while arguing that the elegance of an idea may be more important than its relevance.

IDEAS AS ART

INTERVIEWED BY DIANE COUTU

IN THESE PAGES, three years ago, consultants Laurence Prusak and Thomas H. Davenport reported the findings of a survey of prominent management writers who identified their own gurus. Although his is an unfamiliar name to most readers of this periodical, James G. March appeared on more lists than any other person except Peter Drucker.

March is a writer to whom the experts turn when they want to engage new ideas. He is a polymath

STEVEN VOTE

whose career over the past five decades has encompassed numerous disciplines. A professor emeritus in management, sociology, political science, and education at Stanford University, he has taught courses on subjects as diverse as organizational psychology, behavioral economics, leadership, rules for killing people, friendship, decision making, models in social science, revolutions, computer simulation, and statistics.

March is perhaps best known for his pioneering contributions to organization and management theory. He has coauthored two classic books: *Organizations* (with Herbert A. Simon) and *A Behavioral Theory of the Firm* (with Richard M. Cyert). Together with Cyert and Simon, March developed a theory of the firm that incorporates aspects of sociology, psychology, and economics to provide an alternative to neoclassical theories. The underlying idea is that although managers make decisions that are intendedly rational, the rationality is "bounded" by human and organizational limitations. As a result, human behavior is not always what might be predicted when rationality is assumed.

In addition to this work, March has been a leading contributor to the study of political institutions, particularly through the books *Rediscovering Institutions* and *Democratic Governance* (both coauthored with Johan P. Olsen); the study of leadership, through *Leadership and Ambiguity* (with Michael D. Cohen) and *On Leadership* (with Thierry Weil); and the study of decision making, through his books *A Primer on Decision Making* and *The Pursuit of Organizational Intelligence*.

March's influence on students of organizations and management and his accomplishments in other areas of social science have conferred on him an almost unprecedented reputation as a rigorous scholar and a deep source of wisdom. In the academic literature, it has become de rigueur to cite his articles. Professor John Padgett of the University of Chicago wrote in the journal *Contemporary Sociology* that "Jim March is to organization theory what Miles Davis is to jazz....March's influence, unlike that of any of his peers, is not limited to any possible subset of the social science disciplines; it is pervasive."

Despite his renown in the social sciences, March has not confined his interests to those fields. Besides his professional and scholarly articles and books, he has made one film *(Passion and Discipline: Don Quixote's Lessons for Leadership*), is currently working on another, and has written seven books of poetry. His poetic sensibility can be felt in the metaphors he has created over the years: the "garbage can theory" of organizational choice, the "technology of foolishness," the role of consultants as "disease carriers," and the "hot-stove effect."

Diane Coutu *(dcoutu@hbsp.harvard.edu) is a senior editor at HBR.*

In a recent interview with HBR senior editor Diane Coutu at his home in Portola Valley, California, March shared his thinking on aesthetics, leadership, the usefulness of scholarship, the role of folly, and the irrelevance of relevance when it comes to the pursuit of ideas. The following is an edited version of that interview.

How did you come to have such influence on management thinking without being as public a figure as Peter Drucker?

I don't claim to have any notable impact, partly because I question the methodology by which such an impact is assigned to me, and partly because I suspect it is easier to infiltrate the idea consciousness of the business community if you do not worry about attribution, reputation for significance, or direct communication. And even if that is not true, I fear that my own enjoyments come more from playing with ideas than from selling them. I am a scholar; I do what scholars do. I think about things, conduct research studies, and write up my thoughts and research in professional journals. The writing is probably more a way of understanding my thoughts than of communicating them.

That sounds more reclusive than I believe I am. I am hardly so perverse as to resist having my writings read by others. The articles I write are accessible to any manager who chooses to read them. I don't write obscurely – at least not deliberately – and the ideas are not exceptionally arcane. Dull, maybe, but not arcane.

You liked to begin your classes at Stanford each year saying, "I am not now, nor have I ever been, relevant." What did you mean by that?

It was a signal to students that it would not be fruitful to ask me about the immediate usefulness of what I had to say. If there is relevance to my ideas, then it is for the people who contemplate the ideas to see, not for the person who produces them. For me, a feature of scholarship that is generally more significant than relevance is the beauty of the ideas. I care that ideas have some form of elegance or grace or surprise – all the things that beauty gives you. The central limit theorem, for example, is one of the more important theorems in classical statistics; it allows you to say things about sampling errors. But for me, the theorem is primarily a thing of extraordinary beauty. I think that anyone who teaches the central limit theorem should try to communicate that aesthetic joy to students.

Charlie Lave and I wrote *Introduction to Models in the Social Sciences*. Among the books I've written, it is one of my favorites. It introduces students to the rudiments of four very fundamental models in social science. It treats modeling as an art form. Scholarship will always have an element of aestheticism, because scholars are obliged to advance beauty as well as truth and justice.

This seems to be your artistic sensibility. How do you justify such a sensibility in a world where business is so desperately in need of practical solutions?
No organization works if the toilets don't work, but I don't believe that finding solutions to business problems is my job. If a manager asks an academic consultant what to do and that consultant answers, then the consultant should be fired. No academic has the experience to know the context of a managerial problem well enough to give specific advice about a specific situation. What an academic consultant can do is say some things that, in combination with the manager's knowledge of the context, may lead to a better solution. It is the combination of academic and experiential knowledge, not the substitution of one for the other, that yields improvement.

Have you ever consulted to businesses?
When I was younger – younger and poorer, I suppose – I used to do some relatively technical consulting about things involving statistics or research methods. I don't do that any longer. I still occasionally do something I humorously call "consulting" but probably is better seen as getting someone to buy lunch for me. If someone calls me up and says a manager would like to talk to me, I'm inclined to respond that I almost certainly don't have anything useful to say. But if the answer is that it doesn't matter, that the manager still wants to have lunch with me, then I am happy to have lunch. I think that it would ordinarily be difficult to discover any practical use for such conversations, but I may occasionally have a way of looking at things that is sufficiently different to help a manager in some marginal way. Usually, managers are sensible enough not to ask me to lunch, and I end up paying for most of my lunches myself.

> No organization works if the toilets don't work, but **I DON'T BELIEVE THAT FINDING SOLUTIONS TO BUSINESS PROBLEMS IS MY JOB.**

Leadership has become a big concern and a big industry in recent years. What is happening in leadership research?
I doubt that "leadership" is a useful concept for serious scholarship. The idea of leadership is imposed on our interpretation of history by our human myths, or by the way we think that history is supposed to be described. As a result, the fact that people talk about leaders and attribute importance to them is neither surprising nor informative. Although there is good work on several aspects of asymmetric relations in life, broad assertions about leadership are more characteristic of amateurs than of professionals. Unless and until a link to significant scholarship can be made, the thinking on leadership will produce more articles in popular journals than in professional ones, more homilies and tautologies than powerful ideas. In the meantime, in order for leadership scholarship to generate some good ideas, it needs to build buffers to protect itself from the temptations of immediate relevance.

What kinds of questions do you think are important for leaders?
In my course on leadership and literature, I ended up with a list of about ten topics–for example, power, domination, and subordination; ambiguity and coherence; gender and sexuality; the relation between private and public lives. Not a unique list, and hardly a complete one. Each of the topics can draw illumination from social science, but I think they often are more profoundly considered in great literature. One issue, which I used to talk about by looking at George Bernard Shaw's *Saint Joan,* is how madness, heresy, and genius are related. We often describe great leaders as having the drive, vision, imagination, and creativity to transform their organizations through daring new ideas. Retrospectively, of course, we sometimes find that such heresies have been the foundation for bold and necessary change, but heresy is usually just crazy. Most daring new ideas are foolish or dangerous and appropriately rejected or ignored. So while it may be true that great geniuses are usually heretics, heretics are rarely great geniuses. If we could identify which heretics would turn out to be geniuses, life would be easier than it is. There is plenty of evidence that we cannot.

In your film on Don Quixote and leadership, you say that if we trust only when trust is warranted, love only when love is returned, and learn only when learning is valuable, then we abandon an essential feature of our humanity. How do we lose part of our humanity?
We justify actions by their consequences. But providing consequential justification is only a part of being human. It is an old issue, one with which Kant and Kierkegaard, among many others, struggled. I once taught a course on friendship that reinforced this idea for me. By the end of the course, a conspicuous difference had emerged between some of the students and me. They saw friendship

as an exchange relationship: My friend is my friend because he or she is useful to me in one way or another. By contrast, I saw friendship as an arbitrary relationship: If you're my friend, then there are various obligations that I have toward you, which have nothing to do with your behavior. We also talked about trust in that class. The students would say, "Well, how can you trust people unless they are trustworthy?" So I asked them why they called that trust. It sounded to me like a calculated exchange. For trust to be anything truly meaningful, you have to trust somebody who isn't trustworthy. Otherwise, it's just a standard rational transaction. The relationships among leaders and those between leaders and their followers certainly involve elements of simple exchange and reciprocity, but humans are capable of, and often exhibit, more arbitrary sentiments of commitment to one another.

You've said that scholars and managers do fundamentally different things. Can you elaborate on that?

You need both academic knowledge and experiential knowledge, but they are different. The scholar tries to figure out, What's going on here? What are the underlying processes making the system go where it's going? What is happening, or what might happen? Scholars talk about ideas that describe the basic mechanisms shaping managerial history – bounded rationality, diffusion of legitimate forms, loose coupling, liability of newness, competency traps, absorptive capacity, and the like. In contrast, experiential knowledge focuses on a particular context at a particular time and on the events of personal experience. It may or may not generalize to broader things and longer time periods; it may or may not flow into a powerful theory; but it provides a lot of understanding of a particular situation. A scholar's knowledge cannot address a concrete, highly specific context, except crudely. Fundamental academic knowledge becomes more useful in new or changing environments, when managers are faced with the unexpected or the unknown. It provides alternative frames for looking at problems rather than solutions to them.

Along with Richard Cyert and Herb Simon, you laid the groundwork for the field of behavioral economics. Do you think you started a revolution?

Scholarship is a communal activity. No one comes first; and no one stands alone. Insofar as there has been a behavioral economics "revolution," it is a revolution started by many. Nowadays, economists and others do talk a fair amount about bounded rationality. But the economists are more inclined to see the limits on rationality as minor perturbations, easily accommodated within some variation of neoclassical economic theory, than as fundamental challenges. I once wrote a paper on the tendency of economists to maintain neoclassical theory by reinterpreting its definitions and constraints. I called the paper "The War Is Over, and the Victors Have Lost," to note the way economics has tended to become so tautological as to "explain" everything at the cost of abandoning predictive power. At times, economics as a theory threatens to become economics as a faith.

You've been unusually interdisciplinary in your life's work. Is there some overarching question that you've tried to answer?

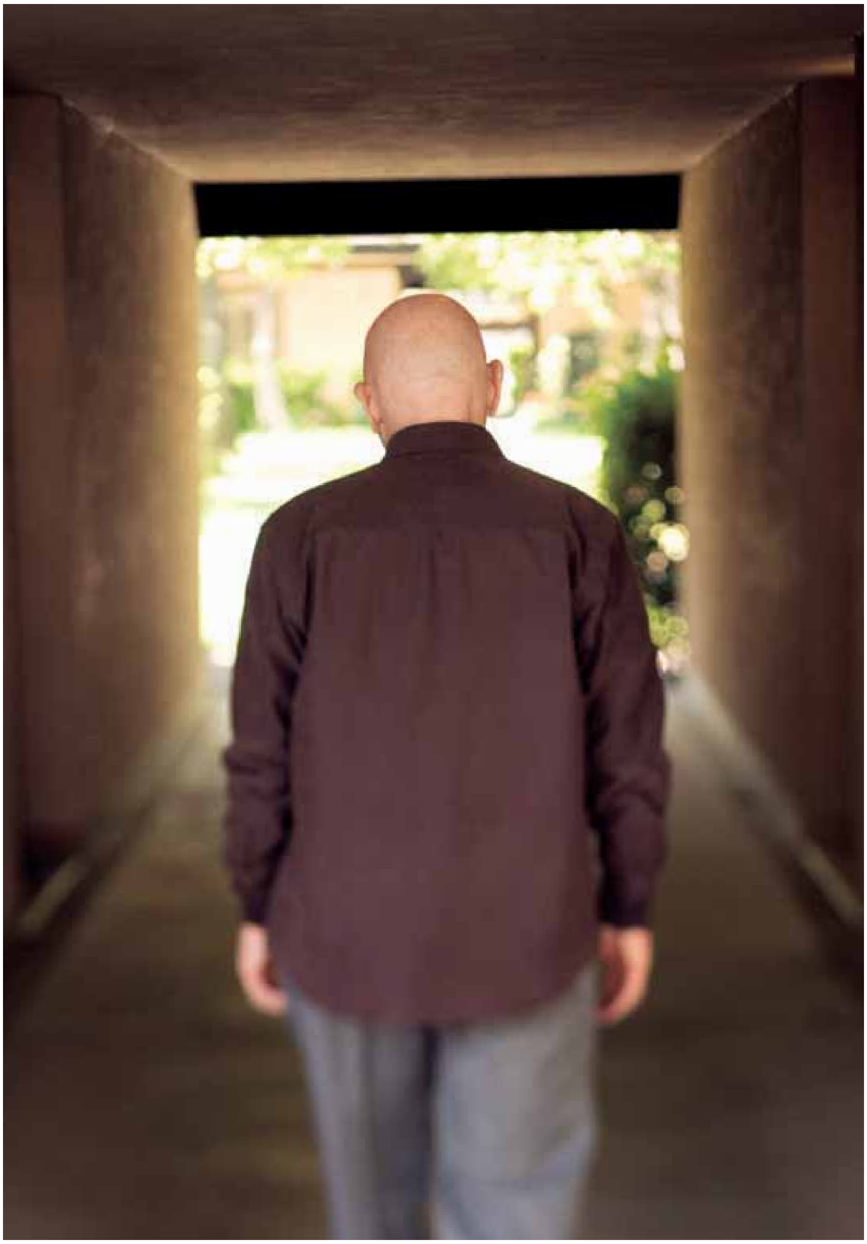
I don't think it's been that grand. It just happens that the disciplines are organized in ways that distribute my rather narrow areas of research focus across standard disciplinary lines. I've studied problem solving and decision making, risk taking, information processing, innovation and change, learning, selection, and the creation and revision of rules and identities. In a very loose way, I think, you could say my main focus has been on the cognitive aspects of organizations, as long as you include in the term "cognitive" such things as conflict, bias, rule following, and confusion.

Much of your research has focused on learning in one way or another. How is this tied to the hot-stove effect?

That term comes from an article by Jerker Denrell and me, but it is stolen from some of Mark Twain's wisdom. Twain said that if a cat ever jumps on a hot stove, he will never jump on a hot stove again. And that's good. But he will also never jump on a cold stove again – and that may not be good.

The hot-stove effect is a fundamental problem of learning. Learning reduces your likelihood of repeating things that got you in trouble, as you hope it will. But that means you know less about the domains where you've done poorly than about the domains where you've done well. You might say, "Well, why should that cause problems?" It causes problems whenever your early experience with an alternative is, for whatever reason, not characteristic of what subsequent experience would be. It clearly causes problems in domains where practice makes a difference. For example, you are likely to abandon an approach or a technology prematurely.

One form of the hot-stove effect is the competency trap, where learning encourages people to stick to and improve skills they have already honed to a fine degree rather than spend time gaining new ones. Some of my grandchildren say to me, "We're not very good at mathematics, so we're not going to take any more mathematics." I say, "Wait a minute. Mathematics is a practice sport. If you're not very good at it, you take more of it." That's counterintuitive, and it goes against the main logic of experiential learning, not to mention grandchildren's sentiments about control over their own lives. It has also been demonstrated that the hot-stove effect leads experiential learners to be risk averse. It is possible to limit the hot-stove effect by slowing learning so that you increase the sample of alternatives that have poor results. That obviously has the cost of incurring short run losses and consequently is hard for an adaptive system to do.



You've written about the importance of a "technology of foolishness." Could you tell us a little about it?

That paper sometimes gets cited – by people who haven't read it closely – as generic enthusiasm for silliness. Well, maybe it is, but the paper actually focused on a much narrower argument. It had to do with how you make interesting value systems. It seemed to me that one of the important things for any person interested in understanding or improving behavior was to know where preferences come from rather than simply to take them as given.

So, for example, I used to ask students to explain the factual anomaly that there are more interesting women than interesting men in the world. They were not allowed to question the fact. The key notion was a developmental one: When a woman is born, she's usually a girl, and girls are told that because they are girls they can do things for no good reason. They can be unpredictable, inconsistent, illogical. But then a girl goes to school, and she's told she is an educated person. Because she's an educated person, a woman must do things consistently, analytically, and so on. So she goes through life doing things for no good reason and then figuring out the reasons, and in the process, she develops a very complicated value system – one that adapts very much to context. It's such a value system that permitted a woman who was once sitting in a meeting I was chairing to look at the men and say, "As nearly as I can tell, your assumptions are correct. And as nearly as I can tell, your conclusions follow from the assumptions. But your conclusions are wrong." And she was right. Men, though, are usually boys at birth. They are taught that, as boys, they are straightforward, consistent, and analytic. Then they go to school and are told that they're straightforward, consistent, and analytic. So men go through life being straightforward, consistent, and analytic – with the goals of a two-year-old. And that's why men are both less interesting and more predictable than women. They do not combine their analysis with foolishness.

How do you encourage people to be foolish?

Well, there are some obvious ways. Part of foolishness, or what looks like foolishness, is stealing ideas from a different domain. Someone in economics, for example, may borrow ideas from evolutionary biology, imagining that the ideas might be relevant to evolutionary economics. A scholar who does so will often get the ideas wrong; he may twist and strain them in applying them to his own discipline. But this kind of cross-disciplinary stealing can be very rich and productive. It's a tricky thing, because foolishness is usually that – foolishness. It can push you to be very creative, but uselessly creative. The chance that someone who knows no physics will be usefully creative in physics must be so close to zero as to be indistinguishable from it. Yet big jumps are likely to come in the form of foolishness that, against long odds, turns out to be valuable. So there's a nice tension between how much foolishness is good for knowledge and how much knowledge is good for foolishness.

Another source of foolishness is coercion. That's what parents often do. They say, "You're going to take dance lessons." And their kid says, "I don't want to be a dancer." And the parents say, "I don't care whether you want to be a dancer. You're going to take these lessons." The use of authority is one of the more powerful ways to encourage foolishness. Play is another. Play is disinhibiting. When you play, you are allowed to do things you would not be allowed to do otherwise. However, if you're not playing and you want to do those same things, you have to justify your behavior. Temporary foolishness gives you experience with a possible new you – but before you can make the change permanent, you have to provide reasons.

Most daring new ideas are foolish or dangerous and appropriately rejected or ignored. So **WHILE IT MAY BE TRUE THAT GREAT GENIUSES ARE USUALLY HERETICS, HERETICS ARE RARELY GREAT GENIUSES.**

What role would there be for foolishness in business education?

We have some foolishness already, though we dress it up as fairly serious activity. For example, we have students play roles. We have them pretend they are the CEO of IBM, and that's foolishness. They aren't, and they can't be, and they won't be. But if you are encouraged to think of yourself as somebody else, you start acting the way you imagine such a person ought to act and experimenting with who you might become.

On the whole, I think that American management education is so deeply embedded in a rational mystique that pressure toward foolishness often has to become extreme in order to have even a minor effect. At the same time, I don't think any of us would want to live in a world of foolishness that ignored the fact that one of the major glories of the human estate is the capability to practice intelligent rationality.

It's all a question of balance. Soon after I wrote my paper on the technology of foolishness, I presented it at a conference in Holland. This was around 1971. One of my colleagues from Yugoslavia, now Croatia, came up and said, "That was a great talk, but please, when you come to Yugoslavia, don't give that talk. We have enough foolishness." And I think he may have been right.

You're famous for your garbage can theory of organizational choice. Can you sum up the theory for us?

The original article on the garbage can theory was written jointly with Michael Cohen and Johan Olsen, so they have to share in whatever fame or shame there is in it. A fair number of people took the organized-anarchy notion that life is ambiguous and said, "The garbage can is really a label for confusion." That wasn't quite what we meant.

We were operating at two levels. On one level, we were saying that choice is fundamentally ambiguous. There is a lot of uncertainty and confusion that isn't well represented by standard theories of decision making. Opportunities for choice attract all sorts of unrelated but simultaneously available problems, solutions, goals, interests, and concerns. So a meeting called to discuss parking lots may become a discussion of research plans, sexual harassment, managerial compensation, and advertising policies. Time is scarce for decision makers, though, and what happens depends on how they allocate that time to choice opportunities.

On the second level, we tried to describe the way in which organizations deal with flows of problems, solutions, and decision makers in garbage can situations. The central ideas were that a link between a problem and a solution depends heavily on the simultaneity of their "arrivals," that choices depend on the ways in which decision makers allocate time and energy to choice opportunities, that choice situations can easily become overloaded with problems, and that choices often can be made only after problems (and their sponsors) have moved to other decision arenas and thus typically are not resolved.

In our minds, the garbage can process is a very orderly process. It looks a little peculiar from some points of view, but it isn't terribly complex, and it isn't terribly jumbled. The good thing, I think, is that our perspective has opened up the possibility for people to say, "That's a garbage can process" – meaning it's an understandable process in which things are connected by their simultaneous presence more than by anything else, even though they look all mixed-up.

Does it concern you that people sometimes misunderstand your ideas?

In a real sense, there is no such thing as "my" ideas. Scholarship and notions of intellectual property are poor bedmates. I have often read things, both by critics and by enthusiasts, that seem to me to be based on a less than precise reading of what I have written; but once you publish something, you lose special access to it. The interpretations of others have as much legitimacy, if they can be defended, as yours do. In the best of all worlds, others will generate interpretations that are more interesting than the ones you had in your mind. In fact, a basic goal in writing is to choose words that can evoke beautiful and useful meanings that were not explicit in your own mind. Some very good writers resist that idea. They want to be their own interpreters. I think that is a mistake. The evocative ambiguities of language are sources of creativity.

You've said that the numbers of women coming into the workforce have changed the sexual character of organizations but that many people will pine for the simplicity of the old order.

Oh, sure. But I'm also committed to the notion that a lot of happiness comes from dealing with complexity. We may regret the passing of a simple life – a simple division of labor between the sexes or a work world without heterosexuality – but we wouldn't like it if that life were restored to us. I think the problems of wrestling with the issues of gender and sexuality have been, for my generation, very important. They've obviously been important to women, and, as a result, they've been important to men. Many of the beauties we now see in people have come out of that struggle, and the struggle is by no means over. Nor am I sure you would want to have it over. For example, life might be much less interesting if you actually took sex and sexuality out of management. It would be easier, and it might, in some ways, be less prone to atrocity – but it surely wouldn't be as much fun.

Are there any practitioners you admire?

I guess I admire all of them, even the scoundrels. Modern organized life poses problems that are not trivial; and anyone who is prepared to try to function meaningfully in a modern organization has my respect. Dealing with the simultaneous demands for self-respect, autonomy, control, coordination, order, freedom, imagination, discipline, and effectiveness that are essential parts of modern organizations seems to me worthy of respect, even when it is done in a less than perfect way. I know there is some sense in the observation that hierarchies and competition can make monsters out of ordinary, good people. They often do, and I think we have an obligation to recognize that problem. The business firm is one of the few contemporary institutions in which the arbitrary and gratuitous cruelty of the powerful in dealing with the weak is tolerated, even encouraged. Even so, most of the executives I've met seem to be trying to do as decent a job as they can. Of contemporary figures, probably the one I know best is John Reed, the longtime CEO of Citibank and recently the supervisor of reforms in the New York Stock Exchange. I admire John. I think he has a sense of what it means to be a human being.

I think practicing managers are sometimes less reflective than they might be. The rhetoric of management requires managers to pretend that things are clear, that everything is straightforward. Often they know that managerial life is more ambiguous and contradictory than that, but they can't say it. They see their role as relieving people of ambiguities and uncertainties. They need some way of speaking the rhetoric of managerial clarity while recognizing the reality of managerial confusion and ambivalence. In a recent paper, I argued that reading poetry helps, but I fear that is a small response to a large problem.

You are a poet yourself. Why do you write poetry?

I'm not sure why I write poetry. I'm not always sure that it is poetry. It has something to do with an affection for the beauties and grace of life, along with an affection for its efficiency or effectiveness. I think it is the beauty of rationality, as well as its utility, that attracts me to it. It is the beauty of emotions and feelings that makes them compelling for me. Poetry is a way of contemplating and augmenting those beauties, as well as the absurdities of their presence in the dustbins of life. Poetry celebrates the senses; it celebrates the feelings in ways that other things don't. It's also a place where you can play with the splendor, sound, and combinatorics of words. And you don't usually do that in other genres.

You began your courses by denying claims to your relevance. How did you end them?

It depended on the course; but quite often I would end with a quote from a French writer, Étienne Pivert de Senancour. Even in English, it provided a patina of culture to an otherwise midwestern sensibility: "Man is perishable. That may be; but let us perish resisting, and, if nothingness is what awaits us, let us not act in such a way that it would be a just fate."

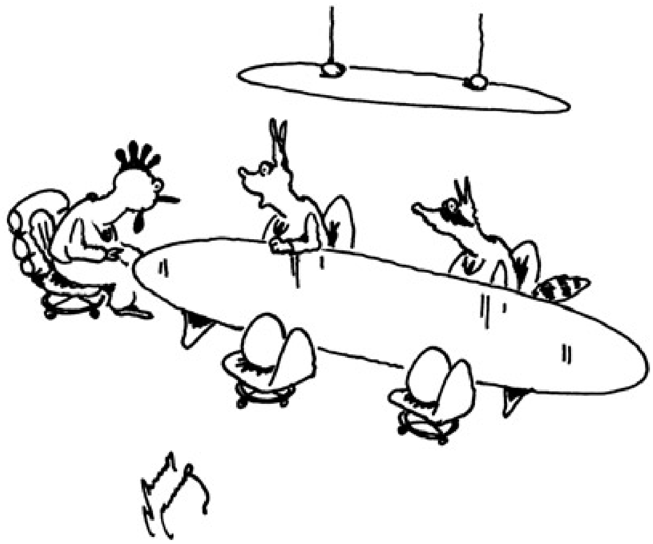
In the end, you know, we are very minor blips in a cosmic story. Aspirations for importance or significance are the illusions of the ignorant. All our hopes are minor, except to us; but some things matter because we choose to make them matter. What might make a difference to us, I think, is whether in our tiny roles, in our brief time, we inhabit life gently and add more beauty than ugliness.

Reprint R0610E
To order, see page 151.

Workplace Woes

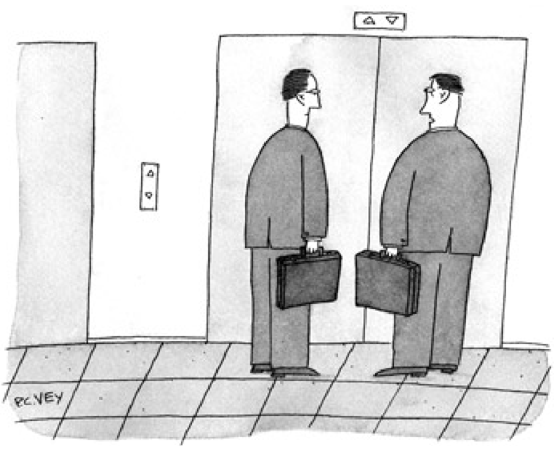
"Opportunity for advancement, feeling that one is respected by the company, believing that the company listens and responds, and sensing that the company treats one fairly can all satisfy esteem needs on the job.…There is much room for improvement in these areas."

Michael R. Cooper, Brian S. Morgan, Patricia Mortenson Foley, and Leon B. Kaplan
"Changing Employee Values: Deepening Discontent?"
Harvard Business Review
January–February 1979



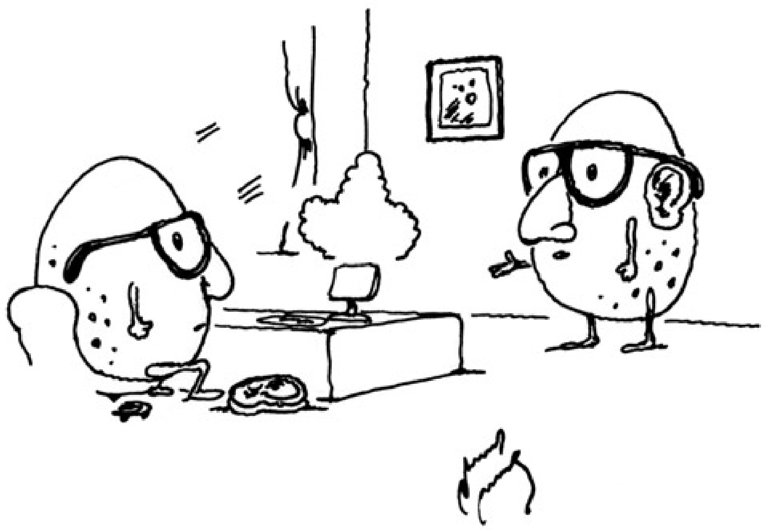
"They're accusing you of nepotism, sir."

MIKE LYNCH, SCOTT ARTHUR MASEAR, SAM RAY, AND P.C. VEY



"Sure it's career suicide, but you have to go home once in a while."

"Mr. Ashport has looked through his peephole, and he doesn't want to see you."



"The men don't feel that you're receptive to their needs, sir."

Companies in industries such as banking, software, and media make money by linking markets from different sides of their customer networks – audiences and advertisers, for example. The distinct character of these businesses demands a new approach to strategy.

STRATEGIES FOR TWO-SIDED MARKETS

by Thomas Eisenmann, Geoffrey Parker, and Marshall W. Van Alstyne

IF YOU LISTED the blockbuster products and services that have redefined the global business landscape, you'd find that many of them tie together two distinct groups of users in a network. Case in point: What has been the most important innovation in financial services since World War II? Answer: almost certainly the credit card, which links consumers and merchants. Newspapers, HMOs, and computer operating systems also serve what economists call *two-sided markets* or *two-sided networks.* Newspapers, for instance, join subscribers and advertisers; HMOs link patients to a web of health care


DAVID WEISMAN

providers, and vice versa; operating systems connect computer users and application developers.

Products and services that bring together groups of users in two-sided networks are *platforms*. They provide infrastructure and rules that facilitate the two groups' transactions and can take many guises. In some cases, platforms rely on physical products, as with consumers' credit cards and merchants' authorization terminals. In other cases, they are places providing services, like shopping malls or Web sites such as Monster and eBay.

Two-sided networks can be found in many industries, sharing the space with traditional product and service offerings. However, two-sided networks differ from other offerings in a fundamental way. In the traditional value chain, value moves from left to right: To the left of the company is cost; to the right is revenue. In two-sided networks, cost and revenue are both to the left and the right, because the platform has a distinct group of users on each side. The platform incurs costs in serving both groups and can collect revenue from each, although one side is often subsidized, as we'll see.

The two groups are attracted to each other–a phenomenon that economists call the network effect. With two-sided network effects, the platform's value to any given user largely depends on the number of users on the network's other side. Value grows as the platform matches demand from both sides. For example, video game developers will create games only for platforms that have a critical mass of players, because developers need a large enough customer base to recover their upfront programming costs. In turn, players favor platforms with a greater variety of games.

Because of network effects, successful platforms enjoy increasing returns to scale. Users will pay more for access to a bigger network, so margins improve as user bases grow. This sets network platforms apart from most traditional manufacturing and service businesses. In traditional businesses, growth beyond some point usually leads to diminishing returns: Acquiring new customers becomes harder as fewer people, not more, find the firm's value proposition appealing.

Fueled by the promise of increasing returns, competition in two-sided network industries can be fierce. Platform leaders can leverage their higher margins to invest more in R&D or lower their prices, driving out weaker rivals. As a result, mature two-sided network industries are usually dominated by a handful of large platforms, as is the case in the credit card industry. In extreme situations, such as PC operating systems, a single company emerges as the winner, taking almost all of the market.

Platforms serving two-sided networks are not a new phenomenon. Energy companies and automakers, for example, link drivers of gasoline-powered cars and refueling stations in a well-established network. However, thanks largely to technology, platforms have become more prevalent in recent years. New platforms have been created (Google, for example, links advertisers and Web searchers) and traditional businesses have been reconceived as platforms (for instance, retail electricity markets are evolving into platforms that match consumers with specific power producers, allowing them to express their preferences for cheaper coal or more costly renewable power). Yet for all the potential they've spotted, platform providers have struggled to establish and sustain their two-sided networks. Their failures are rooted in a common mistake. In creating strategies for two-sided networks, managers have typically relied on assumptions and paradigms that apply to products *without* network effects. As a result, they have made many decisions that are wholly inappropriate for the economics of their industries.

In the following pages, we draw on recent theoretical work[1] to guide executives in negotiating the challenges of two-sided networks. We begin by looking at the factors that senior managers must consider in designing their platforms' business models. The key decision here is pricing. As we've noted, providers of platforms for two-sided networks are able to draw revenue from both sides. In most cases, though, it makes sense to subsidize certain users. The crucial strategy question is, Which side should you subsidize, and for how long?

The next step is to figure out how to manage winner-take-all dynamics. Many two-sided network industries are

In traditional value chains, value moves from left to right: To the left of the company is cost; to the right is revenue. In two-sided networks, **COST AND REVENUE ARE BOTH TO THE LEFT AND THE RIGHT.**

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served almost entirely by a single platform. In some cases, just one company controls that platform, as with eBay's auctions or Microsoft's Windows. In other cases, multiple companies share the dominant platform, as with DVD and fax standards or, in real estate, a regional multiple listing service. (See the exhibit "Examples of Two-Sided Networks.") When a network industry is likely to be served by a single platform, aspiring providers must make a "bet the company" decision. Should they fight to gain proprietary control over the platform or share the spoils with rivals?

Platform providers that have vanquished their immediate rivals can't rest on their laurels. Indeed, they face a significant competitive threat from large companies operating in adjacent markets that have the ability to offer a multiplatform bundle. In our final section, we explore this challenge and offer prescriptions for firms that face it. As we'll see, moving first and getting big quickly aren't necessarily the right answers.

1 Challenge: Pricing the Platform

In competitive industries, prices are largely determined by the marginal cost of producing an extra unit, and margins tend to be thin. In industries with high barriers to entry, the price ceiling is set by customers' willingness to pay, and margins are more likely to be fat.

For two-sided networks, pricing is a more complicated affair. Platform providers have to choose a price for each side, factoring in the impact on the other side's growth and willingness to pay. Typically, two-sided networks have a "subsidy side," that is, a group of users who, when attracted in volume, are highly valued by the "money side," the other user group. Because the number of subsidy-side users is crucial to developing strong network effects, the platform provider sets prices for that side below the level it would charge if it viewed the subsidy side as

EXAMPLES OF TWO-SIDED NETWORKS

Insights about the economics of two-sided networks apply to a variety of industries. In cases where platforms – the products and sevices that bring together groups of users – are proprietary, there invariably is a clear subsidy side and a clear money side. For example, doctors – in exchange for access to a higher volume of patients – agree to rates below those they could command if they were not affiliated with an HMO.

Networks served by shared platforms tend to lack a subsidy side. It is hard for platform providers to recover subsidies if rivals share the fees collected from the network's money side. Real estate brokers avoid this free-rider problem by splitting the seller's fee 50/50. Subsidies also disappear when a shared platform's providers do not have pricing power on both sides of the network, as in the case of gasoline-powered transportation.

NETWORKED MARKET	SIDE 1	SIDE 2	PLATFORM PROVIDERS
			Rival Providers of Proprietary Platforms
PC operating systems	Consumers	Application developers*	Windows, Macintosh
Online recruitment	Job seekers*	Employers	Monster, CareerBuilder
Miami Yellow Pages	Consumers*	Advertisers	BellSouth, Verizon
Web search	Searchers*	Advertisers	Google, Yahoo
HMOs	Patients*	Doctors	Kaiser, WellPoint
Video games	Players*	Developers	PlayStation, Xbox
Minneapolis shopping malls	Shoppers*	Retailers	Mall of America, Southdale Center
			Rival Providers of Shared Platforms
Linux application servers	Enterprises	Application developers	IBM, Hewlett-Packard, Dell
Wi-Fi equipment	Laptop users	Access points	Linksys, Cisco, Dell
DVD	Consumers	Studios	Sony, Toshiba, Samsung
Phoenix Realtors Association	Home buyers*	Home sellers	100+ real estate brokerage firms
Gasoline-powered engines	Auto owners	Fueling stations	GM, Toyota, Exxon, Shell
Universal Product Code	Product suppliers	Retailers	NCR, Symbol Technologies

*Denotes network's subsidy side

For two-sided networks, pricing is a complicated affair. Platform providers have to choose a price for each side, factoring in the impact on **THE OTHER SIDE'S GROWTH AND WILLINGNESS TO PAY.**

an independent market. Conversely, the money side pays more than it would if it were viewed as an independent market. The goal is to generate "cross-side" network effects: If the platform provider can attract enough subsidy-side users, money-side users will pay handsomely to reach them. Cross-side network effects also work in the reverse direction. The presence of money-side users makes the platform more attractive to subsidy-side users, so they will sign up in greater numbers. The challenge for the platform provider with pricing power on both sides is to determine the degree to which one group should be encouraged to swell through subsidization and how much of a premium the other side will pay for the privilege of gaining access to it.

Pricing is further complicated by "same-side" network effects, which are created when drawing users to one side helps attract even more users to that side. For example, as more people buy PlayStation consoles, new users will find it easier to trade games with friends or find partners for online play. Economists call this snowballing pattern a positive same-side network effect. (Same-side network effects can also be negative. For a more detailed explanation of how network effects attract or deter users, see the sidebar, "The Dynamics of Two-Sided Networks.")

It is not always obvious which side – if either – the platform should subsidize and which it should charge. During the dot-com boom, for example, nascent B2B exchanges agonized over whether to charge fees to buyers, sellers, or both, and how charges should be split between fixed subscription payments and variable transaction fees. (See the sidebar "Similar Networks, Different Pricing" for an illustration of how two seemingly similar networks may require very different pricing strategies.)

To make the right decisions about pricing, executives of platform providers need to look closely at the following factors:

Ability to capture cross-side network effects. Your giveaway will be wasted if your network's subsidy side can transact with a rival platform provider's money side. That's what happened to Netscape, which subsidized its browser to individuals in the hope of selling Web servers to companies operating Web sites. However, Web site operators didn't have to buy Netscape's server in order to send pages to Netscape's big base of users; they could buy a rival's Web server instead.

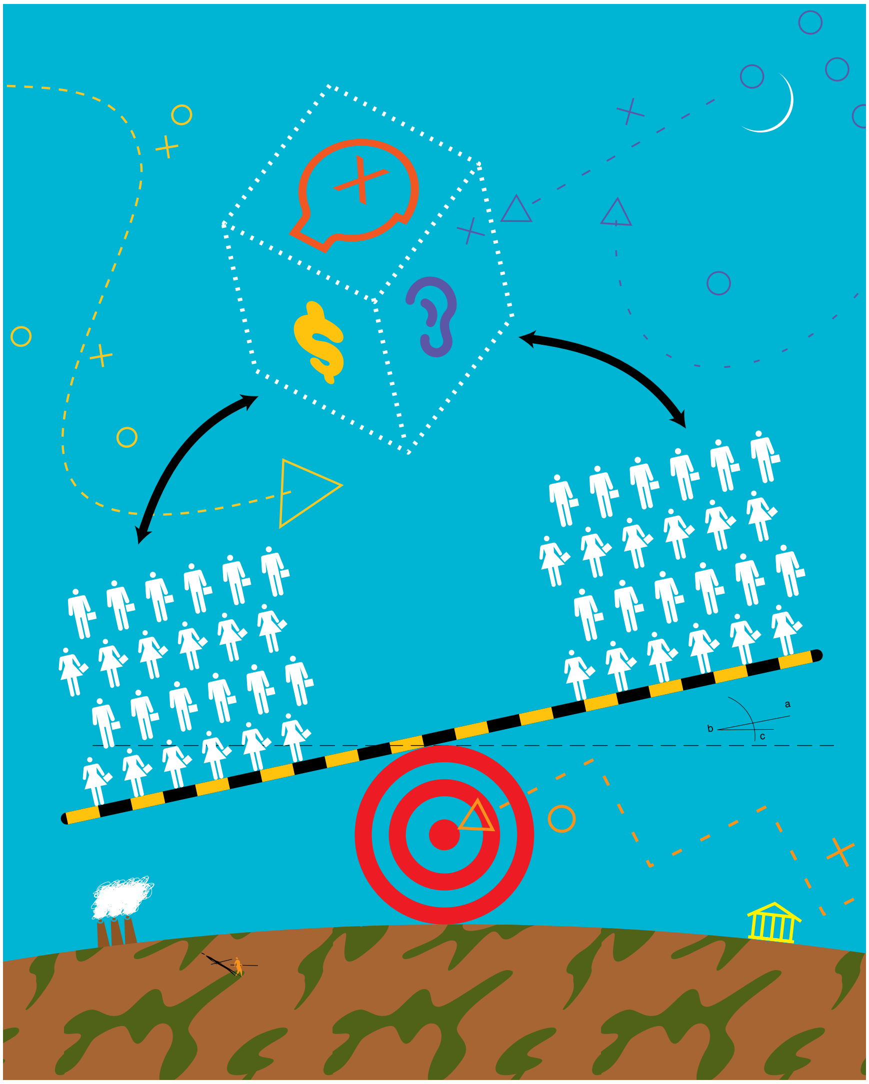
User sensitivity to price. Generally, it makes sense to subsidize the network's more price-sensitive side and to charge the side that increases its demand more strongly in response to the other side's growth. Adobe's Acrobat software follows this pricing rule. Acrobat presents any electronic document in Portable Document Format (PDF), a universal standard that can be printed or viewed exactly as it appeared in its original application. The PDF network consists of two sets of users – writers, who create documents, and readers, who view them – using different software. Readers are very price sensitive; they pay nothing for their software. If readers were charged even a small amount, Adobe Reader's 500-million-person user base would be much smaller. Writers, who greatly value this huge audience, pay a fee for their software. If Adobe reversed its approach, charging readers and subsidizing

THE DYNAMICS OF TWO-SIDED NETWORKS

Transactions in two-sided networks always entail a triangular set of relationships. Two user groups – the network's "sides" – interact with each other through one or more intermediaries called *platform providers.* A *platform* embodies an *architecture* – a design for products, services, and infrastructure facilitating network users' interactions – plus a set of *rules;* that is, the protocols, rights, and pricing terms that govern transactions. These platforms exhibit two types of network effects, which may be either positive or negative: A same-side effect, in which increasing the number of users on one side of the network makes it either more or less valuable to users on the same side; and a cross-side effect, in which increasing the number of users on one side of the network makes it either more or less valuable to the users on the other side. Cross-side network effects are typically positive, but they can be negative (TV viewers preferring fewer ads). Same-side network effects are often negative (sellers preferring fewer rivals in a B2B exchange), but they may be positive (Microsoft Xbox owners valuing the fact that they can play games with friends).

writers, its network would collapse. Writers are less price sensitive, so free software would not dramatically boost their numbers. More to the point, readers would not pay much for access to a bigger base of writers.

User sensitivity to quality. High sensitivity to quality also marks the side you should subsidize. This pricing prescription can be counterintuitive: Rather than charge the side that strongly *demands* quality, you charge the side that must *supply* quality. Such a strategy is evident in video games. To deliver compelling quality, game developers incur enormous fixed costs. To amortize these costs, they must be assured that the platform has many users. Hence the need for a consumer subsidy. Platform providers make sure game developers meet high quality standards by imposing strict licensing terms and charging a high royalty. This "tax" is not passed through to consumers: Developers charge the highest prices the market will bear, regardless of the royalty rate. However, the royalty helps weed out games of marginal quality. Once the "tax" is added, titles with poor sales prospects cannot generate enough contribution margin to cover their fixed costs, so they never get made in the first place.



Output costs. Pricing decisions are more straightforward when each new subsidy-side user costs the platform provider essentially nothing. This will be the case when the giveaway takes the form of a digital good such as a software program or a cheap service such as otherwise-idle computer time. However, when a giveaway product has appreciable unit costs, as with tangible goods, platform providers must be more careful. If a strong willingness to pay does not materialize on the money side, a giveaway strategy with high variable costs can quickly rack up large losses. FreePC learned this lesson in 1999 when it provided computers and Internet access at no cost to consumers who agreed to view Internet-delivered ads that could not be minimized or hidden. Unfortunately, few marketers were eager to target consumers who were so cost conscious. FreePC abandoned its offer after incurring $80 million in losses.

Same-side network effects. Surprisingly, sometimes it makes sense to deliberately exclude some users from the network. Platform providers normally welcome growth in the user base on either side, because it encourages growth on the other side. In addition to positive cross-side network effects, however, platform managers must assess the possibility of negative same-side network effects, which can be quite strong. In most markets, sellers would be happy to see fewer direct rivals; the same can be true for buyers when goods are scarce. For example, many auto parts manufacturers, concerned about downward pricing pressure, refused to participate in Covisint, a B2B exchange organized by auto manufacturers. Covisint stalled, as did many other B2B market makers that failed to recruit enough sellers. In the face of strongly negative same-side network effects, platform providers should consider granting exclusive rights to a single user in each transaction category – and extracting high rent for this concession. The platform manager then must make sure that sellers do not abuse their monopoly positions; otherwise, buyers will avoid the network. Online car-buying services like Autobytel, which forwards consumers' queries to a single dealer in any given geographic territory, have succeeded with this strategy. Autobytel has earned a modest profit over the past three years; more to the point, it survived the dot-com crash that extinguished many Internet market makers with flawed strategies.

Users' brand value. All users of two-sided networks are not created equal. The participation of "marquee users" can be especially important for attracting participants to the other side of the network. Marquee users may be exceptionally big buyers, like the U.S. government. Or they may be high profile suppliers, like anchor stores in malls. A platform provider can accelerate its growth if it can secure the exclusive participation of marquee users in the form of a commitment from them not to join rival platforms. For many years, this kind of exclusive arrangement was at the core of Visa's marketing campaigns ("…and they don't take American Express"). Of course, it can be expensive – especially for small platforms – to convince marquee users to forfeit opportunities in other networks. When the participation of a few large users is crucial for mobilizing a network, conflict over the division of value between platform providers and large users is common. Microsoft learned this when Electronic Arts (EA) – the largest developer of video games and thus a major potential money-side user of Microsoft's Xbox platform – refused to create online, multiplayer versions of its games for the Xbox Live service. EA objected to Microsoft's refusal to share subscription fees from Xbox Live, among other issues. After an 18-month stalemate, EA finally agreed to offer Xbox Live games. Terms of the agreement were not made public, but at the time, Microsoft announced that it would halt the in-house development of new games that would compete with EA's flagship sports titles.

Failing to recognize that two-sided network pricing follows different rules than conventional businesses can sink even the most attractive platforms. Apple provides a cautionary tale about misapplied pricing logic. Apple's well-regarded Macintosh operating system has always commanded a price premium from consumers. When it launched the Mac, Apple also tried to extract rent from the other side of its network, charging third-party developers $10,000 for the software development kits (SDKs)

SIMILAR NETWORKS, DIFFERENT PRICING

On first inspection, PC and video game networks look similar. In both cases, end users on one side wishing to link to software or games on the other side buy a platform consisting of an operating system (OS) bundled with hardware – a PC or a game console. The two businesses exhibit similarly positive cross-side network effects: End users favor platforms that offer a wide variety of complements. Developers favor platforms with more end users because this improves the odds that they will recover the fixed, upfront costs of creating complements.

Notwithstanding these similarities, the PC and game industries use very different pricing models. In video games, end users are subsidized. Platform providers like Sony PlayStation and Microsoft Xbox historically have priced consoles at or below cost. Game developers are on the network's money side; they pay a royalty to console manufacturers of as much as 20% of a game's retail price. In the PC industry, the money side and subsidy side are reversed. End users are the money side, paying well above cost for the platform's essential element – its OS – which comes bundled with PCs offered by OEMs like Gateway. Application developers are the subsidy side. They pay no royalties and receive free software development kits from the OS vendors.

Why do these similar two-sided networks have fundamentally different pricing structures? Video game consoles users – typically teenagers – are both far more price sensitive and quality conscious than typical PC users. On average, each console owner buys just eight games, which cost about $50 apiece. Over the two- to three-year life of a console, these precious titles are consumed sequentially in intense bursts; gamers spend a great deal of time – 40 to 100 hours – with each title.

To deliver compelling quality, game developers incur enormous fixed costs. To amortize these costs, they must be assured that the console has many users: Hence the need for a consumer subsidy. Console providers police quality by imposing strict licensing terms and charging a high royalty. This "tax," absorbed by the developers, helps weed out games of marginal quality. Developers cannot afford to offer titles with weak sales prospects, once the tax is added to their price.

By contrast, PCs are often purchased for work and are otherwise more likely viewed as household necessities than game consoles are, so price sensitivity is lower. Over their lives, PCs accumulate scores of applications, ranging from the indispensable (such as word processing) to the disposable (for example, some casual games). Accordingly, we observe a huge range of price and quality levels for applications.

It's true that both PC users and gamers value variety and quality and that developers in both networks value the ability to reach a large installed base. However, gamers' need for quality seems to be stronger, as does game developers' need for large numbers of consumers.

required to create Macintosh applications. By contrast, Microsoft gave Windows SDKs away for free. Tellingly, by the time of Microsoft's antitrust trial, Windows had six times as many applications as Macintosh. This made Windows far more attractive to consumers, despite its functional shortcomings.

2 Challenge: Winner-Take-All Dynamics

The prospect of increasing returns to scale in network industries can lead to winner-take-all battles, so an aspiring platform provider must consider whether to share its platform with rivals or fight to the death. Companies sometimes get this decision wrong, as with Sony's futile battle to establish its Betamax videocassette standard.

Coping with platform competition is a two-step process. First, executives must determine whether their networked market is destined to be served by a single platform. When this is the case, the second step–deciding whether to fight or share the platform – is a bet-the-company decision. The stakes are much higher when a networked market has room for fewer rival platforms.

Turning to the first step, a networked market is likely to be served by a single platform when the following three conditions apply:

• **Multi-homing costs are high for at least one user side.** "Homing" costs comprise all the expenses network users incur – including adoption, operation, and the opportunity cost of time–in order to establish and maintain platform affiliation. When users make a "home" on multiple platforms, they increase their outlays accordingly. For example, the vast majority of PC users rely on a single operating system – almost always Windows – because using multiple operating systems is expensive in terms of the additional hardware, software, and training required. Similarly, distance limits the number of shopping malls that consumers can visit at any one time, which in turn limits the number of malls. When multi-homing costs are high, users need a good reason to affiliate with multiple platforms.

• **Network effects are positive and strong–at least for the users on the side of the network with high multi-homing costs.** When cross-side network effects are positive and strong, those network users will tend to converge on one platform. A small-scale platform will be of little interest to users unless it is the only way to reach certain users on the other side. The odds of a single platform prevailing also increase when same-side network effects are positive: for example, when users of a software program need to share files with one another.

• **Neither side's users have a strong preference for special features.** If certain users have unique needs, then smaller, differentiated platforms can focus on those needs and carve out niches in a larger rival's shadow. American Express, for example, earns high margins despite having issued only 5% as many credit cards as Visa. American Express cards have no preset spending limit – a valuable feature for business travelers, made possible because cardholders must pay their full balance every month. Visa cannot match this feature, because the loans it extends to cardholders put an upper limit on their spending. In cases where special features are not important, however, users will tend to converge on a single platform.

The DVD industry meets these three conditions. First, multi-homing costs are high for consumers because it would be expensive to buy multiple players. Likewise, multi-homing costs are high for studios: Having to provide the same content in multiple incompatible formats would increase inventories and distribution costs. Second, cross-side network effects are strong for both sides of the network. Most consumers value access to a wide variety of titles, and studios realize scale economies when they can sell to more consumers. Third, opportunities for technical differentiation are modest, because DVD players connect to TV sets, which are standardized in ways that intrinsically limit DVD picture and sound quality.

For these reasons, the DVD market was bound to be served by a single platform. Potential platform providers anticipated this outcome and faced a choice: They could fight for proprietary control of the platform or pool their technologies. Industry participants chose the latter approach, jointly creating the DVD format in 1995 and avoiding a replay of the VHS-Betamax standards battle.

Why share a network when proprietary control promises monopoly profits once rivals are vanquished? The answer seems clear enough if senior managers believe that their company's platform is not likely to prevail. However, even those firms that have a fighting chance of gaining proprietary control stand to realize benefits from sharing. First, the total market size will be greater with a shared platform. During a battle for dominance in a two-sided network, some users will delay adoption, fearing that they will be stranded with obsolete investments – like a Betamax VCR – if they back the loser. Second, since the stakes are so high in battles for network dominance, firms spend enormous amounts on upfront marketing. Rivalry tends to be less intense with a shared platform, reducing marketing outlays.

Winning the battle. To fight successfully, you will need, at a minimum, cost or differentiation advantages. Three other assets are important in establishing proprietary control: First, platform providers gain an edge when they have preexisting relationships with prospective users – often in related businesses. Adobe, for example, leveraged its user base for PostScript printing products when launching PDF. Second, high expectations generate momentum in platform wars, so a reputation for past prowess helps a great deal. Having vanquished rival PC operating systems, Microsoft is feared and respected as a ruthless and competent rival. Third, in a war of attrition, deep pockets matter. Again, just ask Microsoft!

First-mover advantages can also be significant in platform battles, but they are not always decisive. In fact, when the market evolves slowly, late mover advantages may be more salient. Late movers may, for example, avoid the pioneer's positioning errors, be better placed to incorporate the latest technology into product designs, or be able to reverse engineer pioneers' products and beat them on cost. Google, which lagged Web-search pioneers by several years, avoided portals' clutter in favor of a simple, fast-loading home page. It also copied and then improved on Overture's paid-listing model for generating revenue from searches.

In a battle for platform control, first and late movers alike will feel strong pressure to amass users as quickly as possible. In most cases, this urgency is appropriate. Positive word-of-mouth favors the early mover. But racing to acquire users can be a mistake under two circumstances. First, executives must ask whether their business is readily scalable. For example, platforms that must support complex customer-service interactions–like stop-loss orders or margin trades at an online brokerage firm – typically require skilled professionals. The need to recruit and train such personnel can put the brakes on rapid growth. Second, due to their explosive growth potential, platform-mediated networks are prone to boom or bust valuation cycles. When they launch cash-draining "get big fast" strategies, therefore, top managers need to be sure that funding will be forthcoming should capital-market sentiment turn negative.

3 Challenge: The Threat of Envelopment

You can do a great job addressing pricing and winner-take-all challenges and establish a successful new platform yet still face great danger. Why? Your platform may be "enveloped" by an adjacent platform provider that enters your market. Platforms frequently have overlapping user bases. Leveraging these shared relationships can make it easy and attractive for one platform provider to swallow the network of another. The real damage comes when your new rival offers your platform's functionality as part of a multiplatform bundle. Such bundling hurts the stand-alone platform provider when its money side perceives that a rival's bundle delivers more functionality at a lower total price. The stand-alone platform provider cannot respond to this value proposition because it cannot afford to cut the price on its money side and it cannot assemble a comparable bundle.

Networked markets–especially those in which technology is evolving rapidly–are rich with envelopment opportunities that can blur market boundaries. This blurring is called "convergence." For example, mobile phones now incorporate the functionality of music and video players, PCs, and even credit cards. Likewise, eBay – having acquired PayPal and the voice-over-Internet protocol (VoIP) start-up Skype, as well as equity in Craigslist – is on a collision course with Google, which also offers a payment service (Google Checkout), VoIP (Google Talk), and a listing service (Google Base).

In many cases, a stand-alone business facing envelopment has little choice but to sell out to the attacker or exit the field. Some, however, manage to survive. RealNetworks, the pioneer of streaming media software, is – at least so far – a case in point.

Real's original business model was ideally suited to the needs of its two-sided network: Consumers downloaded its streaming media player for free, and content companies paid for its server software. As a result, the company quickly dominated the new market and earned modest profits in 1999 and 2000. But as early as 1998, Real's streaming media franchise was under attack from Microsoft. Like Real, Microsoft freely supplied its Windows Media Player (WMP) to consumers. But Microsoft also bundled its streaming software at no additional cost as a standard feature of its NT Server–a multipurpose operating system that also incorporated file, print, e-mail, and Web servers, among other functions.

Since content companies – Real's money side – needed a multipurpose server anyway, they could buy NT and receive a "free" streaming media server. As content companies embraced this attractive proposition, consumers switched with them, because Microsoft's streaming media servers worked only with its own media players, and vice versa. By 2003, 42% of Internet users in North America identified WMP as their primary media player, compared with 19% for Real's player.

Microsoft has not been the only threat. Real's Rhapsody subscription music service is now threatened with envelopment by Yahoo and ultimately by Apple. In 2005, Yahoo introduced a subscription music service–including downloads to portable music players – for $5 per month. Yahoo could afford to price aggressively, because bundling subscription music into its portal would increase user retention rates and, through cross-marketing, boost revenue from its other services. Likewise, Apple might choose to offer a subscription version of iTunes, drawing on the very lucrative iPod – its money side – to subsidize an envelopment attack. Real cannot match it rivals' bundles because it does not own a portal or sell an MP3 player.

But Real is not without options. Its defense against Microsoft and, more recently, Yahoo and Apple shows what a focused firm can do to survive envelopment.

During the dot-com boom, nascent B2B exchanges agonized over whether to **CHARGE FEES TO BUYERS, SELLERS, OR BOTH.**

Change business models. Real's response to Microsoft's envelopment attack was to switch its money side. Ceding the streaming media business, Real leveraged existing relationships with consumers and music companies to launch Rhapsody in 2003, charging $10 per month for unlimited streaming to any PC from a library of a half-million songs. Real now profited from consumers, rather than subsidizing them. Another common way for specialists like Real to reinvigorate their business models is to offer services as a systems integrator – helping enterprises knit together diverse systems and technologies. Indeed, Real was doing precisely that for a number of big music companies even before it launched Rhapsody. And it's no accident that IBM – the dominant provider of computing platforms through the mid-1980s – has more recently focused on systems integration. Facilitating transactions across a two-sided network requires platform providers to coordinate users' activities. Hence, managing a platform builds system integration skills that can be exploited.

Find a "bigger brother." When bullied on the playground, a little guy needs a big friend. Real has found allies through partnerships with cable TV system operators and cellular phone companies. Subscription music – which requires a broadband connection – makes cable modem service stickier: Once consumers commit to a music service, they face switching costs. Changing vendors would force them to configure new music players and recreate playlists. Real also bundles its Rhapsody Internet radio product with Sprint's wireless phone service and streaming video with Cingular's service. Cellular phone companies are attractive allies for Real, because they can mount their own envelopment attacks if Apple ever enters the subscription music market. Cellular carriers can afford to subsidize digital music playback on their phones, since doing so would be likely to reduce cell phone churn rates. That would present a big threat to Apple's money side.

Sue. Firms facing envelopment are wise to consider legal remedies, because antitrust law for two-sided networks is still in dispute. Antitrust law was conceived to constrain the behavior of traditional manufacturing firms and does not fully reflect the economic imperatives of platform-mediated networks. For this reason, dominant platform providers that offer bundles or pursue penetration pricing run the risk of being charged with illegal tying or predation. Exploiting this opportunity, Real brought Microsoft to antitrust court and then in 2005 received a $760 million payment from Microsoft to end the lawsuit. Sun Microsystems and Time Warner – Netscape's current owner – reaped similar bounties after they challenged Microsoft's anticompetitive behavior in court.

The threat of envelopment means that vigilance is crucial for a focused platform provider. Formulating strategy for platform-mediated networks is like playing three-dimensional chess: When market boundaries blur, envelopment attacks can come from any direction. However, focused firms are not without advantages when competing with large, diversified companies. Big firms can be slow to recognize envelopment opportunities and even slower to mobilize resources to exploit them. Also, envelopment requires cross-business-unit cooperation, a significant barrier in many diversified companies. Sony, for example, has struggled to coordinate strategy across its consumer electronics, video game, movie, and music businesses. Once the industry's trailblazer with products like the Walkman, Sony has seen Apple usurp this role. Mistakes like this on the part of established companies are precisely why former upstarts like Google, eBay, and Yahoo have grown into giants.

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Despite the ubiquity of network industries and the attractions of owning a successful platform, the strategic implications of two-sided networks have gone largely unexplored. In the past, this lack of understanding was less problematic because executives usually had the luxury of formulating strategies for two-sided networks through trial and error. Markets today are less forgiving. Many opportunities for platform creation arise in high-tech sectors with short product life cycles. Opportunities also abound in traditional industries reconceived as two-sided networks. And, thanks to the Internet, firms have easy access to both sides of new markets. In this environment, if you draw attention to a platform opportunity and don't get it right the first time, someone else will. Thinking carefully through the strategic issues we've outlined here will give you a head start.

1. See Geoffrey Parker and Marshall W. Van Alstyne, "Two-Sided Networks: A Theory of Information Product Design," *Management Science* (2005) and Jean-Charles Rochet and Jean Tirole, "Platform Competition in Two-Sided Markets," *Journal of the European Economic Association* (2003).

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When established companies try to spawn new businesses, cultural conflict usually dooms the effort. They can succeed by finding the right balance in setting strategy, operating the business, and designing the organization.

MEETING THE CHALLENGE OF CORPORATE Entrepreneurship

by David A. Garvin and Lynne C. Levesque

FOR LARGE COMPANIES, creating new businesses is the challenge of the day. After years of downsizing and cost cutting, corporations have realized that they can't shrink their way to success. They've also found that they can't grow rapidly by tweaking existing offerings, taking over rivals, or moving into developing countries. Because of maturing technologies and aging product portfolios, a new imperative is clear: Companies must create, develop, and sustain innovative new businesses. They must become Janus-like, looking in two directions at once, with one face focused on the old and the other seeking out the new.

Corporate entrepreneurship is, however, a risky proposition. New ventures set up by existing companies face innumerable barriers, and research shows that most of them fail. Emerging businesses seldom mesh smoothly with well-established systems, processes, and cultures. Yet success requires a blend of old and new organizational traits, a subtle mix of characteristics achieved through what we call balancing acts. Unless companies keep those opposing forces in equilibrium, emerging businesses will flounder.

In this article, we first describe the management issues facing companies that pursue new-business creation, as

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well as the usual problematic responses. We then explore a number of the most critical balancing acts companies must perform, the choices they entail, and the risks corporations face when they fail to get the balance right. We conclude with a look at the hybrid systems that are often needed to support these balancing acts, focusing in particular on IBM's Emerging Business Opportunity management system because of its success in mastering several of them simultaneously.

The Two-Cultures Problem

It's no secret that corporations are designed to ensure the success of their established businesses. Existing operations, after all, account for the bulk of their revenues. Finely tuned organizational systems support current customers and technologies. The operating environments are predictable, and executives' goals are stability, efficiency, and making the most of incremental growth.

New businesses are quite different, with cultures all their own. Many are born on the periphery of companies' established divisions; at times, they exist in the spaces in between. Their financial and operating models are seldom the same as those of existing businesses. In fact, most new business models aren't fully defined in the beginning; they become clearer as executives try new strategies, develop new applications, and pursue new customers. Because of the high levels of uncertainty associated with new ventures, they need adaptive organizational environments to succeed.

The distinctive features of new businesses present three challenges. First, emerging businesses usually lack hard data. That's particularly true when they offer cutting-edge products or when their technologies aren't widely diffused in the marketplace. The difficulty, as one technology strategist told us, is that "it's hard to find marketplace insights for markets that don't exist." Financial forecasts are also undependable. Large errors are common, a fact that led one printing and publishing company to call its early-stage financial numbers SWAGs, short for "scientific wild-assed guesses."

Second, new businesses require innovation, innovation requires fresh ideas, and fresh ideas require mavericks. We've heard too many stories of leaders trapped by conventional thinking: Microsoft's wariness of open-source software, Polaroid's grudging move into digital cameras, GM's and Ford's reluctance to embrace hybrid cars, media companies' distaste for blogs, and so on. Some degree of unconventional thinking is essential for new businesses to take hold, but many radical ideas are foolish or unfounded. Most mavericks, sadly, can't tell the difference between good and bad ideas. They persist in defending pet themes, demand repeated hearings, and refuse to take no for an answer. The dilemma, says Home Depot CEO Robert Nardelli, is that "there's only a fine line between entrepreneurship and insubordination."

The third challenge is the poor fit between new businesses and old systems. That's particularly true of systems for budgeting and for human resource management. Corporate budgeting systems favor established businesses because incremental dollars usually provide higher financial returns when invested in known markets rather than unknown ones. New businesses are therefore difficult to finance for long periods, and in times of austerity, they are the first to face funding cuts. In a similar spirit, companies design HR systems to develop executives whose operational skills match the needs of mature businesses – not the strategic, conceptual, and entrepreneurial skills that start-ups require. In both cases, the answer isn't to proceed haphazardly but, as we shall explain later in this article, to modify systems so they are less biased against new businesses.

The dilemma, says Home Depot CEO Robert Nardelli, is that "there's only a fine line between entrepreneurship and insubordination."

Why Traditional Responses Fail

Faced with these challenges, corporations respond with one of two approaches. Some disperse the task of new-business creation, assigning it to existing divisions, while others centralize it, lodging it in special-purpose divisions or venture groups. Both approaches have delivered mixed results.

Diffused responsibility fizzles out. In an organization where every executive shares responsibility for new-business creation, the CEO expects employees to be as committed to turning new ideas into new businesses

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as they are to expanding mature ones. Some companies impose aggressive targets to motivate managers – at 3M, the poster child for this approach, 30% of sales must come from products developed in the last four years – and they link the achievement of those targets to every employee's compensation.

The main drawback of this approach is that it's easy for traditional businesses to dominate new ones. Veteran employees often choose to ignore incentives and suppress new ideas, especially those that render existing skills obsolete or require new ways of working. RR Donnelley, the U.S. printing giant, failed in its first attempt to make digital printing popular, largely because of internal resistance. Its sales managers were accustomed to selling long-term contracts to customers' purchasing managers on the basis of personal relationships and the price per page. They were uncomfortable selling solutions to senior managers, which the digital business demanded, and wouldn't share expertise with the digital-printing division or send orders its way. Since they were able to make their numbers the old-fashioned way, no one could point a finger at them. As one Donnelley executive observed, resistance to the new business often took the form of the "Donnelley nod"–an apparently supportive shaking of the head but, in truth, a signal of lack of commitment.

For related reasons, a new business that doesn't fit with the company's existing product lines or markets frequently has trouble finding an organizational home. Few general managers are willing to assume responsibility for projects they privately view as diversions. In some cases–as with Home Depot's Floor Store, which the retailer launched in July 2000 to sell flooring and carpeting products – the fledgling business is shunted from district manager to district manager and from division to division, which doesn't allow it to establish a foothold. The new venture fails to attract influential sponsors and so won't receive sufficient resources or attention to survive.

In other cases, the pressure to create new businesses becomes so dominating that it overwhelms the organization. A cowboy culture results; in its wake comes a loss of financial and operating discipline. The classic example of this problem was Enron in the late 1990s, which rewarded executives for their ability to launch new trading businesses in the mold of its successful natural gas business. The result: an outpouring of trading businesses – coal, water, pulp and paper, broadband, and (later) media services, freight services, data storage, and semiconductors – that made less and less strategic and financial sense. Very few of Enron's second- and third-generation businesses became profitable, which paved the way for the company's downfall.

Centralization isolates. Concerned by their poor track records of new-business creation, many companies decided that the wisest course was to completely separate new ventures from existing divisions. In the 1970s and 1980s, these efforts took the form of internal corporate venture divisions, special-purpose groups that companies charged with launching and nurturing the lion's share of new businesses. In the 1990s, many businesses launched corporate venture capital groups that mimicked the operation of venture capitalists by providing new businesses with arm's-length funding, disciplined oversight, and advice. Boeing, DuPont, and Exxon were among those that established corporate venture divisions, while companies like Intel, Lucent, and Xerox set up corporate venture capital groups.

Both approaches focus on nurturing new businesses in their formative stages. However, the challenges come later, when it's necessary to integrate fledgling businesses with the mainstream. Because centralized new-venture groups magnify the clash between the old and the new cultures, suspicion and fractious relationships are common, as are power struggles between new-business managers and division leaders. Over time, integration becomes more problematic, and companies must either spin off the new businesses or shut them down. The result, as Norman D. Fast wrote in *The Rise and Fall of Corporate New Venture Divisions,* is that centralized groups typically have "a long-term mission but a short-term life span." In fact, corporate venture groups in the United States last, on average, only between four and five years, according to Paul Gompers and Josh Lerner in *The Venture Capital Cycle*.

Balancing Acts

Companies should avoid either-or approaches to corporate entrepreneurship because they place the old and new cultures in conflict with each other. A new approach is called for, one that melds those cultures while avoiding extreme behavior. Lean too much in one direction, and the process drifts out of equilibrium; get the balance right, and corporate entrepreneurship will flourish. With apologies to F. Scott Fitzgerald, the test of a first-rate company may well be its ability to hold two opposing ideas at the same time and still function.

Corporations must perform balancing acts in three areas: strategy, operations, and organization.

Develop strategy by trial and error. New businesses operate in highly ambiguous environments. Ambiguity isn't the same as uncertainty, as executives are realizing (see, for instance, Nitin Nohria and Thomas A. Stewart, "Risk, Uncertainty, and Doubt," HBR February 2006). In uncertain environments, the options are reasonably clear, and the likelihood of different outcomes can be assessed. In ambiguous environments, the full range of alternatives and outcomes isn't known, leading to many possible directions and evolutionary paths. The high levels of ambiguity in new businesses imply that corporate entrepreneurs won't get it right the first time. Because hard numbers are difficult to come by and strategic options are difficult to identify, past practices, too, offer little guidance. Experimentation is essential. Managers must begin with hypotheses about what will work and what won't; then, they should search for ways of validating or invalidating their preconceptions, knowing that first-cut strategies will change over time.

When taken to extremes, however, this approach can be counterproductive. Countless studies have shown that technologies in search of a market rarely succeed. In fact, many new businesses struggle for years because top management, hoping that one more trial will lead to success, is unwilling to close them down.

Overcoming these problems requires a balancing act that combines open-minded opportunism ("Let's try it and see how customers react; we'll make changes based on what we hear and keep at it until we get it right") with disciplined planning ("Let's think systematically about the market and the proposed technology, formulate a hypothesis about customer needs, design experiments to test our hypothesis, and repeat the process until we're sure we've got the right product, technology, and business model"). Here are five ways in which executives can couple trial and error with rigor and discipline.

Narrow the playing field. Unguided searching is an inefficient way of finding new ideas. Companies need some criteria to narrow the range of potential choices and to judge whether a technology or market presents a desirable opportunity. The goal isn't to be definitive but to scope out certain areas of promise. Smart companies identify sectors that may be worth pursuing, first by applying screens based on the attractiveness of markets and technologies, and later by combining them with executives' best judgments about promising industry trends. GE evaluates new business ideas with an eye toward increasing the scope of its operations: All new businesses must take the company into new territory – a new line of business, region or country, or customer base – and also have the potential to generate at least $100 million in incremental sales in three years' time.

The most effective companies combine brainstorming, usually at the divisional level, with corporate criteria for reducing the list of ideas. In the early 2000s, Henkel, the German consumer and commercial products company, asked employees what consumer needs they had identified when using its laundry and home care products and if those needs suggested any new business ideas. Within 48 hours, top management received more than 1,000 proposals by e-mail. It then set up a ten-person "invent team," which rated each idea on a ten-point scale based on assessments of market size, whether Henkel had the necessary technical knowledge in-house, whether the proposal fit the brand, and whether a launch was feasible within a year. Over one weekend, the team managed to shrink the list to just 50 high-potential ideas.

Learn from small samples, closely observed. In ambiguous environments, the deepest learning comes from interaction with a small number of customers, not from surveys of many potential users. The latter have great statistical power but seldom provide the formative insights that executives gain from ethnographic approaches. That's the tack that P&G has taken under CEO A.G. Lafley, who insists that managers stop worrying about focus groups and spend time in consumers' homes, watching them cook and clean, before launching new products. In 2000, the typical P&G marketer spent less than four hours a month with consumers; by 2004, that number had tripled. Intuit, which makes tax-preparation software, relies on a process it calls "Follow Me Home." The company sends employees to watch customers carry out accounting and tax-preparation tasks in their homes and offices, which helps uncover pain points that can lead to new opportunities. Starbucks periodically takes product development teams on "inspiration" trips to meet customers on their home turf. For example, in early 2006, one team visited many Starbucks outlets and other restaurants in Paris, London, and Düsseldorf, Germany, to get a better sense of local cultures, behaviors, and trends. Nokia used the same approach in China, India, and Nepal, to study how people with low incomes would use cellular telephones. Based on the research, the company's developers created an icon-based menu – consisting of pictures rather than letters and numbers – that allows semiliterate villagers to use cell phones.

Use prototypes to test business models. Without some tangible basis for discussion, most people find it difficult to evaluate new ideas. Prototypes are invaluable: They give life to emerging products and provide a basis for informed responses from potential users. They should be

> Existing companies will enjoy an advantage in new-business creation only if they build on their strengths; otherwise, they will be no better off than start-ups that must begin with a clean slate.

detailed enough for users to evaluate form, content, and desirability, and companies should couple them with forums for consumer debriefings, discussions, and reviews. Prototypes are particularly useful for testing assumptions about customer needs. UPS experimented with a grocery delivery business partly to determine whether it could tie that in with residential delivery of other goods such as consumer electronics products. Because the prototype locations showed that even loyal users ordered groceries only once every ten to 14 days–a frequency that didn't justify a larger residential delivery infrastructure – UPS quickly dropped the idea.

Track progress through nonfinancial measures. Trial-and-error strategy formulation shouldn't be entirely unguided–that would make it little more than guesswork. Concrete goals are essential, but in ambiguous environments, goals must take the form of project-based milestones, such as "We will conduct five customer trials in these two industries in the next three months." At times, companies can assess new businesses' progress by using leading indicators such as publicity or incorporation of product specifications into industry standards. The targets must be measurable: "We will receive three positive mentions in trade journals and three favorable comments from industry analysts in the next two months."

Suspend judgment, but not indefinitely. The biggest risk when companies develop strategies through trial and error is that the process will continue for too long. Failures are common in new-business creation, and corporations need to be clear on when–and how–they will decide to pull the plug. New venture teams and top management must agree about the standards that will be applied to a project, the length of time it will be allowed to continue, and who decides whether to shut it down. There are many criteria for making the call–time elapsed, dollars spent, pace of technological progress, customer enthusiasm, confirmed orders, financial performance, competitors' success, and so on–but most critical is senior managers' willingness to make timely go or no-go decisions. Kodak's corporate entrepreneurship program failed in the 1990s largely because of senior managers' unwillingness to close several poorly performing new ventures, such as a copier services business, a floppy disks business, and a bioscience and pharmaceuticals business. That wasted resources and destroyed the program's credibility.

Operate with something old, something new. Existing companies will enjoy an advantage in new-business creation only if they build on their strengths; otherwise, they will be no better off than start-ups that must begin with a clean slate. Novelty for novelty's sake is seldom a source of competitive advantage. At the same time, if new businesses make operating choices only by drawing on their parents' strengths, reusability and efficiency become the driving values, and time-tested but inappropriate people, processes, and systems will be the result. How do executives avoid these unhealthy extremes?

In most cases, the best combination of the old and the new entails a blend of experience and invention. Selling to preexisting customers, staffing with seasoned personnel, drawing on established distribution channels, and working with proven processes will improve the odds of creating profitable and sustainable operations. Differentiation, however, requires fresh thinking and innovative approaches to operations. To get the best of both worlds, companies should do the following:

Staff new ventures with "mature turks." Companies often put young, hard-charging mavericks in command of start-up ventures. Frequently, those executives are new to the company or haven't grown up in the business. Such people, runs the argument, are less constrained by companies' current ways of working. Unfortunately, they're also less likely to know which corporate resources are available or have the credibility to draw upon them. A better strategy, common at GE and 3M, is to put "mature turks" – managers who are already successful at running larger businesses but are also known for their willingness to challenge convention – in charge of new businesses. An observer described one such executive as "a 60-year-old with beads and a ponytail – a maverick but a through-and-through Xerox person with the credibility to get new businesses off the ground."

At times, top management must handpick leaders from a list of high-potential executives; at other times, it can find candidates by looking at annual personnel evaluations and identifying managers with high scores on entrepreneurship, innovativeness, and risk taking. In 1999, when L.L. Bean launched Freeport Studio, a brand of women's clothing, it selected employees for the new business from within the organization partly on the basis of how they answered one question: "How did you feel when you took a risk?"

Change veterans' thinking. Employees will seldom embrace a new business unless companies presell them the idea. Smart companies place division chiefs and group heads on the oversight committees or boards of promising start-up efforts. They expect familiarity to lead to understanding, and understanding to breed acceptance. Companies can also foster shared understanding by getting executives to envisage the future through exercises such as scenario planning. For years, Bill Gates took Microsoft's senior team on weeklong retreats, where discussion revolved around emerging technological trends and competitive threats. To reinforce the message, companies may sometimes need to alter incentives and promotion criteria, particularly when existing values are deeply rooted in organizations.

Develop some capabilities, but acquire others. Leaders of new businesses often feel that they must build every capability from the ground up. Not all skills are best developed from scratch, though; some can be purchased. The make-or-buy decision hinges on the availability of skills in the open market, the time needed for internal development, and the ease with which outside capabilities can be integrated into the organization. UPS preferred to make acquisitions when it needed specialized skills, as it did in 2000 with its purchase of Livingston, a Canadian logistics firm specializing in the unique documentation and technology systems required for the delivery of health care products, and its sister company Livingston Healthcare Services, in the United States. It also acquired companies when they had built relationships that would take UPS years to cultivate; that's why, in 2004, UPS bought Menlo, a freight forwarder that had 20-year ties with both customers and representatives of multimodal transportation services. In contrast, internal development was UPS's approach to developing mission-critical, customer-facing capabilities such as tracking and shipping systems, especially when the skills touched many parts of the business, involved legacy systems, and presented integration challenges.

Share responsibility for operating decisions. New businesses prefer complete control over their destinies. However, it's easy to lose perspective. Stanford's Robert Burgelman, in *Strategy Is Destiny,* quotes the head of one of Intel's start-up businesses as saying: "We created a very entrepreneurial culture that prided itself on being different from the rest of Intel. Some of this was justified. We have a different business model….However, when we really looked at it, we found that we were being different for difference's sake."

When corporations force new and old businesses to share responsibility for critical choices, the former become more accepting of established practices and more successful at leveraging existing strengths. For many years, Expo Design Center operated independently of parent Home Depot, although the two businesses sold related products and could realize synergies in merchandising and procurement. Their buyers were brought together to improve efficiency when Robert Nardelli became CEO; they now sit on the same floor of an office building, at adjacent desks, and jointly make decisions on common purchases. That has led to large savings from the 25% of vendors that Home Depot and Expo Design share.

Integrate with autonomy. A new business needs help from the parent company as it strives to develop an independent identity. That assistance usually takes the form of protection, sponsorship, and other types of support from the corporation's senior-most executives. Organizationally, the company gives the new business a direct reporting line to a respected leader, who becomes responsible for providing oversight, allocating resources, offering strategic guidance, and ensuring that its managers aren't hog-tied by the parent's rules. The leader treats the new business as an exception, free from the usual controls, performance standards, and review processes demanded of the company's mature businesses.

This approach works well – until it becomes necessary to hand the new business, which has outgrown the leader's ability to manage it as an exception, over to an existing business group. That's when resistance sets in and battles break out. Some conflict is predictable–there may be a knee-jerk "not nurtured here" response from existing businesses. Yet it does reflect some legitimate concerns. New businesses are rarely designed in ways that ensure a comfortable transition to the established organization, and the division managers who inherit them are not schooled in the requirements for successful handoffs. Those managers have good reason to worry that the infant businesses will fail and that top management will hold them responsible.

Too much independence leads to a related problem: a lack of organizational learning. At times, new businesses develop strategic and operational innovations that, should they succeed, are expected to be passed on to other parts of the company. That's why these businesses need considerable independence and protection in their youth. But if they are held too far apart from the mainstream or are regarded as threats to the existing order, the new ideas they embody will never take hold in the company. GM launched Saturn in 1990 to be a "different kind of car company," with innovative advertising, labor practices, operational processes, and sales strategies that were meant to serve as models for the rest of the organization. However, by 2004, GM had reannexed Saturn, tightly linking the business to its established factories, marketing programs, and labor contracts, partly because the company's other divisions had no desire to be "Saturn-ized."

For these reasons, we find, integration works best when it begins early in the life of a new business. Managers are more amenable to inheriting organizations that they have had a hand in shaping from infancy. The challenge is to get the balance right between identity and integration, and to make the shift at the proper time. Too much integration in the early days or a rushed handoff, and the new business will never differentiate itself. Too much early independence or corporate dominance, and established divisions will resist the integration of the new business. Companies can achieve the proper balance if they follow a few simple principles.

Assign corporate and operating sponsors. Corporate sponsors, who can be either line or staff executives, bring credibility and clout to new ventures, while operating sponsors, who are drawn from particular businesses, divisions, or groups, contribute organizational savvy and foster acceptance. Together, they are likely to give the right mix of freedom and discipline to new businesses, and to balance identity with integration. In 2006, Staples launched ten prototype rural stores. Each store reported simultaneously to the local district manager and to the company's vice president for strategic markets, who was responsible for the initiative. Such dual sponsorship helps overcome the problem of long and uncertain gestation periods. Few employees will sign up for a new business if they believe that resources will disappear when it becomes an independent business or if they sense that senior leaders are displaying on-again, off-again enthusiasm. With dual sponsorship, companies signal that the new business is a long-term commitment and that they have already given thought to its transition to maturity.

Establish criteria for handoffs. Unless there are preestablished standards for handoffs from corporate oversight to divisional ownership, companies will make those shifts very slowly. Most new businesses prefer to stay under the protective corporate umbrella, where they enjoy privileged treatment and special status, controls are frequently looser, and resources are easier to obtain. The criteria for handoffs can be quantitative (revenue or size thresholds, number of customers, market share targets) or qualitative (clarity of strategy, stability

Entrepreneurial Equilibrium

Corporations can grow new businesses by performing three kinds of balancing acts:

Balance trial-and-error strategy formulation with rigor and discipline.

> Narrow the range of choices before diving deep.
> Closely observe small groups of consumers to identify their needs.
> Use prototypes to test assumptions about products, services, and business models.
> Use nonfinancial milestones to measure progress.
> Know when – and on what basis – to pull the plug on infant businesses.

Balance operational experience with invention.

> Appoint "mature turks" as leaders of emerging businesses.
> Win veterans over by asking them to serve on new businesses' oversight bodies.
> Consider acquiring select capabilities instead of developing everything from scratch.
> Force old and new businesses to share operational responsibilities.

Balance new businesses' identity with integration.

> Assign both corporate executives and managers from divisions as sponsors of new ventures.
> Stipulate criteria for handing new businesses over to existing businesses.
> Mix formal oversight with informal support by creatively combining dotted- and solid-line reporting relationships.

and experience of the leadership team, competitive superiority), but everyone in the company must know and agree to them in advance.

Employ hybrid organizational forms. Companies must also balance identity and integration by using innovative organizational structures. Such structures often consist of creative combinations of dotted-line and solid-line reporting relationships that mix formal authority with informal oversight. Councils and oversight committees are particularly useful. To support its shift from the commodity chemical business to specialty chemicals, Ashland Chemical created its Strategic Expansion Project Board, consisting of the CEO and all the group vice presidents. The board identified and funded projects that had significant commercial potential but cut across traditional business boundaries. The composition of the board ensured that representatives from multiple functions, businesses, and staff and line groups sat down together, combined perspectives, and worked out differences. Once projects became operational, they moved to the Commercial Development Group, whose head reported directly to the CEO.

How IBM Strikes a Balance

One company that has applied these principles is IBM. The starting point was September 12, 1999, when then-CEO Lou Gerstner learned that division managers had killed a promising project that focused on the explosive growth in biotechnology and life sciences computing. He fired off a scathing memo to his senior team, demanding to know why IBM kept missing the emergence of new industries. Executives quickly formed a task force to gather information by interviewing members of several struggling or unsuccessful start-ups within IBM, reviewing the academic literature on innovation and business creation, and benchmarking IBM's new-business development efforts against those of Cisco, Intel, Microsoft, and other large companies, as well as those of venture capitalists and entrepreneurs.

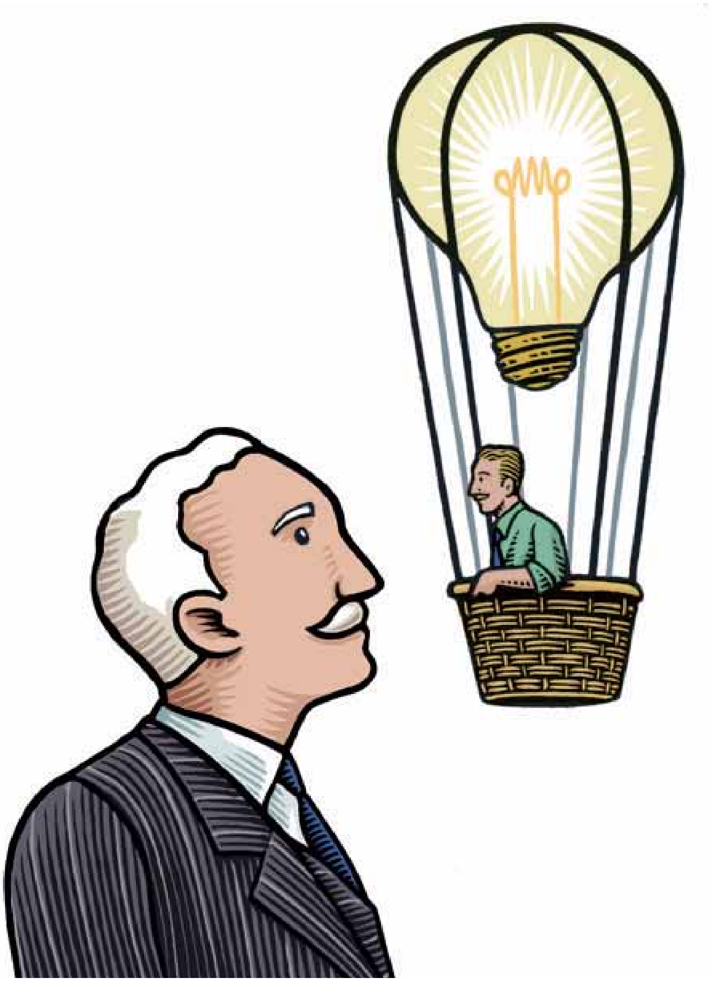
The team concluded that IBM's difficulties in starting new businesses could be traced to six root causes: a management system that rewarded execution and short-term results rather than strategic business building; a preoccupation with IBM's current markets and existing offerings; a business model that emphasized sustained profits and improvement in earnings per share rather than actions to drive higher price-earnings ratios; a financial, data driven approach to gathering and using market insights that was inadequate for embryonic markets; an absence of processes suitable for selecting, developing, funding, and terminating new growth businesses; and a lack of entrepreneurial skills. In essence, the team discovered that IBM, like many other companies, suffered from the two-cultures problem that we described earlier.

To overcome these obstacles, the task force recommended that IBM's senior executives devote more time and attention to developing emerging businesses; that the company identify and support promising opportunities; and that every business group and division develop its own sets of new businesses. Most important, executives recommended that IBM build a distinct Emerging Business Opportunity (EBO) management system to complement its existing systems.[1]

After several months, Gerstner remained concerned about the extent of the organization's acceptance of the task force's recommendations; the ability of IBM's existing processes to catch problems as new businesses grew; and the possibility that division managers might game the system. As one senior executive recalled, that led Gerstner to observe at one of the team meetings devoted to the topic: "Somebody around this table has to shepherd these efforts forward, someone who knows the culture well enough to kick the system. It can't be just some staff guy. It has to be someone with really big shoes." On July 24, 2000, Gerstner announced that he was promoting John Thompson, leader of the software group, to vice chairman and putting him in charge of the new-business effort. Thompson, a 34-year IBM veteran, had managed several product groups and had also led many cross-business initiatives, such as the pervasive-computing and life sciences programs. The appointment had an immediate impact. As one task force member put it: "When Gerstner made Thompson, the most respected group executive, vice chairman, the program got huge credibility. We knew then that Gerstner was serious."

Thompson moved immediately on several fronts. Initially, he told us, he saw his role as that of an evangelist, selling the company's commitment to emerging businesses "by preaching the story and occasionally making an example by putting someone in the doghouse." At the same time, he consolidated responsibility, bringing in the corporate strategy and technology groups for staff support. He insisted, as one of the conditions for taking the job, that he control a pool of funds to support EBOs, and IBM set aside $100 million for the purpose. Most important, Thompson started creating the development, oversight, and review processes that would form the core of IBM's Emerging Business Opportunity management system. In the process, Thompson and his successor, Bruce Harreld, artfully managed a series of balancing acts.

Leadership. Because many EBOs were in danger of falling between the cracks of established businesses, success hinged on their leaders' ability to navigate IBM's complex matrix organization to secure cooperation and support. The typical EBO leader had only four or five direct reports and otherwise relied on part-time assistance from other parts of the company, so each had to find ways to manage the activities of dozens or, occasionally, hundreds of IBM employees in different countries and business groups.



ness's marketplace, set of customers to be pursued, value proposition, existing and needed capabilities, and steps to be taken next. Unlike IBM's traditional planning processes, the EBOs' development process was exploratory, with frequent changes in direction. According to Thompson: "Sometimes it would take a year to a year and a half to get to a strategy we were happy with. You just kept iterating and iterating and iterating."

To resolve strategy issues, IBM encouraged EBO teams to engage with the marketplace. In the earliest days of a new business, when product designs and industry standards were still in flux, that often required selling a point of view to the outside world. Public relations and media communications were essential tasks, and EBO teams often worked directly with analysts, thought leaders, and technical columnists to gain positive coverage in the press. Eventually, however, mind share had to translate into market share. To that end, IBM expected teams to work with customers on in-market experiments, where they executed some elements of their business plans. The first step was to test the proposed product as a pilot or to persuade a few customers to allow IBM to incorporate the product or service into a new design (called a design-in). The EBO teams had to set targets that they hoped to achieve through the experiments, partly to acknowledge to themselves that failure was a distinct possibility.

As the results of the experiments came in, EBOs had to revise their strategies and business designs. Much of that work took place in monthly review meetings that included the EBO leader, the overseeing IBM business group or division head, representatives from finance and research, and the EBOs' czar (Thompson, then Harreld). At these meetings, Thompson and Harreld took care to establish ownership of the business development process: They set the agenda, asked the tough questions, and even held these meetings in their own offices. The reviews were rigorous and lasted several hours; one participant described them to us as "root canals." They were fundamentally different from IBM's traditional business reviews, which focused on financial performance versus plan targets. EBO reviews were much more developmental; they were designed to refine business plans rather than review the numbers.

Many EBO teams needed help defining their strategic intent; they found it difficult to set boundaries around what they wanted to accomplish. Assumptions about

Thompson therefore decided to choose EBO leaders for their experience and skill in working the system, as well as for their entrepreneurial, business-building, and creative talents.

Not surprisingly, many experienced managers had doubts about becoming EBO leaders. They perceived the move to be a step down; it was like, one of them said, "being asked to join a minor-league team after being a player in the major leagues." For this reason, and because the competencies they needed were difficult to find, IBM's senior-most executives handpicked the first EBO leaders. The top brass was involved in the process, Thompson pointed out, partly because "the line really didn't want to give those people up."

EBO leaders reported to the relevant business group heads, who also assumed primary responsibility for their performance reviews. However, IBM's mature turks also had a strong dotted-line relationship with Thompson and Harreld, who took over as IBM's EBO czar after Thompson retired in September 2002.

Strategy development. Thompson charged EBO leaders with arriving at "strategic clarity" – which, at IBM, means having a deep understanding of the new busimarket needs and the business's ability to deliver were often wildly optimistic. Many teams had trouble identifying opportunities, sources of value, target customers, and the bases of sustainable competitive advantage. They had little experience with poorly defined marketplaces and had to learn the rudiments of strategic analysis. Because collaborative brainstorming and joint problem solving were the primary goals of these meetings, the process was contentious by design. A crisp presentation didn't matter. In fact, Harreld pointed out, most EBO leaders had to learn a new set of behaviors. "They were trained to answer every question and to have everything under control. I told them, 'Put it aside. The worse you look, the better this meeting is going to go.'"

Monitoring. Along with IBM's finance and corporate strategy staffs, Thompson and Harreld periodically evaluated each EBO using three parameters: project-based milestones, financials, and assessments of business maturity. Together, those metrics satisfied IBM's numbers-oriented executives even as they encouraged the EBOs to innovate and grow.

The project-based milestones were the primary basis on which EBOs were evaluated. IBM used many kinds of milestones: marketplace acceptance (for instance, number of customer pilots, customer references, and design-ins), external perception (IBM's public image versus the competition's, mentions by key technology columnists, presentations at industry conferences), ecosystem development (number of software vendor partnerships and technology alliances), internal execution (significant product development checkpoints and announcements), and resource building (additions of solution and brand specialists to the staff, creation of an advisory committee, outreach to other parts of the organization). As one participant observed, IBM's executives expected milestones to indicate progress toward a goal: "They had to be more than just [any] nonfinancial measures that were easy to count."

The EBOs were not, however, completely free from financial scrutiny. Once a new business was up and running, IBM's finance group calculated its revenues and direct expenses. The reports provided the basis for monthly reviews that the finance group conducted with each EBO's executives. Meetings were often brief, but they served a dual purpose. They prepared emerging businesses for the financial reviews that would be required of them as they matured. In addition, they provided a check: If the expenses of an EBO were below budget but it wasn't meeting its milestones, that often meant that the IBM division funding the new venture was cutting back on investments. "That's a foul," an IBM corporate finance executive told us. "And you can only find it by looking at expenses and milestones in the same meeting."

Finally, to track how well all the EBOs were progressing, IBM's corporate strategy department developed a color-coded scoring system. It rated each EBO in three areas: developing a clear strategy, defining an executable model, and winning in the marketplace. Red identified concerns or problems, yellow signaled limited progress and unresolved issues, and green indicated sustained success. The strategy team summarized the results of these assessments in monthly and quarterly reports to senior management. These ratings also helped executives determine when the new businesses were ready to be transferred out of the EBO management system.

The true measure of any system is its results. Of the 25 business bets that IBM has made in the past five years, three have failed, and the remainder are a mix of evolving and successful businesses. In 2002, these businesses contributed more than $6 billion in additional revenues; in 2003, more than $10 billion; and in 2004, $15 billion.

Most of the new businesses are now in the hands of IBM's business groups. That transition occurred quite suddenly. Gerstner's successor, Sam Palmisano, triggered the shift when he suggested to Harreld in August 2003 that "maybe we're hugging the EBOs too closely." Harreld responded by deciding, almost overnight, to move 14 EBOs out of the corporate system and into IBM's business groups. In each case, he based his decision on two simple tests of sustainability: Did the business have clear leadership? And did it have a clear strategy? Any operational issues, he felt, were better addressed by the business group leaders than by the corporate strategy department.

The handoffs were accompanied by tightened monitoring and reporting. IBM made the business groups' quarterly reviews more rigorous, with corporate strategy executives attending to monitor the progress of the EBOs. Each group's monthly letter to the chairman had to describe the status of its EBOs. In addition, Harreld met twice a year with every business group head to review the EBOs' progress and to ensure that IBM's traditional culture wasn't choking their performance.

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For companies that wish to succeed with corporate entrepreneurship, the lesson is simple: Success is not an either-or proposition. New businesses should be nurtured through a series of balancing acts that combine entrepreneurship and disciplined management, short- and long-term thinking, and established and new processes. As IBM's EBO management system shows, when companies must choose between black and white, the best response is often gray.

1. For more details, see David A. Garvin and Lynne C. Levesque, "Emerging Business Opportunities at IBM" (A, B, and C), Harvard Business School case nos. 9-304-075, 9-304-076, and 9-304-077.

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Biotech has not delivered on its promise because the industry's structure – much of it borrowed from Silicon Valley – is flawed. Businesses engaged in advancing basic science as a core activity need a new design.

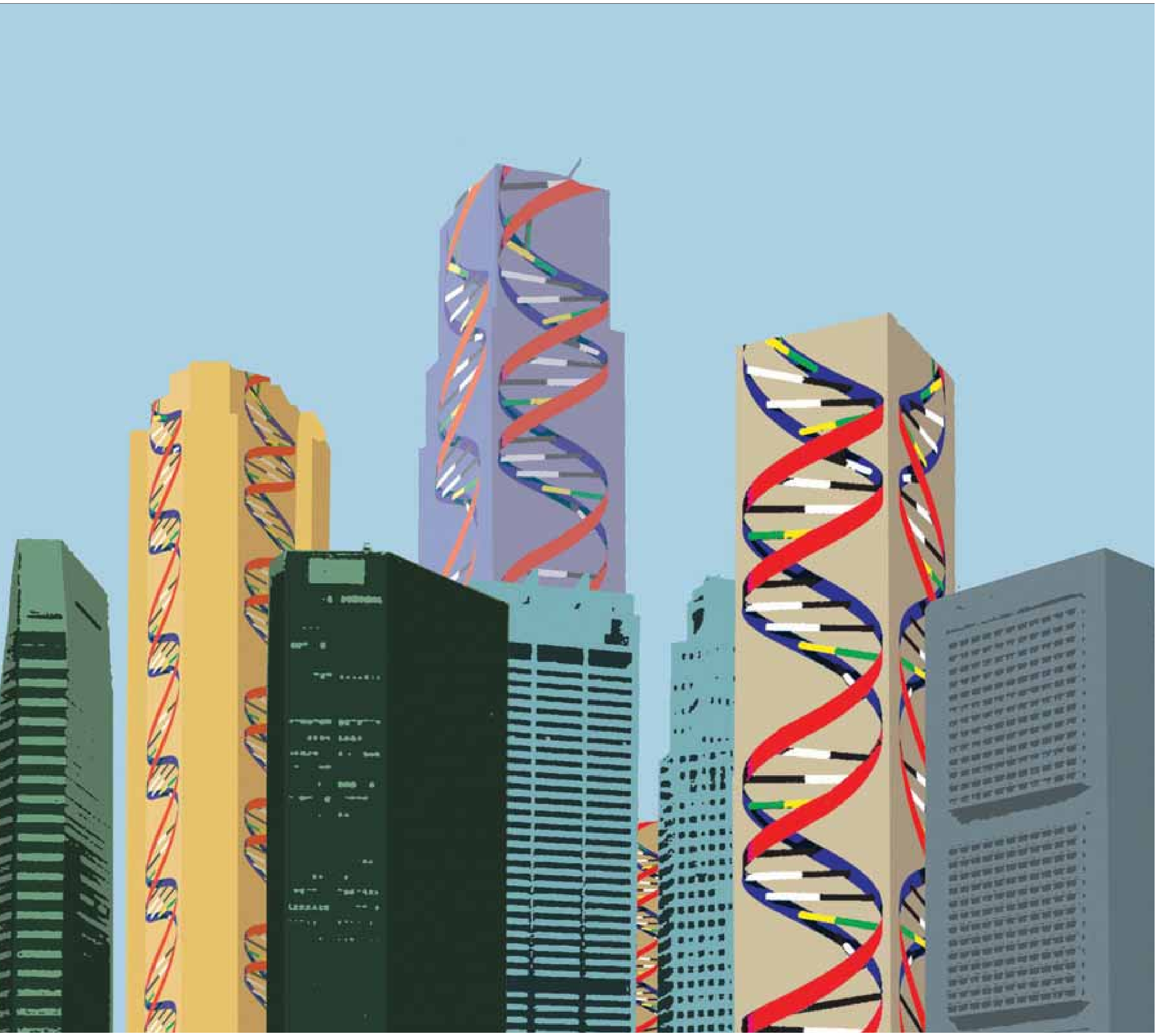
Can Science Be a Business?

Lessons from Biotech

by Gary P. Pisano

In its 30 years of life, the biotechnology industry has attracted more than $300 billion in capital. Much of this investment has been based on the belief that biotech could transform health care. The original promise was that this new science, harnessed to new forms of entrepreneurial businesses that were deeply involved in advancing basic science, would produce a revolution in drug therapy. Unencumbered by the traditional technologies and organizations of the established pharmaceutical giants, these nimble, focused, science-based businesses would break down the wall between basic and applied science and produce a trove of new drugs; the drugs would generate vast profits; and, of course, investors would be handsomely rewarded.

So far, the promise remains largely that. Financially, biotech still looks like an emerging sector. Despite the commercial success of companies such as Amgen and Genentech and the stunning growth in revenues for the industry as a whole, most biotechnology firms earn no profit. Nor is there evidence



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that they are significantly more productive at drug R&D than the much maligned behemoths of the pharmaceutical industry.

This disappointing performance raises a question: Can organizations motivated by the need to make profits and please shareholders successfully conduct basic scientific research as a core activity? For 30 years, debate has been intense about whether business's invasion of basic science – long the domain of universities and other nonprofit research institutions – is limiting access to discoveries, thereby slowing scientific advance. But the question of whether science can be a profitable business has largely been ignored.

As always, the prevailing outlook in the industry itself is that the revolution in drug creation will succeed; it will just take a little longer than anticipated. That may be wishful thinking. Over the past 20 years, I have conducted extensive research on the strategies, structure, performance, and evolution of the biotechnology and pharmaceutical sectors. I learned that the "anatomy" of the biotech sector – much of it borrowed from models that worked quite well in software, computers, semiconductors, and similar industries – is fundamentally flawed and therefore cannot serve the needs of both basic science and business. Unless that anatomy changes dramatically, biotech won't be able to attract the investments and talent required to realize its potential for transforming health care.

By "anatomy," I mean the sector's direct participants (start-ups, established companies, not-for-profit laboratories, universities, investors, customers); the institutional arrangements that connect these players (markets for capital, intellectual property, and products); and the rules that govern and influence how these institutional arrangements work (regulations, corporate governance, intellectual property rights). For biotechnology to fully succeed, its anatomy must help the players collectively to excel in three ways: managing risk and rewarding risk taking, integrating the skills and capabilities that reside in a range of disciplines and functions, and advancing critical knowledge at the organizational and industry levels.

The parts of an industry's anatomy should support one another in meeting these challenges. In biotech, they work at cross-purposes. For example, the way the industry manages and rewards risks – how businesses are funded – conflicts with the long R&D timetable needed to create new drugs. The fragmented nature of the industry, with scores of small, specialized players across far-flung disciplines, is a potentially useful model for managing and rewarding risk, but it has created islands of expertise that impede the integration of critical knowledge. And biotech's market for intellectual property, which allows individual firms to lock up the rights to basic scientific knowledge, limits the number of scientists who can advance that knowledge by learning through trial and error.

While all this sounds pretty gloomy, it does not mean that the industry is doomed. It does not mean that science cannot be a business. It does mean that biotech's anatomy needs to change – an undertaking that would have a major impact not only on drug R&D and health care but also on university- and government-funded scientific research, other emerging industries engaged in basic science, and the U.S. economy. The purpose of this article is to provide a framework for such an undertaking and to offer some ideas about the new organizational forms, institutional arrangements, and rules that will be required.

The Biotech Experiment

Science-based business is a relatively recent phenomenon. By "science-based," I mean that it attempts not only to use existing science but also to advance scientific knowledge and capture the value of the knowledge it creates. A significant portion of the economic value of such an enterprise is ultimately determined by the quality of its science.

Before the emergence of biotech, science and business largely operated in separate spheres. Conducting research to expand basic scientific knowledge was the province of universities, government laboratories, and nonprofit institutes. Commercializing basic science – using it to develop products and services, thus capturing its value – was the domain of for-profit companies. Historically, a handful of companies, including AT&T (the parent of Bell Labs), IBM, Xerox (the parent of the Palo Alto Research Center), and GE, did some remarkable research, but they were the exception. By and large, businesses did not engage in basic science, and scientific institutions did not try to do business.

The biotech sector fused these two domains, creating a science-business model that nanotechnology, advanced materials, and other industries have adopted. For-profit enterprises now often carry out basic scientific research themselves, and universities have become active participants in the business of science. They patent their discoveries; their technology-transfer offices actively seek commercial partners to license the patents; and they partner with venture capitalists in spawning firms to commercialize the science emanating from academic laboratories.

In numerous instances, the boundary between a university and a biotech firm is blurred. The founders of a substantial number of biotech firms include the professors (many of them world-renowned scientists) who invented the technologies that the start-ups licensed from the universities, often in return for an equity stake. These companies frequently maintain their links with the universities, working closely with faculty members and postdoctoral candidates on research projects, and sometimes using the university laboratories. In many instances, the founding scientists even retain their faculty posts.

Despite the commercial success of several companies and the stunning growth in revenues for the industry as a whole, most biotechnology firms earn no profit.

The science business was born in 1976, when the first biotech company, Genentech, was created to exploit recombinant DNA technology, a technique for engineering cells to produce human proteins. It was founded by Robert Swanson, a young venture capitalist, and Herbert Boyer, a professor at the University of California at San Francisco who had coinvented the technology. In addition to demonstrating that biotechnology could be used to develop drugs, Genentech created a model for monetizing intellectual property that has proved remarkably powerful in shaping the way the biotech industry looks and performs. This model consists of three interrelated elements:

- technology transfer from universities to the private sector through creating new firms rather than selling to existing companies;
- venture capital and public equity markets that provide funding at critical stages and reward the founders –

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investors, scientists, and universities – for the risks they have taken;

- a market for know-how in which young companies provide their intellectual property to established enterprises in exchange for funding.

In 1978, Genentech struck an agreement with Eli Lilly, a major pharmaceutical company. In return for the manufacturing and marketing rights to recombinant insulin, Lilly would fund development of the product and pay Genentech royalties on its sales. This agreement knocked down one of the chief barriers to new firms' entering the pharmaceutical business: the huge cost ($800 million to $1 billion in today's dollars) over the long time (ten to 12 years) generally required to develop a drug. This was also the first time a pharmaceutical company had essentially outsourced a proprietary R&D program to a for-profit enterprise. Since then, virtually every new biotech firm has formed at least one contractual relationship with an established pharmaceutical or chemical company, and most have formed several.

This market for know-how has encouraged venture capitalists to provide seed money for start-ups. It has also helped biotech companies tap public equity markets for capital by providing investors with an alternative to profits and revenues as a gauge of value. Genentech's wildly successful initial public offering in 1980 demonstrated that a firm with no product revenues or income could go public – which made the sector even more attractive to venture capitalists.

The Promise

The rise of this system for monetizing intellectual property was intertwined with high hopes for biotech. Through the 1980s and into the 1990s, the sector seemed to offer a solution to the looming crisis in R&D productivity that threatened established pharmaceutical companies. Facing a shortage of potential blockbuster drugs in their pipelines, these companies had dramatically increased their R&D spending, but to no avail. With new drugs unable to compensate for the major drugs that were losing their patent protection, financial analysts questioned the sustainability of the industry's profits. Biotech's champions in the scientific and investment-banking communities believed that its technologies would create an avalanche of profitable new drugs. They argued that small, specialized biotech companies had a comparative advantage in research over bureaucratic, vertically integrated pharmaceutical giants; Big Pharma should therefore focus on marketing and leave innovative R&D to nimble biotech firms that were closer to the science. Even some executives at major pharmaceutical companies appeared to believe this, as evidenced by their decisions to aggressively pursue alliances with biotech firms.

Because the products of the first wave of biotech companies – including Amgen, Biogen Idec, Cetus, Chiron, Genentech, and Genzyme – were proteins found in the human body, scientists, managers, and investment bankers involved in the sector argued that they would have a much lower failure rate than conventional, chemical-based drugs. The lower technological risks would mean lower business risks. The initial success of a few genetically engineered replacement hormones – insulin, human growth hormone, and clotting factor VIII to treat hemophilia among them – seemed to validate this view.

The sequencing of the human genome and the invention of so-called industrialized R&D techniques further bolstered predictions that biotech would generate breakthrough therapies and tremendous gains in R&D productivity. The reasoning was that the massive amount of biological data produced would help enormously in identifying the precise causes of diseases, and that techniques such as combinatorial chemistry (for creating new compounds), high-throughput screening (for testing the compounds' medicinal potential), and computational chemistry (for "rationally designing" drugs to have specific effects) would greatly increase the quantity and quality of drug candidates.

The days of inefficient, trial-and-error, craft-based, one-molecule-at-a-time approaches to drug discovery were deemed to be numbered.

Progress to Date

Excitement about these emerging technologies, the exploding number of biotech start-ups (some 4,000 over three decades), and the sector's soaring annual revenues (now about $40 billion) only reinforced this optimism. But if the industry's success is measured by profitability and progress in revolutionizing R&D to generate an avalanche of breakthrough drugs, a troubling picture emerges.

First, only a tiny fraction of biotech companies have ever been profitable or generated positive cash flows, and the sector as a whole has lost money. (See the exhibit "Profitless Growth for Biotech.") Of the firms that have been profitable, only an elite handful of the oldest – including Amgen, Biogen Idec, Genentech, and Genzyme – have generated substantial profits. Only Amgen and Genentech have broken into the league of established pharmaceutical companies. It's especially noteworthy that Genentech, after pioneering the system for monetizing intellectual property, then took a different path: along with Amgen, Genzyme, and a few others, it vertically integrated by investing heavily in manufacturing and marketing even as it continued to build internal scientific capabilities. In addition, Genentech forged a long-term relationship with Roche, the Swiss pharmaceutical giant, which owns 56% of its shares.

Second, there is no sign that biotechnology has revolutionized the productivity of pharmaceutical R&D, despite many claims to the contrary. The average R&D cost per new drug launched by a biotech firm is not significantly different from the average cost per new drug launched by a major pharmaceutical company. (See the exhibit "Biotech Has Produced No Breakthrough in R&D Productivity.") Nor has industrialized R&D dramatically increased the number of compounds that make it to human clinical testing, let alone into the market. (See the exhibit "Industrialized R&D Has Yet to Deliver for Biotech.") There is no conclusive proof that the unexceptional productivity of biotech firms is due to the complexity and risk of the projects they undertake.

Nor is there reason to believe that biotech's productivity will improve with time. Optimists point out that biotech firms account for a growing percentage of drugs in clinical development. This suggests that we should expect a great number of drugs to emerge from the biotech pipeline in the future. But while industry spending on R&D continues to increase substantially, the attrition rate of biotech drugs in development has also grown over time. Thus it is doubtful that biotech's output per dollar invested in R&D will improve significantly.

The way the industry manages and rewards risks – how businesses are funded – conflicts with the long R&D timetable needed to create new drugs.

Finally – and perhaps not surprisingly – the biotech sector appears to be retreating from its distinctive position at the radical and risky end of the R&D spectrum. Since 2001, when the genomics bubble burst, the strategies of start-ups and the preferences of venture capitalists have undergone a marked change. Rather than forming so-called molecule-to-market companies, whose first product revenues might be more than a decade away, entrepreneurs and investors have begun to look for lower-risk, faster-payback models, such as licensing existing projects and products from other companies and then refining them.

Refinements such as new formulations, including new technologies for delivery, are certainly valuable. They can lead to significant therapeutic improvements and expanded treatment options. That said, the change in strategies raises a major concern: If young biotech firms are not pursuing cutting-edge science, who will focus on the higher-risk long-term projects that offer potential medical breakthroughs?

People involved in biotechnology have long contended that the sector will flourish eventually. Some still say it's just a matter of time and money. Others insist that technology will save the day. Genomics, proteomics, systems biology, and other advances will make it possible to identify promising drug candidates with a high degree of precision at extremely early stages of the R&D process, which should lead to a dramatic reduction in failure rates, cycle times, and costs.

Such optimism assumes that the underlying structure of the sector is healthy and the strategies of the players make sense. My research suggests otherwise. This structure and these strategies cannot solve the fundamental business and scientific challenges facing the sector.

A Flawed Anatomy

Like living things, industries are not "designed" but they have designs. In living things, these designs are called anatomies. Anatomy helps us understand what a given species is capable of and why certain species can thrive in some environments but not others. Anatomy explains why a cheetah can run 65 mph and a turtle can't. The fit between anatomy and environment matters in economics, too.

The anatomy of the biotechnology industry looks quite similar to those of other high-tech sectors, such as software and semiconductors. It involves university-spawned start-ups that focus on specific pieces of the R&D value chain; a role for the venture capital and public equity markets; and a market for know-how. What some might call the Silicon Valley anatomy has worked wonderfully well in these other sectors. Biotech's anatomy was based on the premise that it would be a lot like them. But when it comes to R&D, biotech differs radically in three ways:

- Profound and persistent uncertainty, rooted in the limited knowledge of human biological systems and processes, makes drug R&D highly risky.
- The process of drug R&D cannot be broken neatly into pieces, meaning that the disciplines involved must work in an integrated fashion.
- Much of the knowledge in the diverse disciplines that make up the biopharmaceutical sector is intuitive or tacit, rendering the task of harnessing collective learning especially daunting.

Contending with profound uncertainty and risk. The basic feasibility of technologies is not an issue for R&D in most industries, where the effort and resources go primarily into developing concepts already known to be technically feasible. Car designers may grapple with engineering problems concerning a vehicle's various parts and worry about whether the design can be manufactured and whether customers will buy the vehicle. But they can be virtually certain that at the end of the process the vehicle will work. Even in high-tech industries such as semiconductors, high-performance computers, and aircraft, it is usually fairly clear which commercial R&D projects are scientifically feasible and which are not.

This is not the case with drug R&D. Whether a drug candidate is safe and effective can be determined only through a lengthy process of trial and error. Despite extraordinary progress in genetics and molecular biology over the past few decades, scientists still find it extremely difficult to predict how a particular new molecule will work in humans. Even today, they can assume that the most likely outcome of a project, after years of effort, will be failure. Historically, only one out of about 6,000 synthesized compounds has ever made it to market, and only 10% to 20% of drug candidates beginning clinical trials have ultimately been approved for commercial sale.

Advances in basic science may eventually improve these odds. But so far (and contrary to expectations), biotechnology has actually increased the uncertainties in drug R&D. Although the number of targets (possible causes of diseases), weapons (therapies) with which to attack them, and novel approaches for identifying new potential causes and cures has exploded, knowledge about many of these options remains superficial, forcing scientists to engage in more trial and error, not less. So even though biotechnological advances may eventually reduce the technical risks in R&D, they have to date had the opposite effect.

Profound, persistent uncertainty translates into high, long-term risks. At first glance, biotech's system for monetizing intellectual property seems to have functioned fairly well in managing such risks. The rapid formation of new firms has given rise to a plethora of experiments. The allure of equity ownership has encouraged scientific entrepreneurs to take the risks inherent in starting new firms. And venture capitalists have had the wherewithal to manage early-stage risks and to diversify them by building portfolios of firms. A closer examination, however, suggests that hidden flaws in the system have impeded the overall business performance of the sector.

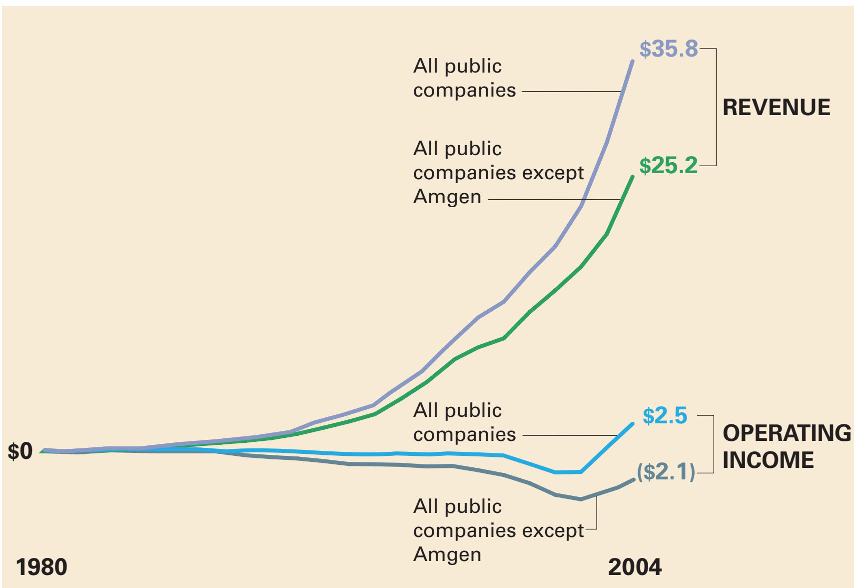
Venture capitalists have a time horizon of about three years for a particular investment–nowhere near the ten or 12 years most companies take to get their first drug on the market. In addition, because they need to spread their risks, not even the largest funds can afford to sink a vast sum into any one start-up. According to data from the National Venture Capital Association on fund investment policies, the average investment in a biotech firm is about $3 million. The average maximum is $20 million – far less than the $800 million to $1 billion typically required to develop a successful drug.

Biotech firms rely on public equity and strategic alliances to close the gap.

Profitless Growth for Biotech

The revenues of publicly held biotech companies have grown dramatically but their profits have hovered close to zero. Excluding Amgen, the largest and most profitable firm, the industry has been consistently in the red. Its losses would be even greater if private companies were included in the data pool.

Revenue and operating income before depreciation ($ billions 2004)



These solutions, however, create other problems.

Public equity markets are not designed to deal with the challenges of enterprises engaged in R&D only, which compose most of the biotech sector. These companies cannot be valued on the basis of earnings; most of them don't have any. Their value hinges almost exclusively on their ongoing R&D projects. But trying to value them on the basis of projects that face years of great technical and commercial uncertainty is next to impossible. Information is simply inadequate. No clear disclosure and valuation standards exist for intangible assets in general and R&D projects in particular. Generally accepted accounting principles (GAAP) typically don't require companies to disclose their R&D projects, and although biotech and pharmaceutical firms must disclose information on the state of their development pipelines, the requirements are vague. For example, companies have discretion over how much detail to provide about possible therapeutic uses of a given product, clinical trial results and progress, and future development plans. Without adequate information, even the most sophisticated valuation techniques, such as real options and Monte Carlo simulation, are of limited use.

The other challenge for investors is interpreting the publicly announced results of clinical trials. Companies can and do interpret these results in different ways. Even if they interpret them similarly, they may make different decisions about whether to proceed to the next stage, based on their differing appetites for risk.

Public investors have looked to the market for know-how to fill this information gap. With their years of experience and armies of scientists, the big pharmaceutical companies that have struck deals with biotech firms surely have the knowledge to assess projects' technical and commercial prospects. So the willingness of Merck or Novartis or Eli Lilly to invest in a biotech company's project should signal that its prospects are good, right? Not necessarily. Pharmaceutical companies often make alliances in precisely those areas where they lack expertise. Moreover, in many cases they have spent lavishly on alliances and reaped little in return – or have walked away from licensing early-stage drugs that eventually became blockbusters.

Further evidence that the system for monetizing intellectual property is flawed is that, on the whole, the long-term returns on investments in biotech have not been commensurate with the substantial risks. While venture capital funds have enjoyed some stellar years, and individual biotech stocks have performed spectacularly, average returns overall have been disappointing relative to the risks. From 1986 through 2002, venture capital funds generated an average annual internal rate of return of 16.6%. And an analysis conducted by Burrill, a San Francisco–based merchant bank, found that an investor who bought all 340 biotech IPOs from 1979 through 2000 and held on to those shares until January 2001 (or until a company was acquired) would have realized an average annual return of 15%.

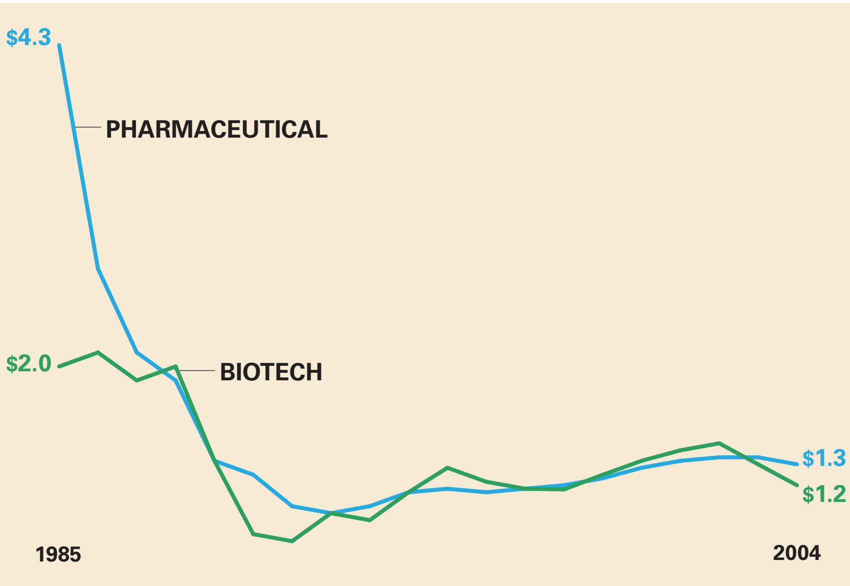
All this may explain why biotech start-ups appear to be retreating from the riskiest projects. Although it is hard to know conclusively, indications are that investors are becoming more cautious.

Integrating diverse disciplines. Thanks largely to the emergence of the

Biotech Has Produced No Breakthrough in R&D Productivity

As the graph below indicates, the average R&D cost per new drug launched by biotech firms is not significantly different from the average cost per new drug launched by major pharmaceutical companies.

R&D spending per new drug launched ($ billions 2004)



The sample of biotech companies includes all publicly held companies that tried to develop new drugs. The sample of pharmaceutical companies includes the top 20 companies in the world according to their R&D spending. The drugs do not include line extensions, reformulations, or approvals for new uses. Every annual data point represents the cumulative R&D expenditures from 1985 through the given year divided by the cumulative number of drugs launched during the same period. The first four and last four years of data were adjusted to account for the lag between R&D spending and the resultant output. Credit for a jointly developed new drug was divided equally between the biotech firm and its partner, the established pharmaceutical company.

biotech industry, the tool kit of drug R&D has become much bigger and much more diverse. In the mid-1970s, it was dominated by a single discipline: medicinal chemistry. Today it includes molecular biology, cell biology, genetics, bioinformatics, computational chemistry, protein chemistry, combinatorial chemistry, genetic engineering, high-throughput screening, and many others. These new tools are opening up new opportunities, but each sheds light on only one piece of a very complex puzzle. Discovering and developing drugs effectively requires that all the pieces come together. Therefore, integration across diverse scientific, technical, and functional domains is more important than ever if the scientific promise of biotech is to be realized.

The challenge of integration is not unique to drugs. Virtually all R&D involves solving multiple types of problems. Not only must the many problems be solved, but the solutions must ultimately work together as a whole.

In some cases – including highly complex systems such as electronics equipment, automobiles, software, and airplanes – a big R&D problem can be broken down into a set of relatively independent subproblems, to be solved independently and then put together. Modularity makes possible the division of labor among different organizations specializing in different parts of the system, but it generally requires well-defined interfaces and standards that specify how different components of the system are supposed to fit and function together. In addition, modularity requires that intellectual property be codified and the rights to it be clearly defined and protected. Drug R&D lacks these requirements.

Most of the numerous functional and technical activities involved in drug R&D tend to be highly interdependent. A case in point is identifying a target for drug discovery. The big questions to be resolved are what the underlying mechanism of the disease is and where drug therapy might intervene in it. Because human biology is extraordinarily complex, target identification is extraordinarily multifaceted. What is the pathway? What genes might be at work? How do they interact? What are the proteins those genes express, and what do they do? What is their structure? How likely is one or more of them to be a "druggable" target? Answering these questions requires insights from different disciplines – including structural genomics, functional genomics, cell biology, molecular biology, and protein chemistry – and also a broad range of approaches, including computational methods, high-throughput experimentation, and traditional "wet" biology.

The same kind of integration must also occur further downstream in development but with still other disciplines, such as toxicology, process development, formulation design, clinical research, biostatistics, regulatory affairs, and marketing. It is difficult, if not downright impossible, to successfully develop a drug by solving problems individually in isolation, because each technical choice (the target you pursue, the molecule you develop, the formulation, the design of the clinical trial, the choice of the target patient population, and the choice of manufacturing process) has implications for the others. Arriving at a solution requires that different kinds of scientists repeatedly exchange huge amounts of information. In other words, they must work together in a highly integrated fashion.

There are two basic ways of achieving integration. One is by having individual firms own all the requisite pieces of the puzzle (vertical integration). The other is with market-reliant networks, in which independent specialists integrate their work through alliances, licensing arrangements, and collaboration. The traditional pharmaceutical business employs the former, and the biotech industry the latter.

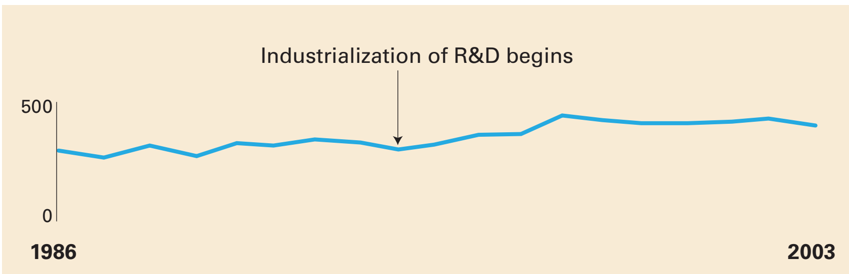
Most biotech firms were formed to allow small teams of highly dedicated scientists to focus on exploiting a specific finding or body of work initiated at a university. The result was hundreds of islands of specialized expertise. The biotech sector has relied heavily on the market for know-how to link these islands. There are indications, however, that this market can't facilitate the flow of information and the collective problem solving needed to develop new drugs.

To function in a highly efficient fashion, a market for any property – whether real estate or intellectual property – requires well-defined, well-protected rights. Strong IP protection generally exists in software and semiconductors.

Industrialized R&D Has Yet to Deliver for Biotech

Since the mid-1990s, a combination of genomics, combinatorial chemistry, high-throughput screening, and IT has been used to create new drugs and to identify possible targets in the body for attacking diseases. Despite this industrialization of R&D, however, the number of compounds developed by commercial organizations that have progressed at least to human clinical testing has not increased significantly.

Number of compounds in human clinical trials



Source: www.fda.gov/cder/rdmt/Cyindrec.htm

A piece of software code, for instance, is a fairly distinct entity that can be protected by legal mechanisms, and its theft can be detected quite easily. In biotechnology, the IP regime is more complex and murkier. It is often not clear what is patentable and what is not. Moreover, the most valuable IP is often not a specific molecule but data, understanding, and insights relating to how that molecule behaves, what it can do, what its potential problems are, and how it might be developed. Such knowledge can be much more difficult to patent.

Murky IP creates two problems: It makes its owners think twice about sharing it in the first place, and it provides fertile ground for contract disputes over what will be shared. Biotech has suffered both. Suits between former partners and collaborators have been fairly common. Indeed, Genentech and Lilly, whose recombinant-insulin deal became a template for the industry in many ways, wound up in a legal contest over rights to use genetic-engineering technology to produce human growth hormone. After codeveloping recombinant human erythropoietin, a synthetic protein that stimulates the body's production of red blood cells, Amgen and Johnson & Johnson fought a bitter legal battle over the division of marketing rights. Years after that, they had another dispute about whether a later version of the drug was a completely new product or an improved form of the original.

Another formidable barrier to sharing information is the tacit nature of much of the knowledge critical to drug R&D. Such knowledge cannot be fully described in writing, because the cause-and-effect principles behind the techniques or know-how have not been completely identified. This is common in emerging fields, but the magnitude of tacit knowledge in biotech impedes the pace of learning in the sector, as we shall see.

Promoting cumulative learning. It would be hard to overstate the importance of learning to the long-term health of science-based sectors. The profound and persistent uncertainty enveloping biotech in particular and drug R&D in general means that what is known pales in comparison to what remains to be discovered. New hypotheses and findings must constantly be evaluated, and decisions must be made about which options to pursue and which to discard. These decisions must occur in the fog of limited knowledge and experience. Mistakes are common, not because people or firms are incompetent but because they are constantly dancing on the edge of knowledge.

When, as in the case of drug R&D, failure is far more common than success, the ability to learn from failure is critical to making progress. Learning can occur at multiple levels in a system or an industry. A scientist who has spent decades doing research on cell growth factors, for instance, will have accumulated quite a lot of knowledge, and the lab in which he worked will have learned many new things from his research as well as from that of others in the lab. This learning will be not only the aggregate of what individuals know but also the insights shared by the community. Some of this knowledge will be formalized in organizational procedures and methods, but much of it will probably be tacit.

Far from being dead, vertical integration has an important role to play in the future drug industry.

Despite scientific advances, there is still an art to drug discovery that relies on judgment, instinct, and experience. For example, what individual scientists know about a molecule, or a biological target for attacking a disease, or the behavior of a drug inside the body cannot be codified or reduced to precise rules – if X, then Y. Data from experiments are subject to a wide range of interpretation and opinion. What constitutes a strong signal of potential efficacy for one researcher may give pause to another.

As a result, sharing experiences over an extended period matters enormously in such endeavors, and the breadth of the sharing is extremely important. For the science to advance, each of the disciplines with expertise needed to solve a problem must be able to leverage the collective wisdom.

Unfortunately, the biotech industry is not organized to learn from experience over time. Once again, its system for monetizing intellectual property is to blame. By fueling the proliferation of start-ups, the system has helped create a sector of relatively inexperienced firms. The typical young firm in biotech simply lacks the capabilities that Genentech, for example, accumulated in the course of conducting R&D for 30 years. Nor can newer ventures afford to learn through experience. They have limited financial resources, and investors aren't willing to give them the time to perfect their craft.

Finally, the market for know-how hinders companies from forming long-term learning relationships. The lack of well-delineated intellectual property rights is one problem; the short-term focus of alliances is another. All too often, priority is given to the deal, not to building joint long-term capabilities. As a result, most alliances are at arm's length and fairly brief. According to research by Harvard Business School's Josh Lerner and Stanford Business School's Ulrike Malmendier, the length of a typical contract is just short of four years – much less than the amount of time needed to develop a drug. In addition, the relationship is often centered on reaching specific, short-term milestones; if one is missed, the alliance may be terminated.

All in all, the obstacles to integration and learning in the industry are enormous. Given these impediments, it's hardly surprising that biotech suffers from productivity problems.

A More Suitable Anatomy

To deal with profound uncertainty and high risks, allow closely interdependent problem solving, and harness the collective experience of disciplines throughout the sector, biotech needs a new anatomy–one that involves a variety of business models, organizational forms, and institutional arrangements. The approaches needed to develop more innovative drugs differ enormously from those required to develop less innovative drugs. One size does not fit all. A more suitable anatomy might include the following elements.

More vertical integration. Far from being dead, vertical integration has an important role to play in the pharmaceutical industry's future. It will be most useful in the pursuit of the most scientifically innovative drugs. Vertical integration requires a degree of scale, which means that established pharmaceutical companies are well positioned to be integrators. But that will require change. Most major pharmaceutical companies have created their own islands of expertise inside their own corporate boundaries, a deeply problematic practice that probably explains their poor R&D productivity. To realize their potential as integrators, they will need new internal structures, systems, and processes to connect technical and functional domains of expertise.

Fewer, closer, longer-term collaborations. Alliances will continue to be a critical complement to internal R&D. Given the breadth and rate of technological change, not even the largest companies can explore all facets of the R&D landscape without help from outside parties – universities and smaller, specialized biotech firms. Their collaborative relationships, however, will differ substantially in form and number from those that currently dominate the sector.

For projects that are scientifically or technologically novel, forging fewer, deeper relationships makes sense. Instead of signing 40 deals in one year, a pharmaceutical company might be better off involving itself at any one time in only five or six that last five to ten years and are broad in scope. Instead of concentrating on a given molecule, for example, a collaboration might focus on specific therapeutic areas or target families. Such relationships would potentially result in much more sharing of proprietary information, greater joint learning, and larger, more productive investments. We simply cannot expect independent enterprises to share knowledge and engage in true collaboration within a business-development framework that focuses on short-term goals and emphasizes the law of large numbers over commitment.

Fewer independent biotech firms. Small entrepreneurial biotech firms will continue to be an important element of the landscape. But there will be far fewer independent public companies. The publicly held model will work only for companies that have earnings, allowing investors to judge their prospects; under existing disclosure practices, pure R&D enterprises do not belong in the public equity space.

Quasi-public corporations. A possible alternative to the public company is the quasi-public corporation. Its shares are publicly traded, but a large company with a long-term strategic interest in the biotech firm's success owns a majority stake. Such a relationship would provide a firm with much more intensive oversight than is possible with a normal public corporation, as well as a longer-term perspective and assured funding – all of which are crucial for drug R&D. It would also allow the firm to operate with a significant degree of independence and to offer stock options and other incentives to attract and retain entrepreneurs. Genentech, which is majority-owned by Roche, is one of the few existing examples. Genentech has been highly profitable; its R&D programs have been among the most productive in the industry; and despite its growth it has maintained an entrepreneurial and science-based culture.

A new priority for universities. A shift in the mentality and policies of universities is needed. They should focus primarily on maximizing their contributions to the scientific community, not maximizing their licensing revenues and equity returns.

Much of the debate about university activity in the business of science has focused on the impact of patents and has asked the wrong question: Should universities patent their discoveries? The central issue is the extent to which universities make available the knowledge embedded in their patents. They should be much more cautious about granting exclusive licenses to basic scientific discoveries and supporting the creation of new firms. Putting the science into the hands of more explorers is likely to accelerate the pace of advance.

"Open" licensing that makes an upstream discovery widely available on reasonable economic terms works best when the technologies in question are broadly applicable tools, techniques, or concepts with many potential (but uncertain) paths for development. The advance of biotechnology would have been slowed considerably had recombinant DNA, monoclonal antibodies, and other basic genetic-engineering techniques been exclusively licensed to a single firm. Granting an exclusive license to an existing firm is necessary when the technology in question is specific and further downstream in its development, its value declines as access to it grows, and certain complementary assets and capabilities are needed to fully exploit it. For example, a novel cancer therapy might be more fully exploited if licensed to an organization with experience in both developing cancer drugs and designing and managing clinical trials. But that firm would be less inclined to invest in development if the therapy were also licensed to competitors. Granting an exclusive license to a start-up makes sense only when the technology is so radically different that existing firms lack the capabilities essential to developing it. For instance, it would probably make sense to incubate a highly novel technique such as tissue engineering inside a new firm that could build the essential capabilities from scratch.

More cross-disciplinary academic research. In commercial drug R&D, the fragmentation of the knowledge base into highly specialized niches is a major barrier to integration. There is deep knowledge within, say, chemistry and genomics, but much less knowledge about the connections between them. This is partly because each academic discipline has its own focal problems, language, intellectual goals, theories, accepted methods, publication outlets, and criteria for evaluating research.

Some of the difficulty may be in the peer-review process that universities use to award research grants. The process does an excellent job of ensuring that decisions are based on scientific merit, but reviewers tend to award grants to projects within their own disciplines.

To address this problem, some universities have in the past decade launched interdisciplinary institutes to bring together scientists from biology, chemistry, mathematics, computer science, physics, engineering, and medicine. The Broad Institute, a research collaboration involving faculty, professional staff, and students from the academic and medical communities of Harvard and the Massachusetts Institute of Technology, is one example. Such collaborations are a step in the right direction.

More translational research. As the name implies, this kind of research translates basic scientific findings and concepts into specific product opportunities. It connects early basic research with clinical testing, encompassing activities such as target identification and validation, in vitro and in vivo screening, and perhaps some early-stage human clinical trials. Working to understand how stem cells divide and specialize is an example of basic scientific research. Developing hypotheses and insights about using stem cells to treat diabetes is an example of translational research. Historically, the problem with translational research has been that the National Institutes of Health and other government agencies that fund basic research view it as applied science, and private venture capitalists view it as too risky and too long-term. Moreover, to undertake translational research requires investments in intellectual assets, such as novel animal models, that may be difficult to commercialize or even protect.

Translational research may be funded in two ways. The first is by extending the reach of government funding further downstream. This is already starting to happen with the NIH Roadmap for Medical Research, an initiative launched by the agency's director to identify and address major opportunities and gaps in biomedical research. The second is through more private funding. The largest pharmaceutical companies could increase their support for the translational research they conduct on their own or in collaboration with universities. Novartis, for one, has been pursuing both strategies. Venture philanthropies, too, hold promise. These organizations tend to be privately funded, not-for-profit entities that focus on advancing treatments for specific diseases. Some examples are the Bill & Melinda Gates Foundation (for research on AIDS and infectious diseases in developing countries), the Michael J. Fox Foundation for Parkinson's Research, the Multiple Myeloma

Research Foundation, and the Prostate Cancer Foundation. These organizations approach funding and management much the way traditional for-profit venture capitalists do, with a couple of big differences: They have long time horizons, and their goal is to make a therapeutic difference, not to return a profit to limited partners within three to five years.

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With such organizational forms and institutional arrangements, science can be a business. Is it realistic to think that the anatomy of biotech could change so radically? Yes, for two reasons. One is that many of the elements I have listed already exist, even if they are still the exception, and their success will undoubtedly attract a following. The other is that evolution is the norm in business. Epochs of major technological innovation have been accompanied by transformational innovations in industry design. For example, the development of the rail and telegraph systems, which required enormous investments and the management of vast operational complexity, gave rise to the modern corporation, which separated ownership (shareholders) from management (salaried professionals). Throughout the past century, the modern corporation has continued to evolve. Venture capital's emergence in the United States in the latter half of the twentieth century, for instance, helped produce entrepreneurial organizations that played a crucial role in semiconductors, software, computers, and communications.

We can hope that biotech will similarly evolve and create a model for emerging science-based businesses like nanotechnology. After 30 years of experimentation, it is clear that biotech is not just another high-tech industry. It needs a distinctive anatomy – one that will serve the demands of both science and business. Only then can it deliver on its promise to revolutionize drug R&D, conquer the most intractable diseases, and create vast economic wealth.

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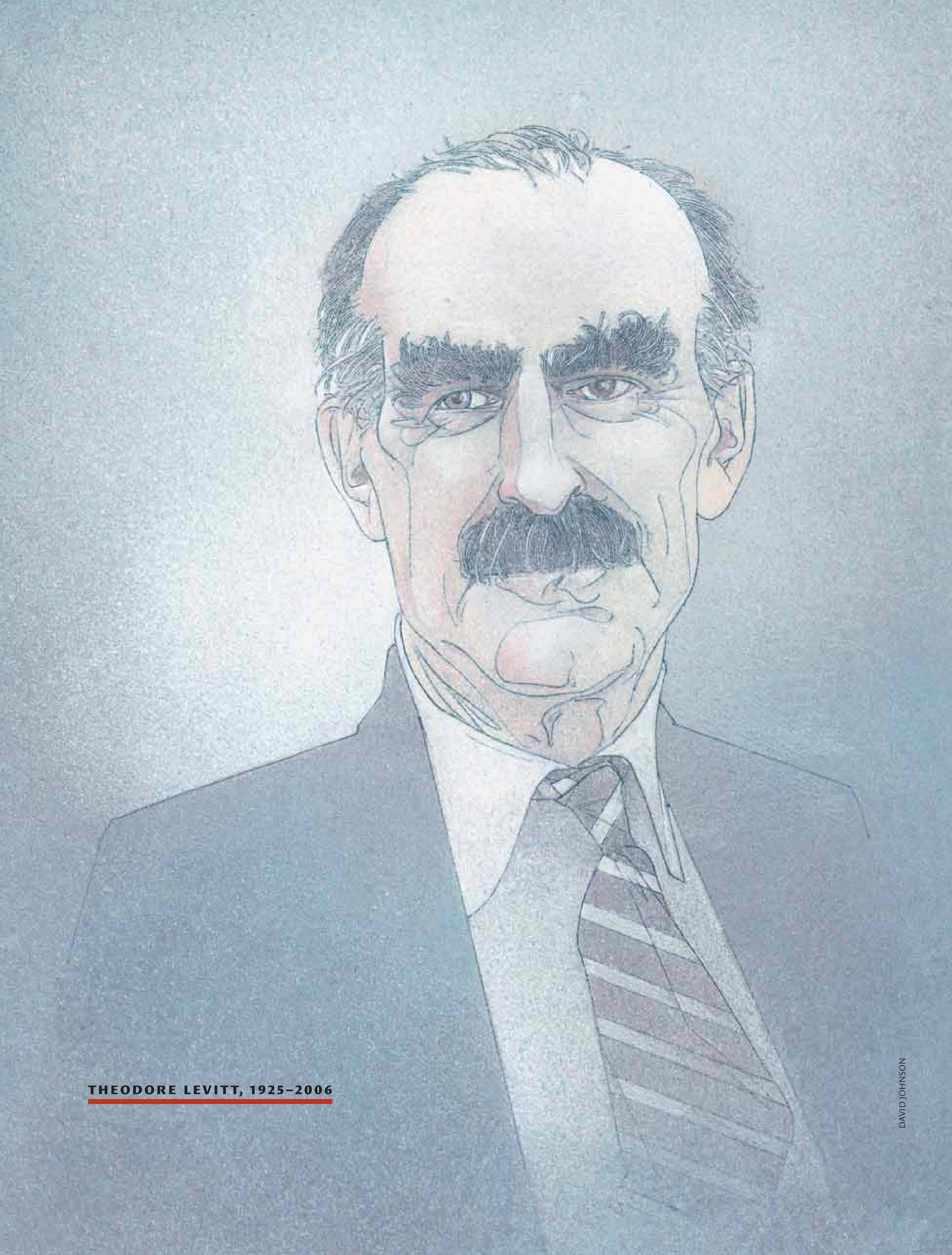
To order, see page 151.



THEODORE LEVITT, 1925–2006

DAVID JOHNSON

WHAT BUSINESS ARE YOU IN?

Classic Advice from Theodore Levitt

Ted Levitt exhorted executives to put their customers at the center of all they do – and to put marketing at the center of strategy. Here are some of his wide-ranging insights.

EDITORS' NOTE: For all the talk about management as a science, experienced executives know that strategic decisions and tactics depend heavily on context. No one understood this better than Theodore Levitt. A scholar renowned as a founder of modern marketing, he sought above all to use his insights to serve the needs of businesspeople. In a series of powerfully insightful – and delightfully written – essays in *Harvard Business Review*, he provoked readers to reexamine their settled thinking about vital issues so that they could better meet the needs of customers.

Theodore Levitt was born in Vollmerz, Germany, in 1925. Ten years later, like an older émigré named Peter Drucker, he and his family fled the rise of Nazism and immigrated to the United States. They settled in Dayton, Ohio, where they became U.S. citizens in 1940. After earning a doctorate in economics in 1951, Levitt eventually joined the faculty of Harvard Business School, where he remained a professor until retiring in 1990.

His early work was fairly conventional scholarship. That had changed by 1960, when HBR published his best-known article, "Marketing Myopia." It was not so much an article as a manifesto. Picking up threads that he and others had prepared, Levitt wove a powerful argument that companies should stop defining themselves by what they produced and instead reorient themselves toward customer needs. No one before had so aggressively and practically made the case for centering companies on customers, and his ideas continue to shape marketing practices even today, as Clay Christensen acknowledged last December in his HBR article "Marketing Malpractice."

Levitt intended "Marketing Myopia" to be a challenge to businesses as a whole, not just to their marketing departments. Twenty-three years later, his article "The Globalization of Markets" told a similar story on a grander scale. To take advantage of globalization, he wrote, companies should standardize as much as possible, because what people most desire are the low prices and quality made possible by standardization. The marketing evangelist was now praising engineering-oriented companies that lacked marketing departments but whose businesses understood the strategic opportunity globalization presented. Once again, his take-no-prisoners prose attracted wide attention and discussion, as well as criticism fixated on his over-the-top pronouncements. The critics missed the larger message about what consumers really seek and therefore missed the point.

Levitt had the gifts of provocation and generalization, offering ideas that startled readers but compelled them to think more creatively, and more intelligently, about their businesses. Writing at a time when business was held in far less esteem, he rejected the easy contempt that many intellectuals had for managers and consumers. He celebrated the material achievements of corporations and presciently saw their long-term power. He became one of this magazine's most prolific authors, publishing 26 articles – a number exceeded only by Peter Drucker.

Levitt carried his practical approach to his tenure as *Harvard Business Review*'s eighth chief editor, from 1985 to 1989. He was at the same time one of HBR's most intellectual and most populist editors. He understood that the magazine's main purpose was to serve as a kind of sophisticated translation, clarifying authors' raw – and sometimes rough – ideas for impatient, time-pressed readers. In both his writing and his editing, he epitomized HBR's standard of tireless practical engagement with ideas.

Levitt's ideal businessperson was someone who, amid the clamor of meetings, phone calls, stock-market updates, daily papers, weekly magazines, and consultants' presentations, was fed up with hype and showed an insatiable appetite for expertise. In a 1987 editor's letter, Levitt wrote, "*Harvard Business Review* enters with the authoritative well-reasoned sounds of solidly professional thought and sense – with articles written by experienced specialists and professionals addressing important people who make important decisions about important matters in the world of affairs. That's what we think thoughtful businesspeople need and want in this unstable world of slick popularizing and celebrity hype." In that ideal, he was his own best exemplar.

Marketing Myopia

Excerpted from July–August 1960

Every major industry was once a growth industry. But some that are now riding a wave of growth enthusiasm are very much in the shadow of decline. Others that are thought of as seasoned growth industries have actually stopped growing. In every case, the reason growth is threatened, slowed, or stopped is *not* because the market is saturated. It is because there has been a failure of management....

The railroads did not stop growing because the need for passenger and freight transportation declined. That grew. The railroads are in trouble today not because that need was filled by others (cars, trucks, airplanes, and even telephones) but because it was *not* filled by the railroads themselves. They let others take customers away from them because they assumed themselves to be in the railroad business rather than in the transportation business. The reason they defined their industry incorrectly was that they were railroad oriented instead of transportation oriented; they were product oriented instead of customer oriented....

The belief that profits are assured by an expanding and more affluent population is dear to the heart of every industry. It takes the edge off the apprehensions everybody understandably feels about the future. If consumers are multiplying and also buying more of your product or service, you can face the future with considerably more comfort than if the market were shrinking. An expanding market keeps the manufacturer from having to think very hard or imaginatively. If thinking is an intellectual response to a problem, then the absence of a problem leads to the absence of thinking. If your product has an automatically expanding market, then you will not give much thought to how to expand it....

The profit lure of mass production obviously has a place in the plans and strategy of business management, but it must always *follow* hard thinking about the customer. This is one of the most important lessons we can learn from the contradictory behavior of Henry Ford. In a sense, Ford was both the most brilliant and the most senseless marketer in American history. He was senseless because he refused to give the customer anything but a black car. He was brilliant because he fashioned a production system designed to fit market needs. We habitually celebrate him for the wrong reason: for his production genius. His real genius was marketing. We think he was able to cut his selling price and therefore sell millions of $500 cars because his invention of the assembly line had reduced the costs. Actually, he invented the assembly line because he had concluded that at $500 he could sell millions of cars. Mass production was the *result,* not the cause, of his low prices….

…Let us start at the beginning: the customer. It can be shown that motorists strongly dislike the bother, delay, and experience of buying gasoline. People actually do not buy gasoline. They cannot see it, taste it, feel it, appreciate it, or really test it. What they buy is the right to continue driving their cars. The gas station is like a tax collector to whom people are compelled to pay a periodic toll as the price of using their cars. This makes the gas station a basically unpopular institution. It can never be made popular or pleasant, only less unpopular, less unpleasant.

Reducing its unpopularity completely means eliminating it. Nobody likes a tax collector, not even a pleasantly cheerful one. Nobody likes to interrupt a trip to buy a phantom product, not even from a handsome Adonis or a seductive Venus. Hence, companies that are working on exotic fuel substitutes that will eliminate the need for frequent refueling are heading directly into the outstretched arms of the irritated motorist….

In order to produce these customers, the entire corporation must be viewed as a customer-creating and customer-satisfying organism. Management must think of itself not as producing products but as providing customer-creating value satisfactions. It must push this idea (and everything it means and requires) into every nook and cranny of the organization. It has to do this continuously and with the kind of flair that excites and stimulates the people in it. Otherwise, the company will be merely a series of pigeonholed parts, with no consolidating sense of purpose or direction.

After the Sale Is Over…

Excerpted from September–October 1983

The relationship between a seller and a buyer seldom ends when a sale is made. Increasingly, the relationship intensifies after the sale and helps determine the buyer's choice the next time around. Such dynamics are found particularly with services and products dealt in a stream of transactions between seller and buyer – financial services, consulting, general contracting, military and space equipment, and capital goods.

The sale, then, merely consummates the courtship, at which point the marriage begins. How good the marriage is depends on how well the seller manages the relationship. The quality of the marriage determines whether there will be continued or expanded business, or troubles and divorce. In some cases divorce is impossible, as when a major construction or installation project is under way. If the marriage that remains is burdened, it tarnishes the seller's reputation….

…In the [traditional] selling scheme the seller is located at a distance from buyers and reaches out with a sales department to unload products on them. This is the basis for the notion that a salesperson needs charisma, because it is charisma rather than the product's qualities that makes the sale.

Consider, by contrast, marketing. Here the seller, being physically close to buyers, penetrates their domain to learn about their needs, desires, and fears and then designs and supplies the product with those considerations in mind. Instead of trying to get buyers to want what the seller has, the seller tries to have what they want. The "product" is no longer merely an item but a whole bundle of values that satisfy buyers – an "augmented" product.

Thanks to increasing interdependence, more and more of the world's economic work gets done through long-term relationships between sellers and buyers. It is not a matter of just getting and then holding on to customers. It is more a matter of giving the buyers what they want. Buyers want vendors who keep promises, who'll keep supplying and standing behind what they promised. The era of the one-night stand is gone. Marriage is both necessary and more convenient. Products are too complicated, repeat negotiations too much of a hassle and too costly. Under these conditions, success in marketing is transformed into the inescapability of a relationship. Interface becomes interdependence….

During the era we are entering the emphasis will be on systems contracts, and buyer-seller relationships will be characterized by continuous contact and evolving relationships to effect the systems. The "sale" will be not just a system but a system over time. The value at stake will be the advantages of that total system over time. As the customer gains experience, the technology will decline in importance relative to the system that enables the buyer to realize the benefits of the technology. Services,

One of the surest signs of a bad or declining relationship is the absence of complaints from the customer. Nobody is ever *that* satisfied.

delivery, reliability, responsiveness, and the quality of the human and organizational interactions between seller and buyer will be more important than the technology itself….

…It is reasonable for a customer who has been promised the moon to expect it to be delivered. But if those who make the promises are paid commissions before the customer gets everything he or she bargained for, they're not likely to feel compelled to ensure that the customer gets fully satisfied later. After the sale, they'll rush off to pursue other prey. If marketing plans the sale, sales makes it, manufacturing fulfills it, and service services it, who's in charge and who takes responsibility for the whole process?

Problems arise not only because those who do the selling, the marketing, the manufacturing, and the servicing have varying incentives and views of the customer but also because organizations are one-dimensional. With the exception of those who work in sales or marketing, people seldom see beyond their company's walls. For those inside those walls, inside is where the work gets done, where the penalties and incentives are doled out, where the budgets and plans get made, where engineering and manufacturing are done, where performance is measured, where one's friends and associates gather, where things are managed and manageable. Outside "has nothing to do with me" and is where "you can't change things."…

One of the surest signs of a bad or declining relationship is the absence of complaints from the customer. Nobody is ever *that* satisfied, especially not over an extended period of time. The customer is either not being candid or not being contacted – probably both. The absence of candor reflects the decline of trust and the deterioration of the relationship. Bad things accumulate. Impaired communication is both a symptom and a cause of trouble. Things fester inside. When they finally erupt, it's usually too late or too costly to correct the situation.

We can invest in relationships, and we can borrow from them. We all do both, but we seldom account for our actions and almost never manage them. Yet a company's most precious asset is its relationships with its customers. What matters is not whom you know but how you are known to them.

Marketing Success Through Differentiation – of Anything

Excerpted from January–February 1980

There is no such thing as a commodity. All goods and services are differentiable. Though the usual presumption is that this is more true of consumer goods than of industrial goods and services, the opposite is the actual case….

…On the commodities exchanges, for example, dealers in metals, grains, and pork bellies trade in totally undifferentiated generic products. But what they "sell" is the claimed distinction of their execution – the efficiency of their transactions in their clients' behalf, their responsiveness to inquiries, the clarity and speed of their confirmations, and the like. In short, the *offered* product is differentiated, though the *generic* product is identical.

When the generic product is undifferentiated, the offered product makes the difference in getting customers and the delivered product in keeping them. When the knowledgeable senior partner of a well-known Chicago brokerage firm appeared at a New York City bank in a tight-fitting, lime green polyester suit and Gucci shoes to solicit business in financial instrument futures, the outcome was predictably poor. The unintended offering implied by his sartorial appearance contradicted the intended offering of his carefully prepared presentation. No wonder that Thomas Watson the elder insisted so uncompromisingly that his salespeople be attired in their famous IBM "uniforms." While clothes may not make the person, they may help make the sale.

The usual presumption about so-called undifferentiated commodities is that they are exceedingly price sensitive. A fractionally lower price gets the business. That is seldom true except in the imagined world of economics textbooks. In the actual world of markets, nothing is exempt from other considerations, even when price competition rages.

During periods of sustained surplus, excess capacity, and unrelieved price war, when the attention of all seems riveted on nothing save price, it is precisely because price is visible and measurable, and potentially devastating in its effects, that price deflects attention from the possibilities of extricating the product from ravaging price competition. These possibilities, even in the short run, are not confined simply to nonprice competition, such as harder personal selling, intensified advertising, or what's loosely called more or better "services."…

Customers attach value to a product in proportion to its perceived ability to help solve their problems or meet their needs. All else is derivative.

Customers attach value to a product in proportion to its perceived ability to help solve their problems or meet their needs. All else is derivative….

Customers never just buy the "generic" product like steel, or wheat, or subassemblies, or investment banking, or aspirin, or engineering consultancy, or golf balls, or industrial maintenance, or newsprint, or cosmetics, or even 99% pure isopropyl alcohol. They buy something that transcends these designations – and what that "something" is helps determine from whom they'll buy, what they'll pay, and whether, in the view of the seller, they're "loyal" or "fickle."

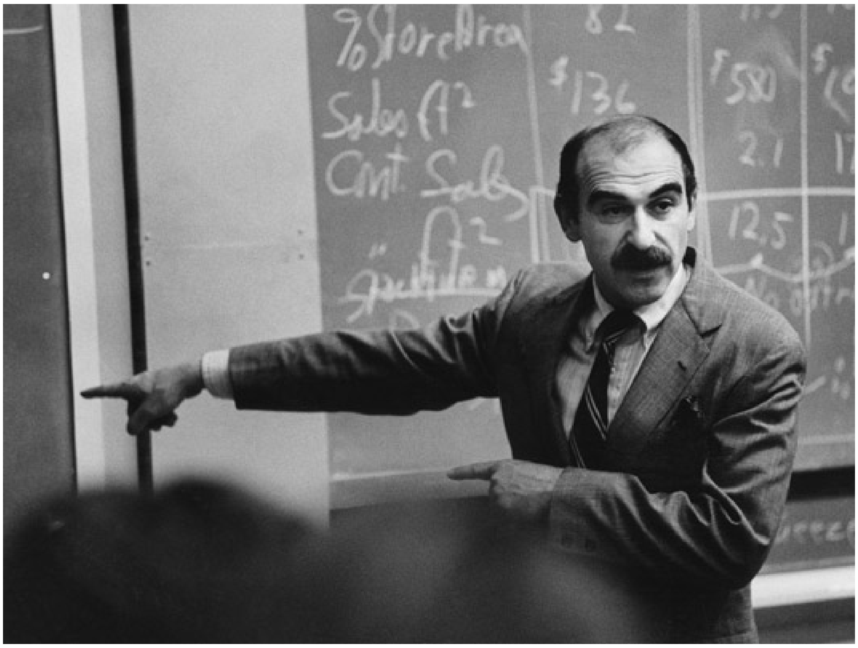
What that something is in its customer-getting and customer-satisfying entirety can be managed....

...All this may be well known, but the underlying principles encompass much more. The failure to fulfill certain more subtle expectations may reflect unfavorably on the generic product. A shabby brokerage office may cost a realtor access to customers for his or her properties. Even though the lawyer performed brilliantly in the bar exam and occupies offices of prudential elegance, his or her personality may clash with a potential client's. A manufacturer's competitively priced machine tools might have the most sophisticated of numerical controls tucked tightly behind an impressive panel, but certain customers may refuse to buy because output tolerances are more precise than necessary or usable. The customer may actually expect and want less....

As a rule, the more a seller expands the market by teaching and helping customers to use his or her product, the more vulnerable that seller becomes to losing them. A customer who no longer needs help gains the flexibility to shop for things he or she values more – such as price.

At this point, it makes sense to embark on a systematic program of customer-benefiting, and therefore customer-keeping, product augmentation. The seller should also, of course, focus on cost and price reduction. And that's the irony of product maturity: Precisely when price competition heightens, and therefore when cost reduction becomes more important, is when the seller is also likely to benefit by incurring the additional costs of new product augmentation.

The augmented product is a condition of a mature market or of relatively experienced or sophisticated customers. Not that they could not benefit from or would not respond to extra services; but when customers know or think they know everything and can do anything, the seller must test that assumption or be condemned to the purgatory of price



PHOTOS COURTESY OF HARVARD BUSINESS SCHOOL

competition alone. The best way to test a customer's assumption that he or she no longer needs or wants all or any part of the augmented product is to consider what's possible to offer that customer.

Production-Line Approach to Service

Excerpted from September–October 1972

The service sector of the economy is growing in size but shrinking in quality. So say a lot of people. Purveyors of service, for their part, think that they and their problems are fundamentally different from other businesses and their problems. They feel that service is people-intensive, while the rest of the economy is capital-intensive. But these distinctions are largely spurious. There are no such things as service industries. There are only industries whose service components are greater or less than those of other industries. Everybody is in service.

Often the less there seems, the more there is. The more technologically sophisticated the generic product (e.g., cars and computers), the more dependent are its sales on the quality and availability of its accompanying customer services (e.g., display rooms, delivery, repairs and maintenance, application aids, operator training, installation advice, warranty fulfillment). In this sense, General Motors is probably more service-intensive than manufacturing-intensive. Without its services its sales would shrivel....

People think of service as quite different from manufacturing. Service is presumed to be performed by individuals for other individuals, generally on a one-to-one basis. Manufacturing is presumed to be performed by machines, generally tended by large clusters of individuals whose sizes and configurations are themselves dictated by the machines' requirements. Service (whether customer service or the services of service industries) is performed "out there in the field" by distant and loosely supervised people working under highly variable, and often volatile, conditions. Manufacturing occurs "here in the factory" under highly centralized, carefully organized, tightly controlled, and elaborately engineered conditions.

People assume, and rightly so, that these differences largely explain why products produced in the factory are generally more uniform in features and quality than the services produced (e.g., life insurance policies, machine

repairs) or delivered (e.g., spare parts, milk) in the field. One cannot as easily control one's agents or their performance out there in the field. Besides, different customers want different things. The result is that service and service industries, in comparison with manufacturing industries, are widely and correctly viewed as being primitive, sluggish, and inefficient.

Yet it is doubtful that things need be all that bad. Once conditions in the field get the same kind of attention that conditions inside the factory generally get, a lot of new opportunities become possible. But first management will have to revise its thinking about what service is and what it implies.

The trouble with thinking of oneself as providing services – either in the service industries or in the customer-service sectors of manufacturing and retailing companies – is that one almost inescapably embraces ancient, pre-industrial modes of thinking. Worse still, one gets caught up in rigid attitudes that can have a profoundly paralyzing effect on even the most resolute of rationalists.

The concept of "service" evokes, from the opaque recesses of the mind, time-worn images of personal ministration and attendance. It refers generally to deeds one individual performs personally for another. It carries historical connotations of charity, gallantry, and selflessness, or of obedience, subordination, and subjugation. In these contexts, people serve because they want to (as in the priestly and political professions) or they serve because they are compelled to (as in slavery and such occupations of attendance as waiter, maid, bellboy, cleaning lady).

In the higher-status service occupations, such as in the church and the army, one customarily behaves ritualistically, not rationally. In the lower-status service occupations, one simply obeys. In neither is independent thinking presumed to be a requisite of holding a job. The most that can therefore be expected from service improvements is that, like Avis, a person will try harder. He will just exert more animal effort to do better what he is already doing.

So it was in ancient times, and so it is today. The only difference is that where ancient masters invoked the will of God or the whip of the foreman to spur performance, modern industry uses training programs and motivation sessions. We have not in all these years come very far in either our methods or our results. In short, service thinks humanistically, and that explains its failures.

Now consider manufacturing. Here the orientation is toward the efficient production of results, not toward attendance on others. Relationships are strictly businesslike, devoid of invidious connotations of rank or self.

When we think about how to improve manufacturing, we seldom focus on ways to improve our personal performance of present tasks; rather, it is axiomatic that we try to find entirely new ways of performing present tasks and, better yet, of actually changing the tasks themselves. We do not think of greater exertion of our animal energies (working physically harder, as the slave), of greater expansion of our commitment (being more devout or loyal, as the priest), or of greater assertion of our dependence (being more obsequious, as the butler)....

...Until we think of service in more positive and encompassing terms, until it is enthusiastically viewed as manufacturing in the field, receptive to the same kinds of technological approaches that are used in the factory, the results are likely to be just as costly and idiosyncratic as the results of the lonely journeyman carving things laboriously by hand at home.

The Globalization of Markets

Excerpted from May–June 1983

A powerful force drives the world toward a converging commonality, and that force is technology. It has proletarianized communication, transport, and travel. It has made isolated places and impoverished peoples eager for modernity's allurements. Almost everyone everywhere wants all the things they have heard about, seen, or experienced via the new technologies.

The result is a new commercial reality – the emergence of global markets for standardized consumer products on a previously unimagined scale of magnitude. Corporations geared to this new reality benefit from enormous economies of scale in production, distribution, marketing, and management. By translating these benefits into reduced world prices, they can decimate competitors that still live in the disabling grip of old assumptions about how the world works....

Who can forget the televised scenes during the 1979 Iranian uprisings of young men in fashionable French-cut trousers and silky body shirts thirsting for blood with raised modern weapons in the name of Islamic fundamentalism?…

The most effective world competitors incorporate superior quality and reliability into their cost structures. They sell in all national markets the same kind of products sold at home or in their largest export market. They compete on the basis of appropriate value – the best combinations of price, quality, reliability, and delivery for products that are globally identical with respect to design, function, and even fashion.

That, and little else, explains the surging success of Japanese companies dealing worldwide in a vast variety of products – both tangible products like steel, cars, motorcycles, hi-fi equipment, farm machinery, robots, microprocessors, carbon fibers, and now even textiles, and intangibles like banking, shipping, general contracting, and soon computer software. Nor are high-quality

The global competitor will seek constantly to standardize its offering everywhere. It will digress from this standardization only after exhausting all possibilities to retain it.

THEODORE LEVITT'S HBR ARTICLES

Advertising: "The Poetry of Becoming"
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The Case of the Migrating Markets
July–August 1990

After the Sale Is Over…
September–October 1983

The Globalization of Markets
May–June 1983

Marketing Intangible Products and Product Intangibles
May–June 1981

Marketing Success Through Differentiation – of Anything
January–February 1980

Marketing When Things Change
November–December 1977

The Industrialization of Service
September–October 1976

Dinosaurs Among the Bears and Bulls
January–February 1975

Marketing Tactics in a Time of Shortages
November–December 1974

The Managerial Merry-Go-Round
July–August 1974

Production-Line Approach to Service
September–October 1972

The Morality (?) of Advertising
July–August 1970

The New Markets – Think Before You Leap
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Why Business Always Loses
March–April 1968

The Johnson Treatment
January–February 1967

Innovative Imitation
September–October 1966

Branding on Trial
March–April 1966

Exploit the Product Life Cycle
November–December 1965

When Science Supplants Technology…
July–August 1963

Creativity Is Not Enough
May–June 1963,
republished August 2002

M-R Snake Dance
November–December 1960

Marketing Myopia
July–August 1960,
republished September–October 1975
and July–August 2004

Cold-War Thaw
January–February 1960

The Dangers of Social Responsibility
September–October 1958

The Changing Character of Capitalism
July–August 1956

and low-cost operations incompatible, as a host of consulting organizations and data engineers argue with vigorous vacuity. The reported data are incomplete, wrongly analyzed, and contradictory. The truth is that low-cost operations are the hallmark of corporate cultures that require and produce quality in all that they do. High quality and low costs are not opposing postures. They are compatible, twin identities of superior practice.

To say that Japan's companies are not global because they export cars with left-side drives to the United States and the European continent, while those in Japan have right-side drives, or because they sell office machines through distributors in the United States but directly at home, or speak Portuguese in Brazil is to mistake a difference for a distinction. The same is true of Safeway and Southland retail chains operating effectively in the Middle East, and to not only native but also imported populations from Korea, the Philippines, Pakistan, India, Thailand, Britain, and the United States. National rules of the road differ, and so do distribution channels and languages. Japan's distinction is its unrelenting push for economy and value enhancement. That translates into a drive for standardization at high quality levels....

The global competitor will seek constantly to standardize its offering everywhere. It will digress from this standardization only after exhausting all possibilities to retain it, and will push for reinstatement of standardization whenever digression and divergence have occurred. It will never assume that the customer is a king who knows his own wishes....

The Hoover case illustrates how the perverse practice of the marketing concept and the absence of any kind of marketing imagination let multinational attitudes survive when customers actually want the benefits of global standardization. The whole project got off on the wrong foot. It asked people what features they wanted in a washing machine rather than what they wanted out of life. Selling a line of products individually tailored to each nation is thoughtless. Managers who took pride in practicing the marketing concept to the fullest did not, in fact, practice it at all. Hoover asked the wrong questions, then applied neither thought nor imagination to the answers. Such companies are like the ethnocentricists in the Middle Ages who saw with everyday clarity the sun revolving around the earth and offered it as Truth. With no additional data but a more searching mind, Copernicus, like the hedgehog, interpreted a more compelling and accurate reality. Data do not yield information except with the intervention of the mind. Information does not yield meaning except with the intervention of imagination.

The global corporation accepts for better or for worse that technology drives consumers relentlessly toward the same common goals – alleviation of life's burdens and the expansion of discretionary time and spending power....

Significantly, Japanese companies operate almost entirely without marketing departments or market research of the kind so prevalent in the West. Yet in the colorful words of General Electric's chairman John F. Welch, Jr., the Japanese, coming from a small cluster of resource-poor islands, with an entirely alien culture and an almost impenetrably complex language, have cracked the code of Western markets. They have done it not by looking with mechanistic thoroughness at the way markets are different but rather by searching for meaning with a deeper wisdom. They have discovered the one great thing all markets have in common – an overwhelming desire for dependable, world-standard modernity in all things, at aggressively low prices. In response, they deliver irresistible value everywhere, attracting people with products that market-research technocrats described with superficial certainty as being unsuitable and uncompetitive....

To refer to the persistence of economic nationalism (protective and subsidized trade practices, special tax aids, or restrictions for home market producers) as a barrier to the globalization of markets is to make a valid point. Economic nationalism does have a powerful persistence. But, as with the present almost totally smooth internationalization of investment capital, the past alone does not shape or predict the future....

Reality is not a fixed paradigm, dominated by immemorial customs and derived attitudes, heedless of powerful and abundant new forces. The world is becoming increasingly informed about the liberating and enhancing possibilities of modernity. The persistence of the inherited varieties of national preferences rests uneasily on increasing evidence of, and restlessness regarding, their inefficiency, costliness, and confinement. The historic past, and the national differences respecting commerce and industry it spawned and fostered everywhere, is now subject to relatively easy transformation.

Cosmopolitanism is no longer the monopoly of the intellectual and leisure classes; it is becoming the established property and defining characteristic of all sectors everywhere in the world. Gradually and irresistibly it breaks down the walls of economic insularity, nationalism, and chauvinism. What we see today as escalating commercial nationalism is simply the last violent death rattle of an obsolete institution....

The earth is round, but for most purposes it's sensible to treat it as flat.

Creativity Is Not Enough

Excerpted from May–June 1963

"Creativity" is not the miraculous road to business growth and affluence that is so abundantly claimed these days. And for the line manager, particularly, it may be more of a millstone than a milestone. Those who extol the liberating virtues of corporate creativity over the somnambulistic vices of corporate conformity may actually be giving advice that in the end will reduce the creative animation of business. This is because they tend to confuse the getting of ideas with their implementation – that is, confuse creativity in the abstract with practical innovation; not understand the operating executive's day-to-day problems; and underestimate the intricate complexity of business organizations….

The fact that you can put a dozen inexperienced people into a room and conduct a brainstorming session that produces exciting new ideas shows how little relative importance ideas themselves actually have. Almost anybody with the intelligence of the average businessman can produce them, given a halfway decent environment and stimulus. The scarce people are those who have the know-how, energy, daring, and staying power to implement ideas….

The reason the executive so often rejects new ideas is that he is a busy man whose chief day-in, day-out task is to handle an ongoing stream of problems. He receives an unending flow of questions on which decisions must be made. Constantly he is forced to deal with problems to which solutions are more or less urgent and the answers to which are far from clear-cut. It may seem splendid to a subordinate to supply his boss with a lot of brilliant new ideas to help him in his job. But advocates of creativity must once and for all understand the pressing facts of the executive's life: Every time an idea is submitted to him, it creates more problems for him – and he already has enough….

…Advocacy of a "permissive environment" for creativity in an organization is often a veiled attack on the idea of the organization itself. This quickly becomes clear when one recognizes this inescapable fact: One of the collateral purposes of an organization *is* to be inhospitable to a great and constant flow of ideas and creativity.

Whether we are talking about the U.S. Steel Corporation or the United Steelworkers of America, the U.S. Army or the Salvation Army, the United States or the U.S.S.R., the purpose of organization is to achieve the kind and degree of order and conformity necessary to do a particular job. The organization exists to restrict and channel the range of individual actions and behavior into a predictable and knowable routine. Without organization there would be chaos and decay. Organization exists in order to create that amount and kind of inflexibility that are necessary to get the most pressingly intended job done efficiently and on time….

All this raises a seemingly frightening question. If conformity and rigidity are necessary requisites of organization, and if these in turn help stifle creativity, and furthermore if the creative man might indeed be stifled if he is required to spell out the details needed to convert his ideas into effective innovations, does all this mean that modern organizations have evolved into such involuted monsters that they must suffer the fearful fate of the dinosaur – too big and unwieldy to survive?

The answer to this is *no.* First, it is questionable whether the creative impulse would automatically dry up if the idea man is required to take some responsibility for follow-through. The people who so resolutely proclaim their own creative energy will scarcely assert that they need a hothouse for its flowering. Secondly, the large organization has some important attributes that actually facilitate innovation. Its capacity to distribute risk over its broad economic base and among the many individuals involved in implementing newness is significant. They make it both economically and, for the individuals involved, personally easier to break untried ground.

For the line manager, particularly, creativity may be more of a millstone than a milestone.

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To order, see page 151.

Why Innovation in Health Care Is So Hard

After reading Regina E. Herzlinger's May 2006 article, "Why Innovation in Health Care Is So Hard" (May 2006), I am increasingly doubtful about whether the consumer-driven approach to health care that she espouses can improve the system. Our current health care system doesn't lack for innovation; it lacks for implementation.

In the past few years, consumer-directed health plans (CDHPs) and their associated health savings accounts have been thrust into the limelight. Central to the success of these plans is the notion of transparent information. Consumers have greater access to the metrics that providers and payers use to determine the cost of services and to measure the quality of care and outcomes. With these data, which were previously hidden somewhere inside organizational databases, consumers can make more-informed health care decisions. The idea is that this increased information – if it can be absorbed and used properly by consumers–can affect the type of health care services that people demand. In the short term, however, CDHPs have only helped employers shift the responsibility for, and the cost of health care to their employees. And this shifting of costs hasn't necessarily created any true savings for the U.S. health care system.


Why Innovation in Health Care Is So Hard
by Regina E. Herzlinger

Another critical aspect of consumer-directed health plans is the notion of finances – in particular, deductibles. As part of these plans, consumers must pay for designated services out of pocket before catastrophic coverage kicks in. As a result, people with low incomes tend to avoid seeking some of these basic health care services, even preventive care, for fear they may not be able to afford them. Meanwhile, people with higher incomes are assuming some of the added costs of health care, but this increase, while bothersome, still may not prompt them to change their health care consumption. (The person who will pay $2,000 to get his teeth whitened by lasers may not be the best person to drive efficiency in the U.S. health care system.) Unless those in the upper-middle income bracket can cause some kind of health care tipping point, it is unlikely that CDHPs, as they are currently configured, will be able to positively affect the health care system in the long term.

Even before the new Medicare drug plan came into being, taxpayers already were funding more than half of all health care costs. Taxpayers will probably end up paying even more as the demographics change and as fewer employers fund health care for their employees. While we do not have a single-payer system, we have already moved to a situation in

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which the government – if it could coordinate all its health care programs – could create a single-buyer system.

Herzlinger makes the point that we need more health care models, and that is clearly true. Some existing and developing models hold promise. For instance, the health care system of the U.S. Department of Veterans Affairs 20 years ago was downright scary. Today, the VA is becoming a model of care and efficiency. It has improved by focusing its efforts in just a few important areas: treating whole patients, for example, not just specific diseases or body parts; implementing an electronic system for its medical records (EMR); and setting clear performance metrics for the entire system. Other new models are growing out of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA), which recognizes the major role government plays as a buyer of health care services. The MMA is best known for establishing a new prescription drug benefit for seniors, but it also calls for, among other things, improvements in chronic care services; the establishment of special-needs plans, health savings accounts, and medication therapy management; pay-for-performance pilot programs; and technology upgrades that will allow for electronic prescriptions and medical records. These concepts aren't necessarily new; EMRs have been around since the 1960s. They just need a buyer to push them toward wider adoption and implementation.

Substantial improvements in the U.S. health care system are possible if we can effectively implement the innovations we've already created. And the U.S. government, as buyer, will need to push for that to happen.

Albert Walker
Partner
Pelorus Management Consultants
Livingston, New Jersey

Herzlinger responds: Albert Walker appears to believe that we do not need any more innovations in health care. Rather, the U.S. government should compel the dissemination of the innovations he claims already exist, such as electronic medical records. Like others who favor increased government control of health care, he deprecates consumers' ability to spur helpful innovation; but if consumers are as stupid and vain as Walker thinks, how did they cause complicated products like cars and computers to become better and cheaper?

When it comes to health care, Walker's assertions about the effects of consumer control are simply wrong, as my book *Consumer-Driven Health Care* demonstrates. The consumer-driven health care system in Switzerland is both better and cheaper than the U.S. health care system – and it is unlike the government-controlled systems in the UK and Canada, which save money by denying care to the sick. His assertion about the lack of preventive care in consumer-driven systems is also wrong. A recent McKinsey survey found that those people enrolled in high-deductible plans, virtually all of which offer complete coverage of preventive care, practiced more self-care than they did when they were fully insured. Equally wrong is Walker's claim about the current feasibility of EMRs. The U.S. health care system lacks even the uniform data standards needed to make them happen – largely because of the government's micromanaged pricing system, which strangles innovation.

Walker wants to send U.S. health care back to the USSR – back to a system in which government wisdom and innovation compensate for consumers' frivolity and ignorance. This is not a trip most Americans – or most former citizens of the Soviet Union – would favor.

Change Management in Government

Frank Ostroff's May 2006 article, "Change Management in Government," tackles important questions about whether best practices from the private sector can cross over into the public sector. "What lessons can we take from business?" has been a challenge to government leaders for at least 30 years, and the results have been mixed. Either the implanted business practice flounders in an unfamiliar political environment, or the host agency's immune system rejects the implant. Business implants have failed, in part, because agencies' capacity to change their methods of delivering services has been modest. For instance, it's extremely difficult for government agencies to switch financial or human resources from low-return areas to higher-return areas if citizens have no effective choice of supply. Additionally, public sector organizations find it difficult to experiment with change because the political process looks for instant scalability and has a low tolerance for varying levels of service in different parts of the sector.

I can see three possible complications in Ostroff's methods for enacting change at government organizations. First, improving performance against an agency's mission is a relatively straightforward task when everyone agrees on the desired outcomes. However, such improvements are much more difficult to achieve when objectives clash, as they often do in government. It is perhaps significant that the three organizations cited in the article mainly have complementary objectives or work on a project basis. Even in the OSHA example, though, distinguishing the mission from the change effort will reveal the possible tension between establishing safety measures and levying compliance costs on American businesses.

Second, performance against mission is hard to demonstrate when the mission is preventive; it may not be immediately clear how many negative outcomes the agency averted. An agency may experience a high number of failures yet demonstrate outstanding overall performance.

Third, public sector leadership is different from private sector leadership. Public sector leaders may be either political appointees or career administrators who are responsible for carrying out others' policies. The appointee may struggle to build effective working relationships with staffers who are operating in a different context from his or her own. The career administrator, who may work with a series of politicians during his or her professional life, may be wary of becoming too closely identified with the rhetoric and programs of any one politician.

The danger in promoting lessons from another sector (or even another industry) is that it is all too easy for the opponents of change to deny the leader that last crucial 10% of effort because they haven't seen the best practices work in their own environment. Lasting reform is most likely to come from internal reform.

Ian B. Beesley
Chairman
Wisdom of the Ancients Consulting
London

Ostroff responds: The three U.S. government agencies I discuss in the article provide the strongest evidence for my response to Ian Beesley. The organizations are quite different from one another: The Occupational Safety and Health Administration (OSHA) is a regulatory agency with enforcement responsibilities. Its mission is to ensure the safety and health of American workers. The Government Accountability Office (GAO) is the investigatory arm of the U.S. Congress. Its mission is to support Congress and help improve performance and accountability in the federal government. The U.S. Special Operations Command is an elite military force. Its mission is to conduct global operations against terrorist networks.

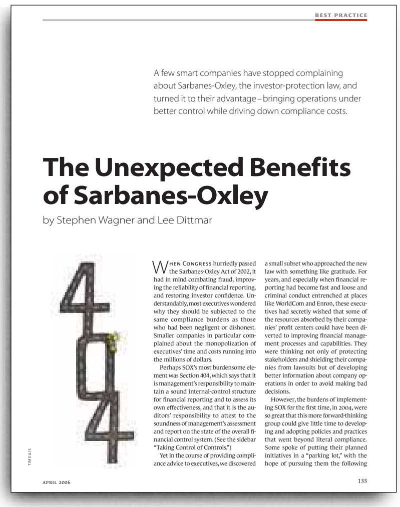
All three organizations utilized best practices from wherever they could find them – private sector, the public sector, or within themselves. At OSHA, for example, a cross-functional, multilevel employee change team with external support identified the relevant and highest-impact best practices and then tailored their application to OSHA's particular situation and environment. The employees' extensive involvement in all phases of the overall change effort generated an extraordinarily high degree of internal "ownership" of the recommendations that were made and the changes that were implemented. By choosing a proactive, problem-solving enforcement strategy and developing the organizational capacity to execute it, OSHA's developed a highly effective "third way" of improving performance while avoiding the traditional zero-sum trade-off of safety versus compliance costs.

Despite their differences, all three organizations successfully applied the five principles described in the article to implement deep changes throughout their systems – including leadership approach, structure, processes, infrastructure (including technology), people, and performance management – and to achieve significant, sustained improvement in performance against their missions. Their clear success suggests that a wide range of other government agencies could use the five principles to do the same.

The Unexpected Benefits of Sarbanes-Oxley

Stephen Wagner and Lee Dittmar's April 2006 article, "The Unexpected Benefits of Sarbanes-Oxley," suggests that the biggest advantages of implementing controls under Sarbanes-Oxley are mostly administrative. That is, as a result of SOX, we have more-efficient accounting procedures, less duplication of data entry and checking, clearer definitions of the content of reports, more standardization of functions across different divisions or geographic locations, and so on. All of these changes obviously create organizational improvements.

But Accounting is not there just to show the numbers. If Sales says it sold one million widgets at $10 each, we don't learn anything new when Accounting reports that the total amount


BEST PRACTICE

A few smart companies have stopped complaining about Sarbanes-Oxley, the investor-protection law, and turned it to their advantage – bringing operations under better control while driving down compliance costs.

The Unexpected Benefits of Sarbanes-Oxley

by Stephen Wagner and Lee Dittmar

When Congress hurriedly passed the Sarbanes-Oxley Act of 2002, it had in mind combating fraud, improving the reliability of financial reporting, and restoring investor confidence. Understandably, most executives wondered why they should be subjected to the same compliance burdens as those who had been negligent or dishonest. Smaller companies in particular complained about the monopolization of executives' time and costs running into the millions of dollars.

Perhaps SOX's most burdensome element was Section 404, which says that it is management's responsibility to maintain a sound internal-control structure for financial reporting and to assess its own effectiveness, and that it is the auditors' responsibility to attest to the soundness of management's assessment and report on the state of the overall financial control system. (See the sidebar "Taking Control of Controls.")

Yet in the course of providing compliance advice to executives, we discovered a small subset who approached the new law with something like gratitude. For years, and especially when financial reporting had become fast and loose and criminal conduct entrenched at places like WorldCom and Enron, these executives had secretly wished that some of the resources absorbed by their companies' profit centers could have been diverted to improving financial management processes and capabilities. They were thinking not only of protecting stakeholders and shielding their companies from lawsuits but of developing better information about company operations in order to avoid making bad decisions.

However, the burdens of implementing SOX for the first time, in 2004, were so great that this more forward-thinking group could give little time to developing and adopting policies and practices that went beyond literal compliance. Some spoke of putting their planned initiatives in a "parking lot," with the hope of pursuing them the following

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of sales invoiced was $10 million. The accounting group's broader function is (or should be) helping senior management see where income is too low and how it can be increased, or where costs are too high and how they can be decreased. Maybe the company gave its customers too many discounts; maybe there were too many product returns. The accounting group can compare the ratio of administrative expenses to sales across divisions and determine where to make improvements. It can identify obsolete materials in inventory. It can check whether the receivables are being collected quickly enough. Using these data, senior management can take measures to improve the operational and financial efficiency of the organization. In some cases, a detailed perusal of the financial data may uncover fraud.

The controls required by Sarbanes-Oxley are necessary if the accounting data are to be correct and useful. But accounting procedures and data aren't there just for administrative purposes; they're also there to improve the company's net earnings.

Peter Van der Heyden
Consultant
Asesoria Más +
Puebla, Mexico

Wagner and Dittmar respond: Peter Van der Heyden is correct in stating that "Accounting is not there just to show the numbers." Indeed, at top-performing firms, the role of corporate finance has broadened from retrospective (producing financial statements) to prospective (producing insights into the business). Forward-thinking accounting and corporate finance departments are participating in their companies' strategic planning processes; they're improving executives' decision making and contributing to the bottom line.

But there is a serious issue that Sarbanes-Oxley initiatives helped to expose and that companies are starting to address: Before the advent of SOX, the quality of information that finance executives received was often insufficient for them to draw meaningful conclusions. Supporting this observation is a 2005 survey sponsored by Deloitte Consulting (www.deloitte.com/us/IQmatters) in which fewer than half the respondents believed they had achieved their information-quality objectives. Thus, while we agree that "administrative" benefits should not be the sole outcome of Sarbanes-Oxley, we also note that these gains are a necessary antecedent to operational and bottom-line improvements. That is, it's tough to make good decisions when you have bad data.

Many benefits can be extracted from the compliance process; space constraints allowed us to present only a few case studies. Leaders at world-class companies will discover their own opportunities for improvement rather than getting bogged down in the minutiae of documentation and testing.

Match Your Sales Force Structure to Your Business Life Cycle

In "Match Your Sales Force Structure to Your Business Life Cycle" (July–August 2006), Andris A. Zoltners, Prabhakant Sinha, and Sally E. Lorimer remind us of the importance of dynamically aligning sales resource levels with the life-cycle stage of a business. However, with a few exceptions, sales force sizing cannot be reliably carried out using aggregate metrics of central tendency, such as overall sales force averages for costs, revenues, and profit margins. Only in high-density, highly engineered territories such as the pharmaceutical industry, consumer packaged goods, and call centers can these methods and metrics yield good estimates of optimal sales force size.

Most business-to-business sales forces are more complex and fluid, performing multiple sales roles across multiple job titles, product sets, market segments, competitive settings, and account maturities. These complexities mean that sales planners need to know what their marginal costs, revenues, and gross margins will be if the sales head count is changed. For example, when large sales forces respond to competition by seeking to increase market share, marginal as well as total selling costs per transaction tend to climb because transaction expenses and head counts are increased. Once marginal costs and revenues start behaving differently, historical averages become poor predictors.

By focusing on marginal metrics of sales response, a company can model the unique characteristics of each internally clustered type of sales job or territory. These models can lead to sharpened rate-of-change decision tools for predicting selling costs, close rates, account loads, product mix, margins, and churn rates in each cluster. They also can include each new salesperson's expected ramp-up time, predict the effect that transferring current accounts into new territories may have on attrition, and determine whether any sales uplift or erosion may occur in the territories from which the accounts were transferred.

The relation between sales force importance and a business's life cycle depends, finally, on the environment in which a product or service is being sold. If the market is savvy and the vendor has established strong coverage and credibility, a business may rely less on selling during the growth phase than it once did. But as long as products and feature-benefit sets continue to change, or a company's competitive position remains challenged as competitors match the firm's internal competencies, sales force importance will remain high in the overall marketing mix, even into market maturity.

Edward A. Francisco
Managing Partner
CRMlogics Consulting
Dallas

Zoltners, Sinha, and Lorimer respond: Edward Francisco asserts that "with a few exceptions, sales force sizing cannot be reliably carried out using aggregate metrics of central tendency," and, therefore, companies should focus on "marginal metrics of sales response." But he is mistaken when he interprets our article to mean that we suggest aggregate measures can be used for sales force sizing. In fact, we specifically advocate using marginal metrics in our sizing table. Marginal metrics have been the preferred way of sizing for many years. That's what incremental sales are all about, even in "high-density, highly engineered territories." What we propose is that companies take this idea of incremental sales even further and assess carryover, the future impact of current selling efforts.

Francisco also challenges a perceived premise of our article: that sales force resource levels should be low when companies are in a mature stage. We make no such claim and agree with him that "the relation between sales force importance and a business's life cycle depends, finally, on the environment." Our focus is on what issues sales leaders should concentrate on at each stage in the life cycle. In maturity, most companies benefit more by enhancing the effectiveness of the selling organization than by worrying about size. The same marginal approach that is used for sizing can be used to enhance effectiveness by better allocating sales resources to customers, markets, products, or sales force activities.

It is impossible to draw general conclusions about sales force sizing and go-to-market strategy. There are always situations that break the rules. However, valuable processes are available to help companies with these decisions.

On a slightly different note, in "The Sales Learning Curve" (July–August 2006), Mark Leslie and Charles A. Holloway propose that high-tech start-ups can mistakenly scale their sales organizations too fast. We find this to be a valuable insight that runs counter to the suggestion in our article that start-ups tend to undersize. Perhaps the mediator for the two differing conclusions is uncertainty. In low market- or product-uncertainty environments, the undersizing error tends to be more frequent, but in high-uncertainty environments with strong learning-curve effects, getting it right first and then scaling the organization is the best approach.

Building the Green Way

If creating and operating a green building were as easy as Charles Lockwood suggests in "Building the Green Way" (June 2006), no one would build any other type. While there are benefits to going green, getting there is not always easy. For example, the author cites presumed experts who warn of supposed health risks from vinyl flooring, but he should also note that all materials have environmental impacts.

Polyvinyl chloride (PVC) is regulated for safety by the Food and Drug

Administration as the material of choice for blood bags and medical tubing. It is widely used in pipes to deliver safe drinking water, and it passes muster with the Consumer Product Safety Commission for use in toys. Many products made of vinyl (and other materials) can meet standards for low emissions of volatile organic compounds. The draft report of the PVC Task Group of the U.S. Green Building Council and the final report on vinyl's life cycle from the European Commission both found vinyl products as acceptable as – and in some cases preferable to – products made of competing materials.

Tim Burns
President and CEO
The Vinyl Institute
Arlington, Virginia

Lockwood responds: Tim Burns's insistence that widespread use of a product denotes safety is absurd. Burns draws his claims about the PVC Task Group from a 2004 draft report, marked "do not cite or quote," that does not vindicate PVC as a building material. The U.S. Green Building Council is still gathering research and reviewing more than 2,000 comments it received on that draft. It will not make a final determination about awarding credits to buildings that do not use PVC products until it issues its final report later this year.

Hundreds of studies have identified many hazards inherent in the manufacture, use, and disposal of PVC (vinyl) products. Kaiser Permanente has stated that "no less than four PBTs (persistent bioaccumulative toxins) are directly associated with PVC manufacturing, use, and disposal: cadmium, lead, mercury, and dioxins and furans." The Fire Brigades Union of Great Britain has urged eliminating PVC products in buildings because "the combustion of PVC…in a fire leads to the release of dioxins and furans, which may then be spread over a wide area by the smoke plume." In his briefing report, "Environmental Impacts of Polyvinyl Chloride (PVC) Building Materials," Columbia University research scientist Joe Thornton found that "the common practice of storing blood and drug formulations in PVC bags causes phthalates to leach into the contents of the bag…. Newborn infants that receive a single blood transfusion have been found to have extremely high levels of phthalates in their systems."

One goal of green building is to remove the negative environmental and human health impacts associated with building materials. Rather than trying to justify the status quo, the Vinyl Institute should learn from paint manufacturers. Forty years ago, they sold lead paint across the country. Today, they are producing lead-free low- and zero-VOC paints. Challenging the status quo and doing things differently, and better, is how we improve the world.

Selling the Sales Force on Automation

Mark Cotteleer, Edward Inderrieden, and Felissa Lee, the authors of "Selling the Sales Force on Automation" (Forethought, July–August 2006), merely restate what those in the field have known for some time: Sales force automation tools produce internal efficiencies, and often the value proposition for the end user can become lost in translation. What they fail to point out is that the most commonly used SFA products also fall short of providing an action-based training platform that engages sales professionals. Early on, it became clear that the "What's in it for me?" model was losing ground to complex and less-than-motivating systems-training methods, such as computer-based models and Web site replays. So before you call for mandatory compliance, I would suggest a review of the training delivery process to see whether it passes the snooze test!

I agree that "ramp" and ease of transition are essential to the overall success of adaptation. However, "excusing temporary drops in performance and giving breaks on quotas" seems like an academic's approach to a complex business issue. There is more risk in relying on this type of crutch than in exploring alternate motivation methods. Sales organizations, which have typically concentrated performance management solely on revenue-generating activities, are not communicating clearly or compensating based on the changing job responsibilities and skills now required in the field.

To adopt SFA successfully, a company needs to integrate it beyond the level of the user, the sales unit leader, and the IT department. SFA has to become part of the overall corporate culture. Companies can achieve that end not by mandating usage but by making sure human-capital management experts assess training programs and offering compensation alternatives to improve compliance.

Barbara McCormack
Vice President, Sales
Whitney International
Boston

Cotteleer, Inderrieden, and Lee respond: We are delighted that Barbara McCormack agrees with our central thesis that it is only when a company figures out how to embed the automation system into its culture that the change pays off. Certainly, those who have already struggled to deploy SFA have learned some of these lessons. Our intent is to provide insight to those who have yet to embark on such efforts.

In our view, mandatory use puts more pressure on the firm than on the individual. The reality is that many sales representatives do derive a large percentage of their pay from compensation plans, and managers do need to balance their SFA plans with the well-documented tendency of performance to dip following implementation and with sales representatives' reluctance to take time from core field activities for training. Avoiding excessive turnover demands that SFA be a well-supported and effectively taught part of company culture.

Harris Interactive provides an outstanding example of these principles in action. Having struggled with earlier efforts, it incorporated multiple perspectives and deployed a system that the whole firm, including sales, research, and finance, saw value in using. Harris also supported the rollout by assisting in the conversion of sales representatives to SFA. Through the company's integration with finance, it effectively made the system's use mandatory, promoting long-term assimilation.

Special Double Issue on Sales

HBR Editor Thomas A. Stewart finds it "puzzling" that A-list business schools don't offer much of a sales curriculum. The reason, Stewart says in the magazine's excellent sales issue (July–August 2006), is that students of sales are split into two camps.

The academic camp attempts to emulate the hard sciences through data analysis, process description, and conceptual models. It sees sales mainly as an issue of process management and couches human interactions in behavioral terms. This scientific approach may have worked well for finance, marketing, production, and strategy, but it does not work well for sales, where close encounters of the human kind are essential.

The other camp – people writing the so-called popular sales literature – is frequently soft, preachy, motivational, and not rigorous. Marketers, financiers, and strategists buy books by Harvard Business School professors; salespeople buy "wisdom" books from Jeffrey Gitomer and Zig Ziglar. Those in the academic camp may look down their noses, but popular-camp authors do seem better at selling.

One camp offers the rigor of science; one speaks to people. Each disdains the other. The dichotomy is unfortunate because data and wisdom work better together than apart. The special issue reflects the split, and HBR seems to have a foot in both camps.

By my subjective reading, six of your seven cover articles deal with managing sales – classic B-school stuff. The noteworthy exception is your centerpiece interview. In "Leading Change from the Top Line," Schering-Plough CEO Fred Hassan talks about the power of philosophies, attitudes, and trust building in sales: pure popular-camp material.

By contrast, with a 30-year trove of classic sales articles from which to choose, HBR's editors decided to reprint three (again, my subjective count) on the "popular" subject of humans engaged in commerce and only one on "management."

An article on the world's greatest financier, manufacturer, strategist, or marketer would probably read like something from the academic camp.

Yet Joe Girard, whom HBR calls "the world's greatest salesperson," advises, simply, love your customer. Girard is not exaggerating or being metaphorical – he's being real.

MBA courses that teach sales as love are in short supply today. That's hardly puzzling; B schools have chosen to feed the head and not the heart. They don't know what to do with a "heart" topic when it comes along – so they ignore it. HBR faces the same dilemma. But to its credit, even though it lies solidly within the academic camp, the magazine highlights a few articles that speak to the humanity at the heart of selling. Good for you; maybe some curriculum designers are listening.

Charles H. Green
President
Trusted Advisor Associates
Morristown, New Jersey

For the past five years, the focus has been on cost-cutting your way to profit growth as opposed to tackling the tougher challenge of growing the top line organically. I wonder when more leaders will discover that minimizing the variation in performance across the sales organization is probably one of their biggest growth opportunities in the short to medium term. There is generally a ten-to-one range in performance across sales organizations, indicating something akin to a 75/25 rule at work in most companies, where 25% of the organization is generating 75% of the overall results. By improving performance in the middle 50% of your sales organization to even one-third the level of the most productive salespersons, you can generate something approaching a 30% improvement in revenue over a one- to three-year horizon. Most firms, however, continue to concentrate their energies on eliminating the lowest performers, rather than improving the performance of those in the middle.

Randy Hull
Managing Director
Prime Resource Group
Minneapolis

When I was passing through the Montreal airport, a newsstand clerk told me your special double issue on sales cost $25 Canadian. I figured it would be worth the price. I was wrong.

Save for the excellent contributions of Joe Girard, Neil Rackham, and Fred Hassan; the helpful numbers by CSO Insights; and Mark Leslie and Charles A. Holloway's "The Sales Learning Curve," the issue would have been a bust at half the price. I had expected to hear from mostly billion-dollar-plus CROs. Instead, I found only the boring theoretical musings of 11 professors, nine consultants, four editors, and one self-aggrandizing weirdo sociologist who I doubt has ever known a chief revenue officer.

Frank Robinson
CEO
Product & Market Development
Santa Barbara, California

Executive Summaries

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Harvard Business Review

www.hbr.org

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> **"Emerging-market businesses both circumvent institutional voids and tailor their strategies to local markets better than multinational companies do."**
> – page 60

Strategy & Competition

Cover Story

60 | Emerging Giants: Building World-Class Companies in Developing Countries

Tarun Khanna and Krishna G. Palepu

Over the past 20 years, waves of liberalization have all but washed away protectionist barriers in developing countries. As multinational corporations from North America, Western Europe, Japan, and South Korea stormed into the emerging markets, many local companies lost market share or sold off businesses – but some fought back. India's Mahindra & Mahindra, China's Haier Group, and many other corporations in developing countries have held their own against the onslaught, restructured their businesses, exploited new opportunities, and built world-class companies that are today giving their global rivals a run for their money.

In this article, the authors, citing the results of their six-year study of "emerging giants," describe the three strategies these businesses used to become effective global competitors – despite facing financial and bureaucratic disadvantages in their home markets.

Some capitalized on their *knowledge of local product markets.* The Philippines' Jollibee Foods, for instance, has profitably battled McDonald's because it realizes that Filipinos like their burgers to have a particular soy and garlic taste.

Some have exploited their *knowledge of local talent and capital markets,* thereby serving customers both at home and abroad in a cost-effective manner. India's software companies, for instance, recognized the possibility of providing services to overseas customers at least a decade before Western companies even considered hiring Indian software professionals.

And some emerging giants have exploited *institutional voids* to create profitable businesses. China's Emerge Logistics, for instance, helps foreign companies navigate the country's disjointed transportation system and baffling bureaucracy, guiding them all the way from ports to retail outlets.

The authors' research indicates there's more than one way to skin the proverbial cat: Some emerging-market companies compete in several countries, but others sell only at home. Emerging giants can be successful even if they don't have global footprints, Khanna and Palepu conclude.

Reprint R0610C; HBR OnPoint 1459; OnPoint collection "Winning in the World's Emerging Markets" 1455

IDEAS & TRENDS

FORETHOUGHT

20 | The Rise of Corporate Nationality The nationality of global companies has become less ambiguous and more strategically important in recent decades. **Reprint F0610A**

Business Lessons from Leeches The editor of the *Annals of Improbable Research* observes that leeches have a thing or two to teach us about so-called best practices. **Reprint F0610B**

The New Indian Consumer According to the Gallup Organization, consumerism is becoming a way of life in India. **Reprint F0610C**

Embrace the Dark Side Consumers these days prefer authenticity to purity, so brands should capitalize on their flaws, or "shadow" attributes. **Reprint F0610D**

Get Your Act Together Consistent corporate communications depend less on specific organizational structures than on carefully designed strategy. **Reprint F0610E**

Are You Ready for E-tailing 2.0? E-commerce is shifting – from *making purchases* online to *going shopping* online, a social experience in which people interact in a 3-D Web space. **Reprint F0610F**

Responsibility Junkie Boston Pops conductor Keith Lockhart discusses the challenges of filling big shoes and managing a team whose members all aspire to be number one. **Reprint F0610G**

Apocalypse Now? Predictions of global economic integration are at odds with the facts: Most types of economic activity that might cross borders are still largely focused at home. **Reprint F0610H**

Book Reviews Featuring *The World's Newest Profession: Management Consulting in the Twentieth Century,* by Christopher D. McKenna, and reviews of three other books.

MARKETING

HBR CASE STUDY

37 | What Serves the Customer Best?

Paul F. Nunes and Woodruff W. Driggs

As president of Scotch whisky maker Glenmeadie, Bob Littlefield is pleased to see the results of his CMO's recent marketing initiatives. There are new interactive capabilities on the company's Web site, a product information call center, and numerous other customer interfaces designed to deepen consumers' connection to the brand. Thanks to these front-end innovations, sales are up – and largely because of more loyal purchasing behavior, research shows.

But not all the news is good. Glenmeadie's CFO says the marketing programs account for half the company's costs. Meanwhile, Glenmeadie's master distiller, Ellis Cameron, resents the fact that, with so much money going toward enhancing customer relations, there isn't enough left for his R&D efforts. In a meeting with Bob, he launches into a tirade about priorities. "There's an old expression," Ellis says. "Build a better mousetrap, and the world will beat a path to your door." Glenmeadie, he says, is neglecting the customer's basic need. "We've given up on redesigning his mousetrap and are trying to trap him instead!"

Four commentators on this fictional case study provide varying perspectives. David Herman, president of luggage maker Hartmann, criticizes Glenmeadie's marketing for its lack of focus and notes that Ellis's product innovation idea – single-cask bottling – offers the best way to connect with upscale customers. Marketspace's president, Jeffrey Rayport, disagrees that Glenmeadie's marketing to date has been anything but an unalloyed success. Stephen Dull, vice president of strategy at VF, explains why Glenmeadie needs to do more to understand its consumers on a deeper level. And Joe Scafido, who leads innovation at Dunkin' Brands, outlines the organizational solution his company devised to get potentially competitive factions working together.

Reprint R0610A
Reprint R0610X: Case only
Reprint R0610Z: Commentary only

HUMAN RESOURCES

53 | Sleep Deficit: The Performance Killer

A Conversation with Harvard Medical School Professor Charles A. Czeisler

Companies today glorify the executive who logs 100-hour workweeks, the road warrior who lives out of a suitcase in multiple time zones, and the negotiator who takes a red-eye to make an 8 AM meeting. But to Dr. Charles A. Czeisler, the Baldino Professor of Sleep Medicine at Harvard Medical School, this kind of corporate behavior is the antithesis of high performance. In fact, he says, it endangers employees and puts their companies at risk.

In this interview, Czeisler describes four neurobiological functions that affect sleep duration and quality as well as individual performance. When these functions fall out of alignment because of sleep deprivation, people operate at a far lower level of performance than they would if they were well rested. Czeisler goes on to observe that corporations have all kinds of policies designed to protect employees – rules against smoking, sexual harassment, and so on – but they push people to the brink of self-destruction by expecting them to work too hard, too long, and with too little sleep. The negative effects on cognitive performance, Czeisler says, can be similar to those that occur after drinking too much alcohol: "We now know that 24 hours without sleep or a week of sleeping four or five hours a night induces an impairment equivalent to a blood alcohol level of .1%. We would never say, 'This person is a great worker! He's drunk all the time!' yet we continue to celebrate people who sacrifice sleep for work."

Czeisler recommends that companies institute corporate sleep policies that discourage scheduled work beyond 16 consecutive hours as well as working or driving immediately after late-night or overnight flights. A sidebar to this article summarizes the latest developments in sleep research.

Reprint R0610B

ORGANIZATION & CULTURE

72 | The Tools of Cooperation and Change

Clayton M. Christensen, Matt Marx, and Howard H. Stevenson

Employers can choose from lots of tools when they want to encourage employees to work together toward a new corporate goal. One of the rarest managerial skills is the ability to understand which tools will work in a given situation and which will misfire.

Cooperation tools fall into four major categories: power, management, leadership, and culture. Choosing the right tool, say the authors, requires assessing the organization along two critical dimensions: the extent to which people agree on *what they want* and the extent to which they agree on *cause and effect,* or how to get what they want. The authors plot on a matrix where various organizations fall along these two dimensions. Employees represented in the lower-left quadrant of the model, for example, disagree strongly both about what they want and on what actions will produce which results. Those in the upper-right quadrant agree on both dimensions.

Different quadrants call for different tools. When employees share little consensus on either dimension, for instance, the only methods that will elicit cooperation are "power tools" such as fiat, force, and threats. Yugoslavia's Josip Broz Tito wielded such devices effectively. So did Jamie Dimon, current CEO of JPMorgan Chase, during the bank's integration with Bank One. For employees who agree on what they want but not on how to get it – think of Microsoft in 1995 – leadership tools, such as vision statements, are more appropriate.

Some leaders are blessed with an instinct for choosing the right tools – Continental Airlines' Gordon Bethune, General Electric's Jack Welch, and IBM's Lou Gerstner are all examples. Others can use this framework to help select the most appropriate tools for their circumstances.

Reprint R0610D; HBR OnPoint 1458; OnPoint collection "What You *Really* Need to Know About Change" 1454

ORGANIZATION & CULTURE

THE HBR INTERVIEW

82 | Ideas as Art

James G. March

Interviewed by Diane Coutu

Three years ago, consultants Laurence Prusak and Thomas H. Davenport asked prominent management thinkers to name their gurus and reported the results in HBR. James G. March appeared on more lists than any other person except Peter Drucker.

A professor emeritus in management, sociology, political science, and education at Stanford University, March has taught courses in subjects as diverse as organizational psychology, behavioral economics, leadership, rules for killing people, friendship, computer simulation, and statistics. He is perhaps best known for his pioneering contributions to organization and management theory. March's accomplishments in that field, and in many others, have conferred on him an almost unprecedented reputation as a rigorous scholar and a deep source of wisdom. As University of Chicago professor John Padgett wrote in the journal *Contemporary Sociology,* "March's influence, unlike that of any of his peers, is not limited to any possible subset of the social science disciplines; it is pervasive."

March approaches thought aesthetically; he cares that ideas have "some form of elegance or grace or surprise." His poetic sensibility can be felt in the metaphors he has created over the years – the "garbage can theory" of organizational choice, for instance, and the "hot-stove effect" in learning.

In this edited interview with HBR senior editor Diane Coutu, March shares his thinking on aesthetics, leadership, the role of folly, and the irrelevance of relevance when it comes to the pursuit of ideas. He also comments on the fundamental differences between academic and experiential knowledge, underscoring the need for both.

Reprint R0610E

92 | Strategies for Two-Sided Markets

Thomas Eisenmann, Geoffrey Parker, and Marshall W. Van Alstyne

If you listed the blockbuster products and services that have redefined the global business landscape, you'd find that many of them tie together two distinct groups of users in a network. Case in point: The most important innovation in financial services since World War II is almost certainly the credit card, which links consumers and merchants. The list would also include newspapers, HMOs, and computer operating systems–all of which serve what economists call two-sided markets or networks. Newspapers, for instance, bring together subscribers and advertisers; HMOs link patients to a web of health care providers and vice versa; operating systems connect computer users and application developers.

Two-sided networks differ from traditional value chains in a fundamental way. In the traditional system, value moves from left to right: To the left of the company is cost; to the right is revenue. In two-sided networks, cost and revenue are both to the left and to the right, because the "platform" has a distinct group of users on each side. The platform product or service incurs costs in serving both groups and can collect revenue from each, although one side is often subsidized.

Because of what economists call "network effects," these platform products enjoy increasing returns to scale, which explains their extraordinary impact. Yet most firms still struggle to establish and sustain their platforms. Their failures are rooted in a common mistake: In creating strategies for two-sided networks, managers typically rely on assumptions and paradigms that apply to products without network effects. As a result, they make many decisions that are wholly inappropriate for the economics of their industries. In this article, the authors draw on recent theoretical work to guide executives negotiating the challenges of two-sided networks.

Reprint R0610F; HBR OnPoint 1463

STRATEGY & COMPETITION

102 | Meeting the Challenge of Corporate Entrepreneurship

David A. Garvin and Lynne C. Levesque

To be competitive, companies must grow innovative new businesses. Corporate entrepreneurship, however, isn't easy. New ventures face innumerable barriers and seldom mesh smoothly with well-established systems, processes, and cultures. Nonetheless, success requires a balance of old and new organizational traits – and unless companies keep those opposing forces in equilibrium, their new businesses will flounder.

The authors describe the challenges companies face when they pursue new businesses, as well as the usual problematic responses to those challenges. Such companies, they say, must perform three balancing acts:

• Develop strategy by trial and error, which includes narrowing potential choices, learning from small samples, using prototypes to test business models, tracking progress through nonfinancial measures, and knowing how and when to pull the plug on a new venture.

• Find the best combination of old and new operational processes by staffing new ventures with "mature turks," changing veterans' thinking, knowing which capabilities to develop and which to acquire, and having old and new businesses share responsibility for operating decisions.

• Strike the right balance of integration and autonomy by assigning both corporate and operating sponsors to new ventures, establishing criteria for handoffs to existing divisions, and using creative organizational structures.

The authors provide a detailed look at IBM's Emerging Business Opportunity system, which manages all these balancing acts simultaneously.

Reprint R0610G; HBR OnPoint 1462; OnPoint collection "Building Breakthrough Businesses in Established Companies, 2nd Edition," 1456

STRATEGY & COMPETITION

114 | Can Science Be a Business? Lessons from Biotech

Gary P. Pisano

In 1976, Genentech, the first biotechnology company, was founded by a young venture capitalist and a university professor to exploit recombinant DNA technology. Thirty years and more than $300 billion in investments later, only a handful of biotech firms have matched Genentech's success or even shown a profit. No avalanche of new drugs has hit the market, and the long-awaited breakthrough in R&D productivity has yet to materialize.

This disappointing performance raises a question: Can organizations motivated by the need to make profits and please shareholders successfully conduct basic scientific research as a core activity? The question has largely been ignored, despite intense debate over whether business's invasion of basic science – long the domain of universities and nonprofit research institutions – is limiting access to discoveries, thereby slowing advances in science.

Biotech has not lived up to its promise, says the author, because its anatomy, which has worked well in other high-tech sectors, can't handle the fundamental challenges facing drug R&D: profound, persistent uncertainty and high risks rooted in the limited knowledge of human biology; the need for the diverse disciplines involved in drug discovery to work together in an integrated fashion; and barriers to learning, including tacit knowledge and murky intellectual property rights, which can slow the pace of scientific advance. A more suitable anatomy would include increased vertical integration; a smaller number of closer, longer collaborations; an emphasis by universities on sharing rather than patenting scientific discoveries; more cross-disciplinary academic research; and more federal and private funding for translational research, which bridges basic and applied science. With such modifications, science can be a business.

Reprint R0610H

GENERAL MANAGEMENT

126 | What Business Are You In?

Classic Advice from Theodore Levitt

For all the talk about management as a science, experienced executives know that strategic decisions and tactics depend heavily on context. No one understood this better than Theodore Levitt (1925–2006). A Harvard Business School professor renowned as a founder of modern marketing, he sought above all to use his knowledge to serve the needs of businesspeople. In a series of powerfully insightful – and delightfully written – essays in *Harvard Business Review,* he provoked readers to reexamine their settled thinking about vital issues so that they could better meet the needs of customers.

Levitt had the gifts of provocation and generalization, offering ideas that startled readers but compelled them to think creatively and intelligently about their companies. Writing in a period when business was held in far less esteem than it is today, he rejected the easy contempt that many intellectuals had for managers and consumers.

Levitt carried that practical approach to his tenure at *Harvard Business Review* from 1985 to 1989. As one of HBR's most intellectual and most populist chief editors, he understood that the magazine's main purpose was to serve as a kind of sophisticated translation, clarifying authors' raw – and sometimes rough – ideas for impatient, time-pressed readers.

This tribute, a look into one of business's great minds, offers excerpts from six of Levitt's most influential HBR articles:

"Marketing Myopia" (July–August 1960)
"After the Sale Is Over…" (September–October 1983)
"Marketing Success Through Differentiation – of Anything" (January–February 1980)
"Production-Line Approach to Service" (September–October 1972)
"The Globalization of Markets" (May–June 1983)
"Creativity Is Not Enough" (May–June 1963)

Reprint R0610J

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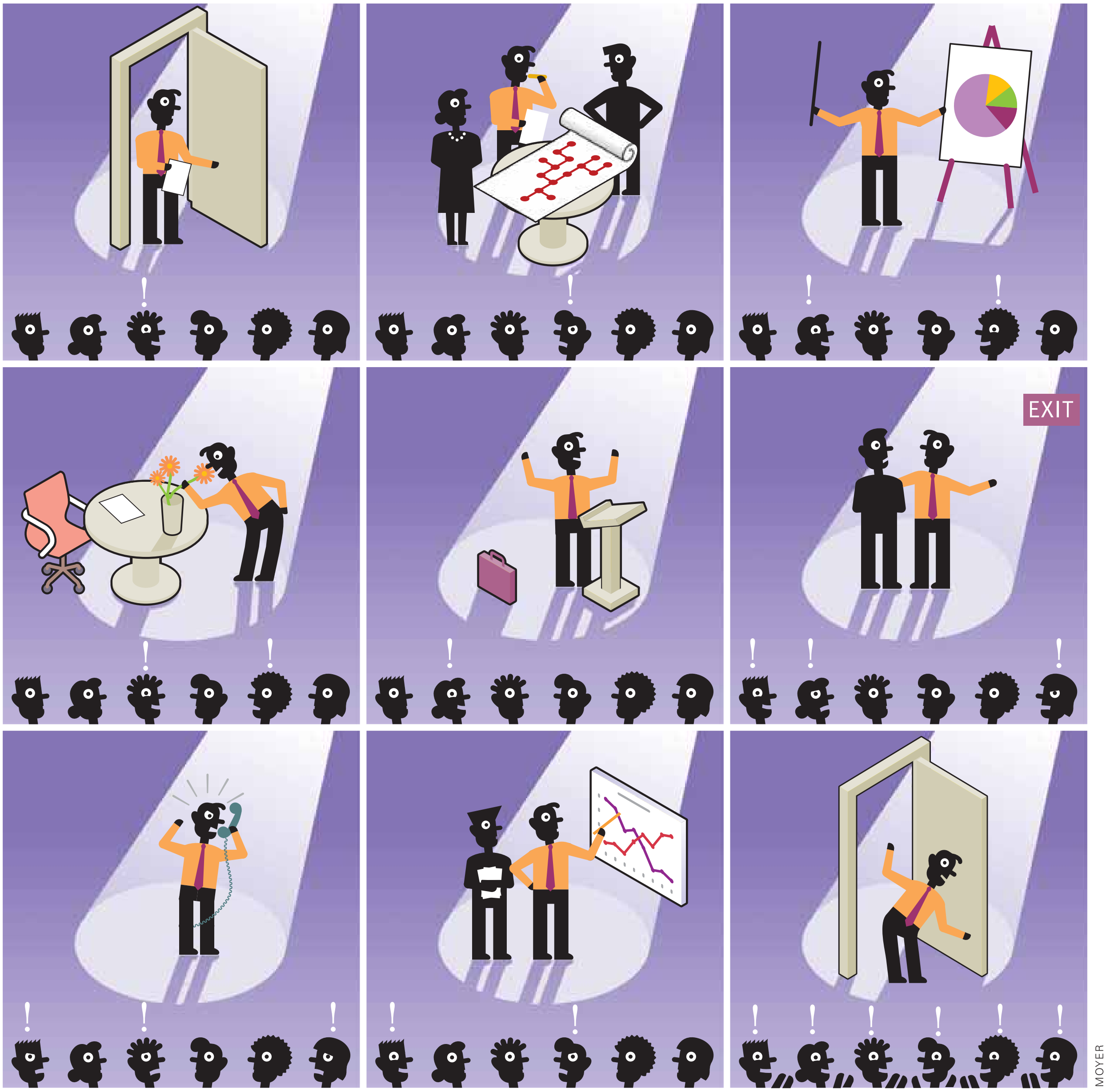

On Stage

Employees are ever alert for signs of competence, vision, and trustworthiness in their leaders. When they see these positive signs, they work harder, contribute better ideas, and stay with the company longer. When they pick up unsettling signals, their performance and loyalty deteriorate.

Because the scrutiny and interpretation are relentless, even trivial things that you say or do have an impact, write Robert Galford and Anne Seibold Drapeau in "The Enemies of Trust" (HBR February 2003). For a leader, there's "no such thing as a casual conversation."

You can't totally manage the signals you send. Even if your intentions are pure and your performance flawless, the authors say, don't be surprised when your most innocuous statements are assigned deep, sinister meaning – or are assigned very different meanings by different people. But if you communicate consistently and clearly, especially in times of crisis, and don't shy away from the tough issues, you'll engender the trust and confidence that you need to succeed.

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