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THE HARD TRUTH ABOUT INNOVATION

It's One Part Creativity, One Part Discipline.

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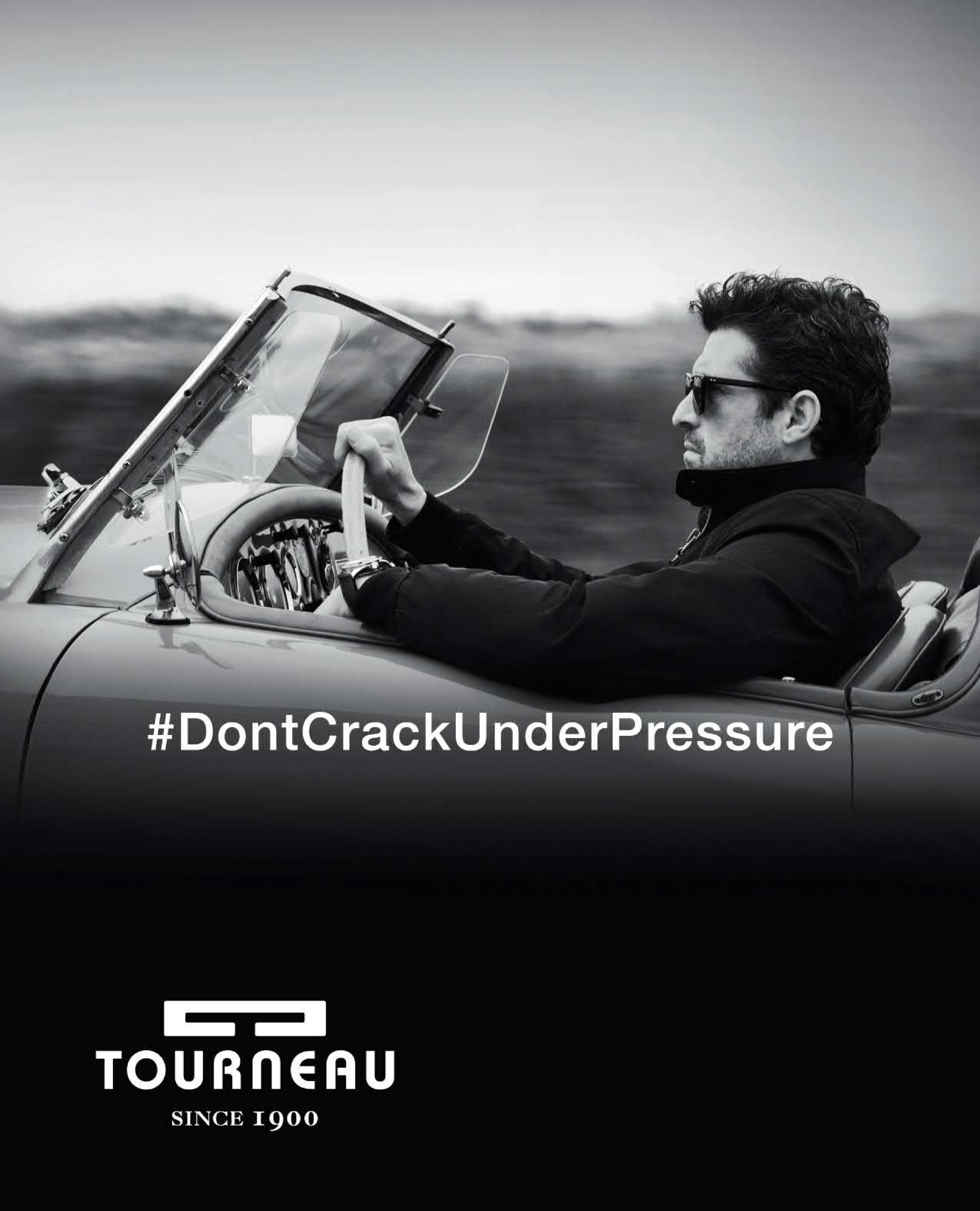
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THE PRICE OF "SUCCESS"

Associate director of product management Emily Neville-O'Neill and Adi Ignatius

EVER SINCE ADAM SMITH noted the benefits of dividing up labor, efficiency has been management's highest goal. Reducing waste and increasing productivity drove the Industrial Revolution and inspired "management science," which holds that efficiency is fundamental to competitive advantage. "The belief in the unalloyed virtue of efficiency has never dimmed," writes Roger Martin in this month's Spotlight (page 41). Today, he adds, efficiency is "promoted in the classrooms of every business school on the planet."

What if that orthodoxy is wrongheaded and dangerous? Martin argues that it has led ineluctably to the intense concentration of wealth and power that creates many losers and far too few winners in business and society at large.

We don't have to accept that outcome, he says. His proposed remedy? Business, government, and education should focus on a less immediate source of competitive advantage: resilience. Two of Martin's ideas to that end—limiting firms' scale via antitrust policy, and introducing friction through trade barriers and other measures—directly challenge many precepts powering platform-based businesses such as Facebook and Amazon.

The key ingredient in Martin's vision is balance—between efficiency and resilience; between short-term realities and the goal of long-term sustainability. The ability to understand and achieve it is, of course, the essence of good leadership.

ADI IGNATIUS, EDITOR IN CHIEF

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In 1994, after HBR published an article he cowrote on an apparel company's novel approach to supply chain, Marshall Fisher got a call from a Wharton grad who'd founded a retailer. "He'd seen the piece and wanted me to help his firm improve performance," Fisher recalls. "There was lots of data to work with, and for a quant jock like me, it was a dream job." He has focused on retail operations ever since. This article, with Santiago Gallino and Serguei Netessine, looks at staffing and training.

72 FEATURE
Retailers Are Squandering Their Most Potent Weapons

When Clayton Christensen asked **Karen Dillon**, a former editor of *Harvard Business Review*, to join him and Efosa Ojomo in examining the role innovation plays in lifting African nations out of poverty, she couldn't say yes fast enough. Dillon and Christensen have written together about innovation in the past, but the topic of this issue's article especially drew her in. "I've loved finding and telling the stories of innovators who've managed to create something valuable where nothing seemed possible," Dillon says. "They're superheroes who are not only creating markets and boosting local economies—they're changing the world."

90 FEATURE
Cracking Frontier Markets

After branding-strategy professor **Mats Urde** suggested in a TV interview that the Swedish monarchy was a brand, he was invited by the Royal Court in Stockholm to present his thinking to the Marshal of the Realm and, later, to interview the king. The resulting research project, conducted with Stephen Greyser and a British colleague, helped clarify the 1,000-year-old monarchy's "brand" and began a 15-year collaboration into the nature of organizational brands—the subject of Urde and Greyser's article in this issue.

80 FEATURE
What Does Your Corporate Brand Stand For?

Early in his career, **Chris Addy** taught middle-school math and science in California. He then decided to redirect his efforts to assist social sector organizations like those that helped him become the first in his family to graduate from college. At the Bridgespan Group, where he leads the philanthropy practice, Addy pairs his analytical rigor with a passion for addressing society's most important challenges. His current focus is on improving capital flows to advance social and environmental well-being. That topic is at the heart of his article, coauthored by Maya Chorengel, Mariah Collins, and Michael Etzel, in this issue.

102 FEATURE
Calculating the Value of Impact Investing

Frédéric Lagrange began working as a travel photographer in 2001—he has captured images in more than 100 countries—before branching out into portraiture and fashion. His natural ability to cross cultural and language barriers allows him to tell human stories from the secluded shores of the Indonesian archipelago to the mountainous terrain of Mongolia and Afghanistan. His work has appeared in *Vanity Fair, Vogue,* and the *New Yorker.*

90 FEATURE
Cracking Frontier Markets

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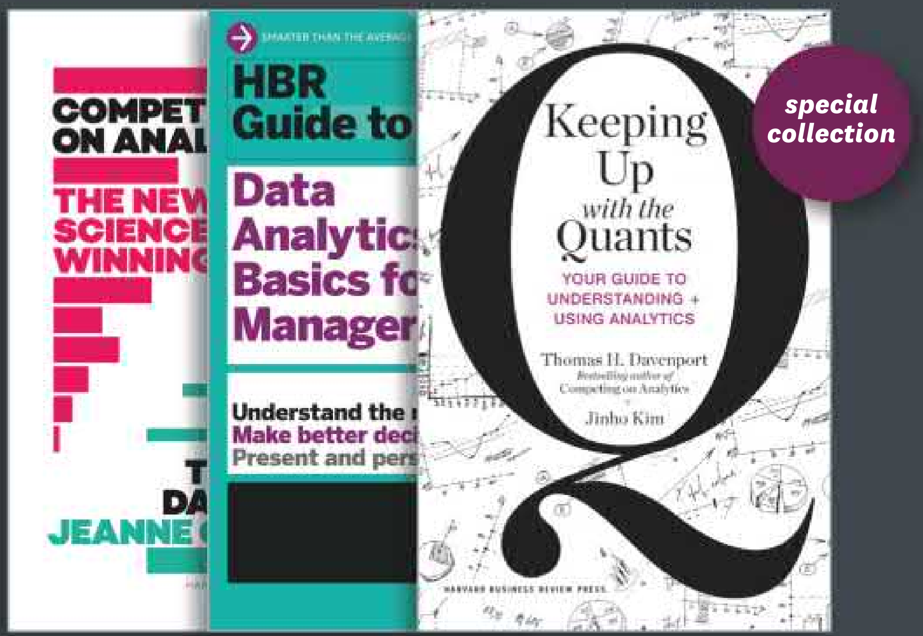

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VOLUME 97, NUMBER 1
JANUARY–FEBRUARY 2019
Printed in the U.S.A.

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IdeaWatch

New Thinking, Research in Progress

Eduardo Martinez, president of the UPS Foundation, tours Panama Beach City, Florida, after Hurricane Michael.

Photography by MATT BURKE

IN THEORY

GIVING AFTER DISASTERS

When corporate aid has the most impact

It's become all too clear in recent years: Catastrophic acts of nature—hurricanes, tsunamis, earthquakes, wildfires—are happening more frequently and causing more destruction. The annual inflation-adjusted global cost of natural disasters has increased sharply, with the average from 2011 to 2015 reaching four times the average from 1980 to 1985. The number of people affected is rising too, often exceeding 300 million in recent years. But traditional sources of funding for disaster recovery, from governments, nonprofits, and NGOs, have not kept pace.

Corporations have stepped in to take up the slack. In 2000 fewer than one-third of the world's 3,000 largest companies donated anything to disaster relief, but by 2015 the share had surpassed 90%, with the average donation having increased tenfold. Among the 500 largest U.S. companies, the share contributing to disaster relief increased from less than 20% in 1990 to more than 95% in 2014.

Seeing this trend, researchers focused on two obvious questions: Does it matter whether the companies furnishing aid have local ties and expertise? And if businesses are spending more in this area, are they and their shareholders benefiting?

In a pair of studies, researchers led by Luis Ballesteros, of George Washington University, utilized a newly created database listing every reported corporate donation made in response to a natural disaster from 2003 to 2013. (They focused on sudden-onset disasters, excluding slow-developing crises such as famines and heat waves.) Drawing on insurance data and other sources, they tracked the human and economic toll of each incident, the speed at which aid arrived, and how quickly and well regions recovered.

In the first study, which examined how disaster-affected societies were helped by corporate aid, the researchers hypothesized that firms with "feet on the ground" and expertise in the region respond more quickly than others after a disaster and that long-term recovery is greater when such companies account for a large share of aid. This hunch didn't relate only to those companies' expertise; such firms have a vested interest in getting infrastructure rebuilt and society functioning smoothly so that they can resume doing business. The researchers also hypothesized that firms leveraging resources specific to their day-to-day operations (say, a mining company that lends earthmoving equipment or a delivery company that offers logistical support) have a faster and greater effect than firms that simply write a check.

To test their hypotheses, the researchers identified pairs of countries with similar attributes that experienced disasters of comparable magnitude but received different levels and kinds of assistance—aid furnished primarily from locally active firms versus aid from distant companies; aid consisting largely of in-kind help versus monetary donations. They examined the size of each country's economy, the level of hardship caused by the event (defined as people killed or adversely affected in other ways), and the volume of news coverage—factors known to influence how quickly aid arrives. As a proxy for recovery levels, they looked at each country's annual growth rate as measured by the UN's Human Development Index.

The results showed that countries with a large share of aid from locally active companies received help more quickly than their counterparts did. Countries where more than 44% of donations came from locally active companies had a 10-year recovery level

that was 145% higher, on average, than that of comparison countries. And countries receiving more help related to firms' core activities got the aid more quickly and had fuller recoveries than their counterparts.

In the second study the researchers explored what companies received in return for their donations. They began by observing that the first company to donate has a sizable influence on the behavior of subsequent donors: In 89% of the cases studied, the initial donation was almost exactly matched by later givers regardless of differences in market value, market share, and financial performance. Hours after the 2010 earthquake in Chile, for example, the multinational mining company Anglo American pledged $10 million, and within days three major competitors contributed the same amount. "There's so much uncertainty when a disaster hits, and firms scramble to figure out how to respond," says Tyler Wry, a University of Pennsylvania professor who served on the research team, explaining this follow-the-leader behavior.

To analyze the business impact of donations, the researchers looked at how a firm's reported revenue in an affected region differed from what could have been expected without the disaster. They found that the impact varied according to firm reputation, as measured by media coverage a year before and a year after the disaster—and here, too, the initial donor exerted a strong effect on subsequent givers. "Regardless of donation size, benefits accrue to well-regarded first movers as well as to firms that mimic their gifts," they write. "In comparison, poorly regarded first movers are punished when offering aid, as are followers who make similar donations." The study also showed that neither the size of the need nor a firm's capacity to give had much effect on how a donation was received. "Regardless of the amount donated, some first movers and their followers are rewarded for their largesse, while others are punished," the researchers write. "In fact, after pledging aid, over half of the firms in our data experienced a dip in local revenue that cannot be explained by the impact of the disaster alone." They add that companies following an ill-regarded first donor may benefit from offering aid that differs from that donor's contribution.

The practical implications for companies are clear. Firms with good reputations can benefit from being the first to step up after a disaster; others stand to gain only if they jump in after a company with a solid reputation and give in a similar way. And local ties are of paramount importance. "The more favorable impact seems to be in settings where companies have their feet on the ground and already have local capacity," says Michael Useem, a University of Pennsylvania researcher and one of the studies' coauthors.

There's also an important implication for society at large. Disasters in underdeveloped economies, where few deep-pocketed businesses are present, are unlikely to attract significant corporate donations. So governments, NGOs, nonprofits, and individuals should be prepared to shoulder much of the burden when disaster strikes those regions.

HBR Reprint F1901A

ABOUT THE RESEARCH *"Masters of Disasters? An Empirical Analysis of How Societies Benefit from Corporate Disaster Aid," by Luis Ballesteros, Michael Useem, and Tyler Wry (*Academy of Management Journal, *2017); "Halos or Horns? Reputation and the Contingent Financial Returns to Non-Market Behavior," by Luis Ballesteros, Michael Useem, and Tyler Wry (working paper)*

CONTINUED ON NEXT PAGE

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IN PRACTICE

Eduardo Martinez

One of the biggest needs after a disaster is logistics—getting food, water, medicine, and other supplies to the affected region. UPS has leveraged its expertise to become a leader in the field, routinely winning awards for its contributions around the world. Eduardo Martinez, the president of the UPS Foundation and UPS's chief diversity and inclusion officer, spoke with HBR about how the company maximizes the benefits of its work. Edited excerpts follow.

What has UPS learned from years of responding to disasters? We focus not just on disaster relief but also on preparedness, postcrisis recovery, and supply chain logistics. We need to play to our strengths to have a multiplier effect. This is not sudden-onset activity that starts when there's a disaster. We devote funding, expertise, and engagement to it year-round.

UPS is a logistics company, so it's obvious how it can help. What about an accounting or a consulting firm? Every private-sector company can play a role. Humanitarian relief agencies need consultancy and technology support. And companies operating in at-risk areas need to become more resilient. A study in New York City after Hurricane Sandy found that 30% to 40% of the small and medium-size businesses affected by the storm never came back. Some communities have appointed "resiliency officers," who coordinate efforts to help companies survive disasters. Private-sector firms can help with endeavors to make smaller companies more resilient.

Do firms ever "help" in ways that are counterproductive? That's a classic problem. After the Haiti earthquake we got a call from a global customer of ours looking to donate thermal blankets—in July, in the tropics. Whenever we get a call from a company offering to send something, we say, "Thank you, hold on, let's check with the people on the front lines." If there's no need for what the company is offering, we'll explain what *is* needed—water, tents, and lanterns. We manage our customers in this way so that we don't clog the supply chain.

What else should companies keep in mind? Not every disaster is a global event. Much of what we do involves local mobilization. There was severe flooding in India recently, but it hasn't attracted global attention. There has been another Ebola outbreak. The California fires aren't always in the news. We try to stay tied into events around the world whether they become a big story or not.

How has technology changed the way you respond? It helps us be more effective. We have used drones to deliver vaccines and blood supplies in Rwanda, sometimes making more than 50 deliveries a day. We're using scanners and cards to track and distribute food to Syrian refugees. Before that, pen and paper were being used to track distributions to camps with 200,000 people. The new system ensures that everyone gets the right nutrition, and it has reduced lines, spoilage, hoarding, and reselling.

What does UPS get in return for this work? Strategic philanthropy helps a company's reputation and brand, but if you really want to mobilize an organization, you need to go beyond that. We're learning as a business from these efforts—for instance, the Rwanda drone project gives us experience with a new technology. We're becoming acquainted with different cultures and how to work in different markets. We're also inspiring our people. Companies that do this work to generate nice headlines leave a lot of value on the table.

Photograph by MATT BURKE


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ONE GOOD APPLE...

When people work on multiple teams at once, positive leadership behavior has a spillover effect: An empowering boss on one team makes employees feel empowered even while working on teams with more-controlling leaders.

"Research: When Employees Work on Multiple Teams, Good Bosses Can Have Ripple Effects," by Troy Smith et al.

DECISION MAKING

Rivalry Whets Our Appetite for Risk

Attitudes toward risk are important at both the individual and the organizational level: Fear of a backlash may keep employees from raising concerns, say, while leaders' willingness to take chances affects decisions about such things as product launches and acquisitions. Previous research has identified several influences on risk preference, ranging from character traits such as extraversion to situational factors such as mood and how issues are framed. A new study explores another variable: the relationship between two competitors.

Researchers examined the play-by-play data for all regular-season National Football League games from 2002 to 2010, focusing on two high-risk scenarios: two-point attempts after touchdowns (instead of kicking for one extra point) and fourth-down attempts (instead of punting the ball downfield). Using data from sports analysts, Google searches, and fan input, they assessed the degree of rivalry between each pair of teams. Teams deemed to be rivals were 37% more likely than others to attempt two-point conversions and 7% more likely to "go for it" on fourth down. In a subsequent experiment involving 137 college students playing a game, participants who believed their opponent attended a rival school turned over more cards (a high-risk, high-reward move) than others. They also showed significantly elevated heart rates and a "promotion focus" (as opposed to a "prevention focus"), indicating that both physiological and psychological factors were at work.

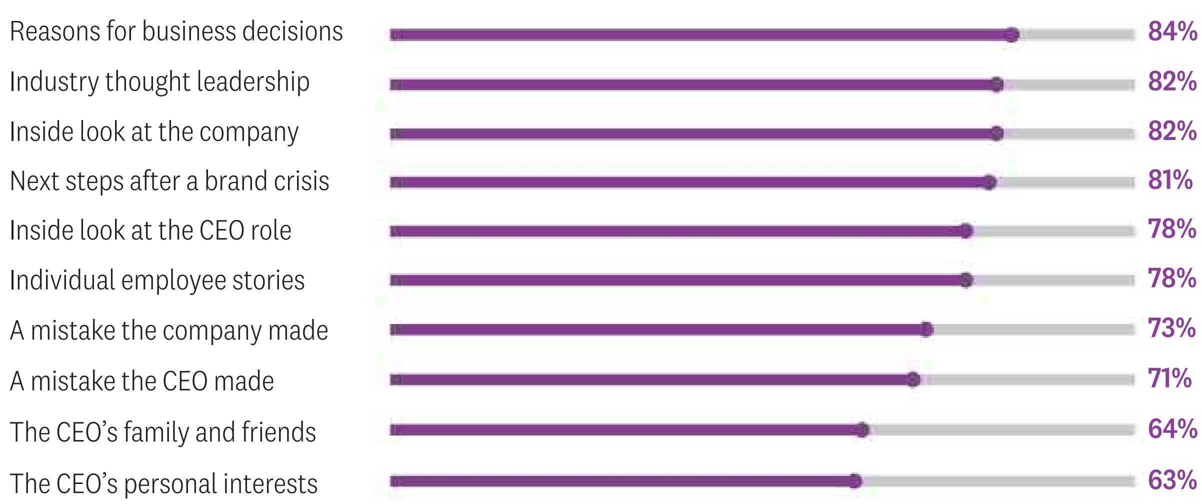
Leaders can boost or tamp down feelings of rivalry depending on context, the researchers say. When bold moves are called for, they write, "managers could consider designing jobs to encourage rivalry relationships among employees (e.g., repeatedly pitting evenly matched employees against one another), socializing incoming employees to historical company rivalries, and regularly emphasizing comparisons to these rival organizations." Conversely, when mistake-free output is more important, leaders should minimize conditions that are likely to fuel rivalry.

ABOUT THE RESEARCH *"Going for It on Fourth Down: Rivalry Increases Risk Taking, Physiological Arousal, and Promotion Focus," by Christopher To et al.* (Academy of Management Journal, *2018)*

SOCIAL MEDIA

Tweets That Build Brands

More and more CEOs are sharing on social media. A survey of 1,000 U.S. consumers shows what kinds of tweets and posts have the most positive impact on their brand perceptions.



Source: "From Risk to Responsibility: Social Media and the Evolution of Transparency," by Sprout Social (2018)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GOVERNANCE

Investors Profit When Activists Demand Spin-Offs

Many managers decry activist investors as a divisive, distracting force that limits their ability to focus on long-term strategy and requires them instead to prioritize moves aimed at boosting the short-term stock price. A new study examining how investors fared when companies spun off assets—sometimes at the behest of activist investors, other times in the ordinary course of business—provides evidence to counter that view. The researchers analyzed all divestitures undertaken by *Fortune* 500 companies from 2007 to 2015—4,035 divestitures in all—using the corporate activism database SharkRepellent and other sources to determine which ones were activist impelled. Evaluating investors' immediate responses to the divestiture announcements and calculating longer-term measures of shareholder value, they found that activist-driven spin-offs drove better results than those undertaken voluntarily, with the performance advantage lasting almost two years. One possible reason for the difference in outcomes: Because activist campaigns are costly, investors tend to push only those spin-offs that will generate high shareholder returns. "Activist investors may fulfill an important governance function by inducing managers to undertake strategies that they might not otherwise pursue, thereby unlocking shareholder value," the researchers write.

ABOUT THE RESEARCH *"Activist-Impelled Divestitures and Shareholder Value," by Siwen Chen and Emilie R. Feldman* (Strategic Management Journal, *2018)*

PRICING

The Surprising Power of Fake Discounts

Everyone loves a bargain, so marking down goods from their original price is an effective way to boost sales. But are those original prices always legit? Studying the outlet stores of a prominent (unnamed) retail chain, a researcher discovered that all the goods manufactured specifically for the outlets bore "original" prices that had been completely fabricated; the items had never been offered at those higher prices. Examining store data, he found that for every $1 increase in the supposed list price, people were willing to pay 77 cents more, on average—although frequent customers were less likely to be fooled.

Several well-known retailers, including JCPenney and Kohl's, have faced class-action lawsuits over fictitious list prices, but such suits are hard to win, giving retailers little reason to refrain from this kind of gamesmanship. "There is an attitude…that consumers are savvy enough anyway, and that relative to other forms of deception, fake prices are somewhat less damaging," the researcher says. "[But my] results show that [many] customers don't see through the ruse."

ABOUT THE RESEARCH *"Fake Discounts Drive Real Revenues in Retail," by Donald Ngwe (working paper)*

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IdeaWatch

GENTRIFICATION, ONE LATTE AT A TIME

Each new Starbucks that opens in a given zip code is associated with a 0.5% increase in neighborhood housing prices.

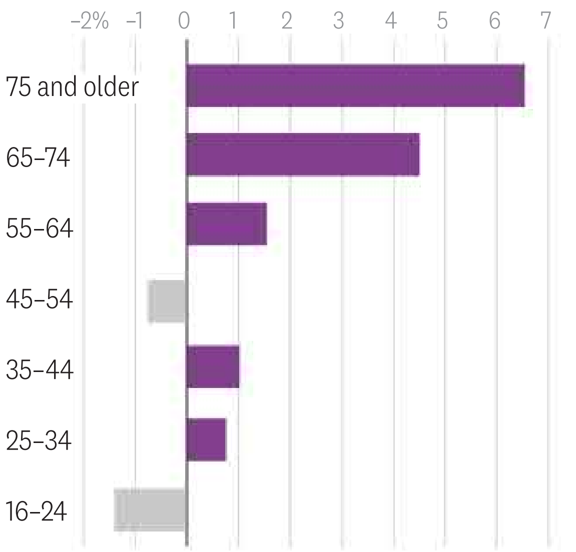
"Measuring Gentrification: Using Yelp Data to Quantify Neighborhood Change," by Edward L. Glaeser, Hyunjin Kim, and Michael Luca

DEMOGRAPHICS

The Aging U.S. Labor Force

The global population is getting older. In the United States it's happening fast—and attitudes about aging and retirement are shifting. This has implications for firms and managers. When do people expect to retire? When is someone "too old" to do the job? Should employers help people plan for life after work? For more on the topic, go to HBR.org/aging.

Projected average annual growth rate by age, 2014–2024



Source: U.S. Bureau of Labor Statistics

WORK/LIFE BALANCE

The Price of Longer Leaves

Research shows that infants benefit when parents spend more time with them, and many workers are lobbying companies and governments to extend maternity and paternity leaves. But some people worry that taking a long leave might hurt their career. To assess that risk, researchers conducted three studies in Canada, where maternity leaves of a full year are common. In a lab experiment, female job candidates whose applications showed that they had taken a one-year leave were judged to be "less desirable" than women whose applications reflected monthlong leaves, with male and female evaluators showing equal bias. A subsequent study showed that candidates whose applications were accompanied by a letter from a supervisor describing the candidate's career orientation, ambitions, and achievements avoided that negative judgment. And a third study found that women who had taken a yearlong leave were perceived as more committed to their jobs and more hirable if they had participated in a "keep in touch" program designed to help them stay connected and engaged with their colleagues and the company. "Our work...helps explain why longer legislated maternity leaves are related to negative career outcomes for women," the researchers write. "We find maternity leave length is perceived as a signal of women's agency and commitment to the job and thus used to gauge their dedication."

ABOUT THE RESEARCH *"The Unintended Consequences of Maternity Leaves: How Agency Interventions Mitigate the Negative Effects of Longer Legislated Maternity Leaves," by Ivona Hideg et al.* (Journal of Applied Psychology, *2018)*

COLLABORATION

The Limits of Empathy

When seeking to understand others—whether employees, customers, or competitors—we're routinely advised to "take their perspective": to imagine that we are in their shoes. Social psychologists have documented many benefits of perspective taking, including increased altruism, decreased stereotyping, and stronger social bonds. But does it actually boost insights into what others are thinking and feeling?

New research indicates that the answer is no. In a series of 25 experiments, subjects who were encouraged

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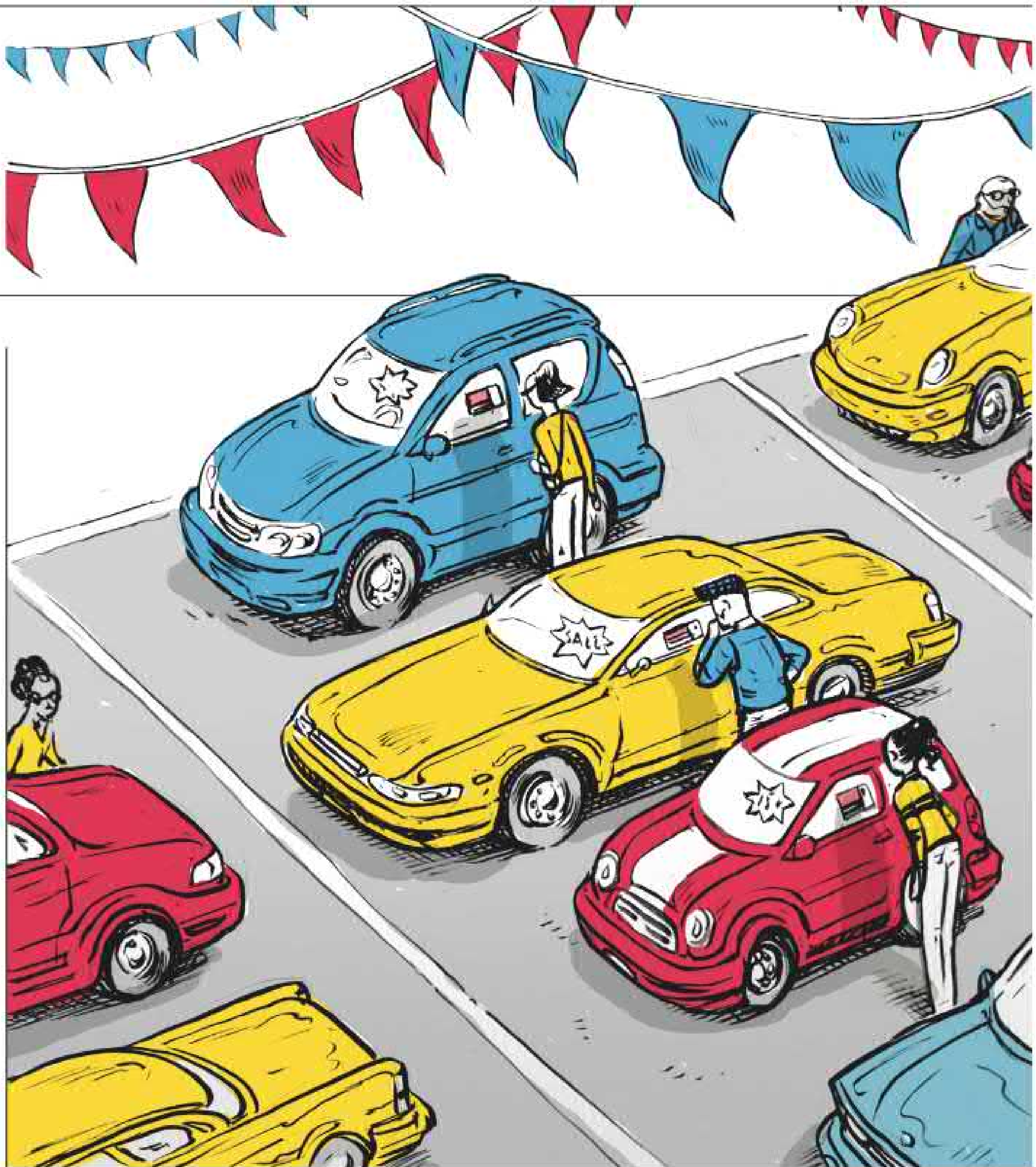

to “try to see things from [another] person’s point of view” before assessing that person’s emotions or opinions were slightly *less* accurate in their judgments than subjects who were not given any special instructions. This happened whether subjects were trying to guess the emotions of strangers or predict the preferences of a romantic partner.

A final experiment suggests a better tactic: what the researchers call perspective *getting*. Subjects were divided into three groups before being asked to guess their romantic partners’ opinions on various topics (for example, whether it would be better to spend a year in Paris or in London). Members of the first group were told to take their partners’ perspective, while members of the second were told to get their perspective by asking questions; the third group served as a control. Those in the perspective-getting group were significantly more accurate than the others. “Understanding other people requires getting perspective, not simply taking it,” the researchers write. “We need to rely on our ears more than our intuition.”

ABOUT THE RESEARCH *“Research: Perspective-Taking Doesn’t Help You Understand What Others Want,” by Tal Eyal, Mary Steffel, and Nicholas Epley (HBR.org, 2018)*

OPERATIONS

How Inventories Can Spur Sales

Inventory management is a crucial part of any business involving physical goods. Along with concerns about the costs of holding excess stock or, alternatively, losing sales because of stockouts, companies must consider consumer psychology. For example, a large inventory gives customers more choice and might signal that a product is popular and therefore desirable—but it might also encourage people to shop around, on the assumption that the item they’re eyeing will still be available later. How can companies ensure that they’re offering enough but not too much?

In a study of 1,289 General Motors dealerships over 30 weeks, researchers examined data from periods when bad weather affected deliveries. They found that each additional car that broadened a dealer’s selection—for instance, a model in a color not already on the lot, or the only two-door version of a model—increased sales. Conversely, each additional car that was identical to one already onsite caused sales to drop. “Expanding variety across submodels should be the first priority when adding inventory,” the researchers write. “Our data indicate that there could be a substantial benefit from…a ‘maximize variety, minimize duplication’ allocation strategy: sales increase by 4.4% without changing the total number of vehicles at each dealership.”

ABOUT THE RESEARCH *“Does Adding Inventory Increase Sales? Evidence of a Scarcity Effect in U.S. Automobile Dealerships,” by Gérard P. Cachon, Santiago Gallino, and Marcelo Olivares (*Management Science*, 2018)*

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IdeaWatch

EYES ON THE PRIZE

When employees learn that peers earn more than they do, effort and performance decline and turnover increases. But when they learn that their bosses earn more than they had assumed, they work harder, presumably hoping to attain a similar job and pay.

"How Much Does Your Boss Make? The Effects of Salary Comparisons," by Zoë Cullen and Ricardo Perez-Truglia

MARKETING

Getting Better All the Time

Marketers consistently introduce "new and improved" products that tempt consumers to upgrade. Recent research explores how people's sense of identity—specifically, whether they see themselves as improving—can heighten perceptions that the product has gotten better and increase willingness to pay for the new version.

In an experiment involving the iPhone 5 and iPhone 6, subjects were asked to list three ways in which they themselves had improved over the past 10 years and then to compare the phones' features, rate the phone's improvement over the past five years, and indicate their willingness to buy the iPhone 6. Finally, they were asked to rate their own improvement over the past five years and to assess the degree to which they identified with Apple. People who gave themselves high marks for self-improvement and strongly identified with Apple were more aware of the iPhone 6's improvements and more willing to buy it. In a similar experiment involving the Samsung Galaxy S4 and S5, some subjects were primed to focus on a friend's improvement rather than on their own. Here, too, people who strongly identified with the brand and saw themselves as improving perceived the product as having improved and indicated a willingness to buy it—but people focused on a friend's improvement did not show these effects, regardless of whether they identified with the brand.

Still another experiment tested an advertisement that used the tagline "You've improved in significant ways. This is [the iPhone] 7," finding that among subjects who strongly identified with Apple, the ad sparked more awareness of the phone's improvements, and a greater willingness to buy the phone, than a neutral ad did. "Our work suggests that eliciting thoughts of improvement in the self may be a successful tool for heightening product improvement perceptions and encouraging product upgrade behavior," the researchers write.

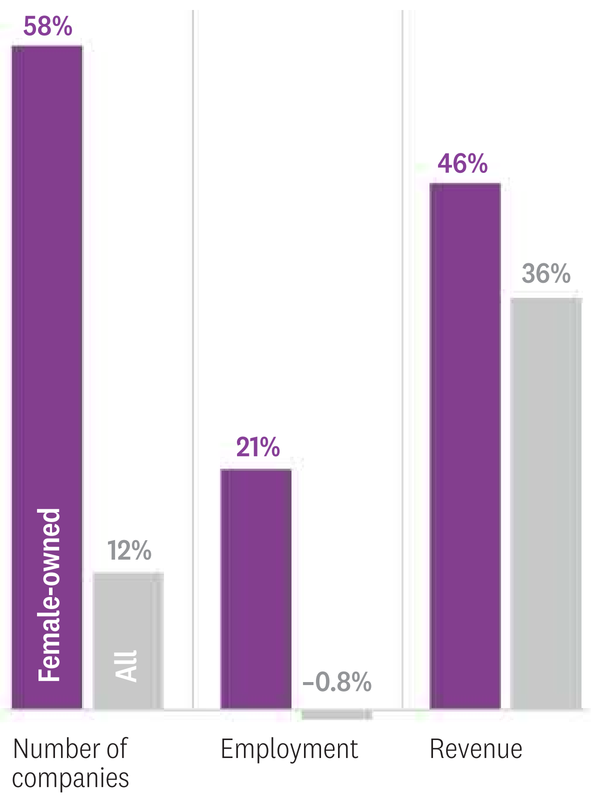
ABOUT THE RESEARCH *"Egocentric Improvement Evaluations: Change in the Self as an Anchor for Brand Improvement Judgments," by Sokiente W. Dagogo-Jack and Mark R. Forehand* (Journal of Marketing Research, *forthcoming)*

GENDER

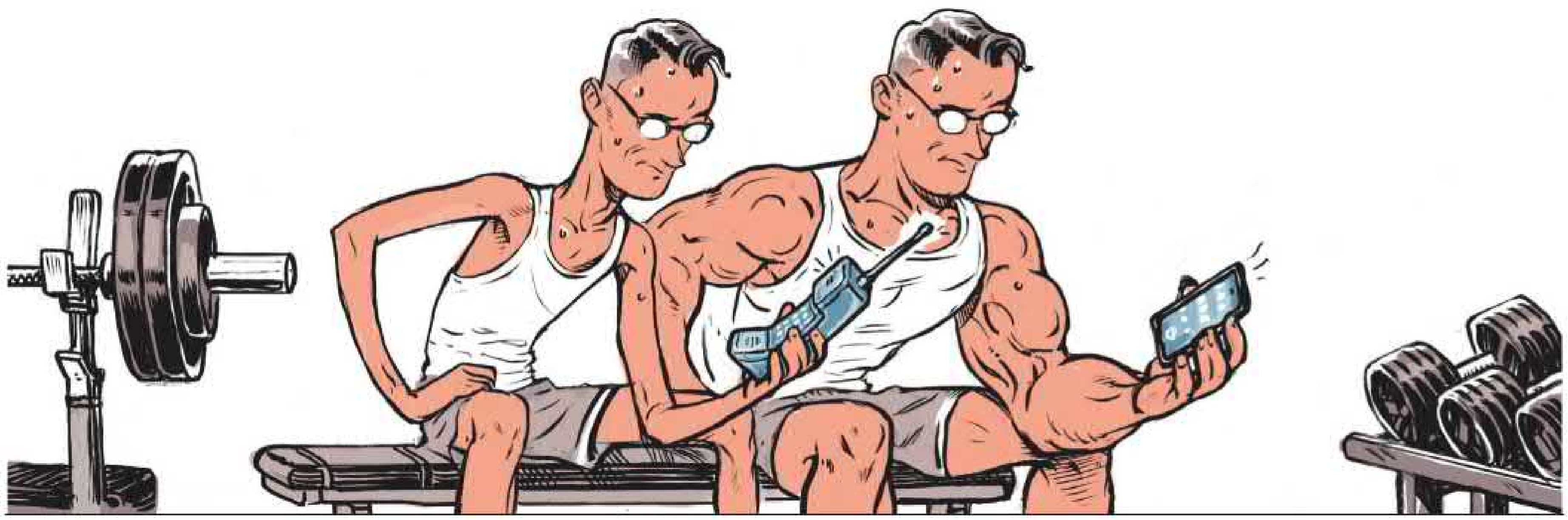
Female Fast Lane

U.S.-based businesses that are at least 51% owned, operated, or controlled by women have grown more than U.S. firms in general over the past decade on all three of these measures: number of companies, employment, and revenue.

Growth, 2007–2018



Source: "The State of Women-Owned Businesses," by American Express (2018)



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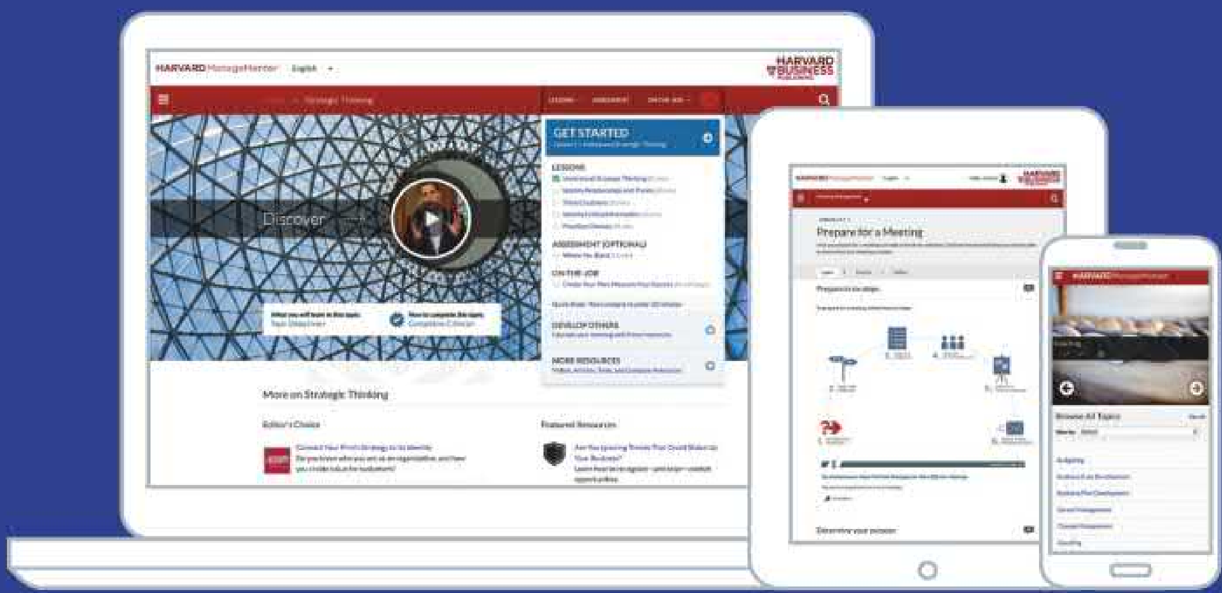

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IdeaWatch

Andrew Hafenbrack, an assistant professor at Católica-Lisbon School of Business and Economics, had some study subjects meditate for 15 minutes while others took a break to read the news or think about their lives. Then he asked people in both groups to perform a task—such as editing a cover letter—and before they started, surveyed them about their motivation to do it and the time they'd spend on it. The meditators felt less inspired to do the task and said they'd devote less time to it. **The conclusion:**

Mindfulness Is Demotivating

Professor Hafenbrack, DEFEND YOUR RESEARCH

Hafenbrack: My coauthor, Kathleen Vohs, and I had expected meditators to show less motivation. Statistically, their motivation level was indeed about 10% lower than the level of the people who hadn't practiced mindfulness. That's not nothing. But what surprised us was that despite feeling less inspired, those in the mindful group completed their tasks just as well as the control group did. We conducted 14 versions of this experiment, and in every one meditators performed the task equally well. In one case they even did it better.

HBR: So they were unenthusiastic but proficient? Yes, and that was unexpected. If you look at the literature on goal setting, you'll find probably 500 studies that have shown a correlation between motivation and performance. More-motivated people perform better and vice versa. It's very unusual to see motivation and performance not going in the same direction. It's just weird.

How could they be at odds? Meditators were less focused on the future and more relaxed, and thus less motivated, which should have dampened their performance. But some elements of their experiences were beneficial to it. In particular, meditation gave them a break from stress, obligations, and worries, which helped them concentrate on the next task better. When it came to performance, it seems that the negative effect of reduced motivation and the positive effect of increased task focus canceled each other out.

Maybe motivation fell because these people weren't practiced meditators? It's true that this finding is based on one meditation session. I don't know if our subjects had experience with meditation or not. It's fair to wonder if the results might be different with a mindfulness veteran. But if people use meditation as a go-to coping mechanism when they're stressed, I think they'd react the way we saw in our studies.

Maybe it was the task they did that demotivated them, not the fact that they were so chill. That's another thing. Perhaps being in a mindful state helps me see that it's a dumb task. That's hard to study in a lab but worth researching. But my guess is that the relaxed, present state that comes from meditating would still lower motivation.

What made you decide to rain on the mindfulness parade? Well, I'm not against mindfulness. But the research done on it and on meditation is almost impossibly positive. Among thousands of articles, I've seen maybe five that call their value into question. As a researcher and as a person, I just find

Illustration by JOEL KIMMEL

it hard to believe that anything can be that positive all the time. So I thought, What's going on here? Are there things that aren't good about focusing more on the present? That was the idea, and our first study found just that. But what we didn't foresee was this second part: no reduction in performance.

Do you think results like this will dampen the mindfulness phenomenon? Mindfulness is just such a big and complicated issue. The concept came from Buddhism 2,000 years ago. It was only about 40 years ago that contemplatives like Jon Kabat-Zinn, Mirabai Bush, and Jack Kornfield began to popularize mindfulness and meditation in the West. But the concept has changed. It has become secularized. It focuses less on the original philosophical considerations about how to treat people. There's no one definition of mindfulness anymore. It's prayer. It's meditation. It's yoga class. It's as if we're talking past each other.

And now the marketers have their hands on it, and you know what? It's a great end run around regulation. You can't get sued for claiming mindfulness the way you can for claiming that you're organic. So now you can buy mindful mayonnaise in the grocery store.

No! Yes! How is mayo enlightened? And there's more all the time. I saw a clothing company that used the tagline "attire for the mindful man" and another that offered "mindful clothing" for women. They're pushing it as far as they can.

I'm primarily a scientist. I don't have a dog in the fight, so it doesn't bother me too much, but I see how it bothers others when you say anything negative about mindfulness.

Have there been angry reactions to your research? Oh my, yes! The vitriol over what I think is a tiny criticism. Not even a criticism but an observation that in some very specific cases meditating may be counterproductive. One person called us "behavioral Mengelists," which is just so extreme and not at all mindful.

Will you continue to prick holes in the mindfulness bubble with more research? In general I'm interested in interventions—the things we could do to help people feel and perform better. I'm also interested in figuring out why interventions may backfire. I won't make this my career, but it's important to explore because people are deploying mindfulness programs in organizations. The opportunity costs of doing such programs are big. Look, mindfulness isn't dangerous or anything. In general it's a good thing, but let's make sure we're not being counterproductive with it. That's one thing I'm adding to the conversation.

Do you meditate? Yes, but not every day. Sometimes to help myself fall asleep or before a meeting I expect to be difficult. I do it on demand, like popping an aspirin when I have a headache. This is something else I'm adding to the conversation: Meditation changes how we feel pretty much immediately, so some of the benefits can happen after a single short session. We don't all need to meditate for an hour every day.

Should HR departments nix their mindfulness programs? I really hope people don't read these results and say, "Well, let's stop meditating." Given all the other benefits, that would be the worst reaction. Part of the selling point of mindfulness is that you don't have to have a reason to feel good. Mindfulness takes the edge off—it helps you take control of your life by noticing the world around you as it is and what's going on inside yourself so that you can make an intentional decision about what to do, rather than avoiding reality or reacting automatically to issues that come up. We need mindfulness.

Interview by **Scott Berinato**

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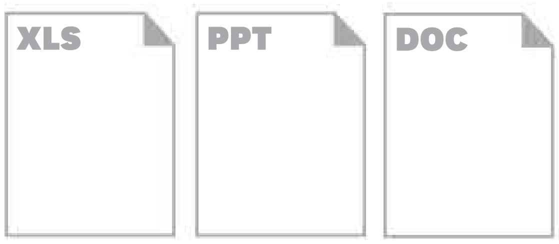

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HOW I DID IT SURVEYMONKEY'S CEO ON CREATING A CULTURE OF CURIOSITY

IdeaWatch

by Zander Lurie

Photograph by **BRYAN MELTZ**

Lurie talks with employees at SurveyMonkey's headquarters in San Mateo, California.

In May 2015 I flew to Mexico for a long weekend with a group of friends to celebrate one member's birthday. We spent Friday afternoon beside the pool at a resort, playing a board game. Dave Goldberg, one of my closest friends, decided to go to the gym. His wife, Sheryl Sandberg, stayed with the rest of us by the pool and dozed off.

After a while, we all went back to our rooms to shower and get ready for dinner. When we reconvened for a drink, Sheryl was looking for Dave. She and Dave's brother, Rob, found him unconscious in the gym. When I arrived at the hospital, I learned that he'd died. It was horrible and heartbreaking.

Dave was the CEO of SurveyMonkey, a company that was changing the way people gather feedback through online surveys. I served on the board. When I returned to the hotel, after midnight, I called a few senior people at the company to let them know the shocking news. Very early Saturday morning I wrote an e-mail to all 550 employees. The subject line was "Our friend, Dave Goldberg." I informed everyone that Dave had passed away and that we would have more information on Monday. The board convened with senior management on Sunday morning back at company headquarters. The next morning we held an all-hands meeting. The board and the management team spoke about Dave's death and the immediate plan for SurveyMonkey, but we were also open about our personal struggles with losing Dave. We had grief counselors in attendance. We said that anyone who didn't want to stay at work could go home.

There's no playbook for what to do when your CEO—a beloved guy who'd been responsible for hiring many of the people gathered in that room—dies suddenly at age 47. Everyone was in shock and feeling extremely vulnerable. Still, we had to keep the company operating. It required all of us to partition our brains a bit. After Dave's death one of the many insightful things Sheryl wrote was "The ability to compartmentalize is healthy."

In addition to being a board member, I was working full-time in Los Angeles as a senior vice president at GoPro, the action camera company, where I ran the entertainment division. SurveyMonkey's board asked if I'd be willing to step in as interim executive chairman, with two primary goals: to lead the search for Dave's successor, and to help the company execute the plan Dave had mapped out. I asked the CEO of GoPro for permission to split my time between GoPro and SurveyMonkey over the summer, and he graciously agreed. I told everyone I wasn't a candidate to become SurveyMonkey's CEO, and I held to that. In July, after an extensive search, we hired Dave's successor.

Within a few months, however, it was clear that the new CEO's strategy wasn't aligned with the board's. He recognized that the fit wasn't right, so he volunteered to step down. The board asked me to consider taking his place. This time I had to do some difficult thinking. The team at GoPro had been very gracious to me after Dave's death, and I felt loyal to it. I had hired a lot of people at GoPro, and I was excited about leading them. But SurveyMonkey had shown incredible resiliency, and the company's continued success was very important to me, because it was part of Dave's legacy. In the months after his death, employees had taken to wearing T-shirts with the slogan #MakeDaveProud. That summed up how I felt too. I became SurveyMonkey's CEO in January 2016.

GETTING BACK ON OFFENSE

I'd first heard about SurveyMonkey in 2008. Dave, whom I'd known for a decade, had left his job at Yahoo and was talking with a private equity fund about finding a company he could invest in and run. The PE guys referred him to SurveyMonkey, a 10-year-old company in Portland with just under 10 employees that was still run by its founder. Dave invested in the company, became the CEO, and moved it from Portland to Silicon Valley. He asked me to join the board, so I got to ride shotgun and watch him scale the company's revenue from $25 million to $189 million.

Because I'd been on the board for so long, when I became CEO, I didn't have the typical honeymoon period. The company had been on a great trajectory, but after Dave's death it wasn't certain that would continue. Many people think a CEO's job is mostly focusing on strategy, but for months I spent a lot of time helping employees process their feelings of grief, fear, and anxiety. I also thought a lot about how to preserve the core of what had made Dave's leadership special while establishing my own leadership style.

The expectation was that I'd begin making moves immediately in terms of the business strategy. I told people that it seemed to me the company had been playing defense since Dave's death, and

Courtesy of SurveyMonkey

although that was understandable, we needed to get back on offense to remain competitive. Very quickly we decided to change our strategy with a line of business that had been creating a lot of turmoil and suffering significant losses. We laid off 100 people—more than 10% of our workforce. It was hard, but it put the company back on a solid footing.

DEFINING THE COMPANY CULTURE

This move, although right for the business, was another big change for the team. I continued to spend part of each day providing emotional support for employees and maintaining transparency about our strategy. Our employees are talented and have a lot of options, so by early 2016 it was important to show them that working at SurveyMonkey made sense for their careers and their growth.

We needed to find a way to turn the page. We set about defining the company culture: who we are and how we show up for one another. Unsurprisingly, since we're a tech company that makes it easy to conduct surveys, we sent a survey to ask what our employees thought. The result was a list of five employee values: *Be accountable. Trust the team. Prioritize health. Listen to customers. Celebrate the journey.* These are aspirational, but it was important that they align with how people at SurveyMonkey actually work together. They had to be more than just slogans we painted on the wall.

With alignment on our values, the team was starting to get back on the horse. We ramped up our recruiting. We updated our product road map. As we looked to bring new solutions to the market and reintroduce ourselves as a company, we decided to ask our customers what they valued most about our offerings and our employees what excited them about coming to work every day.

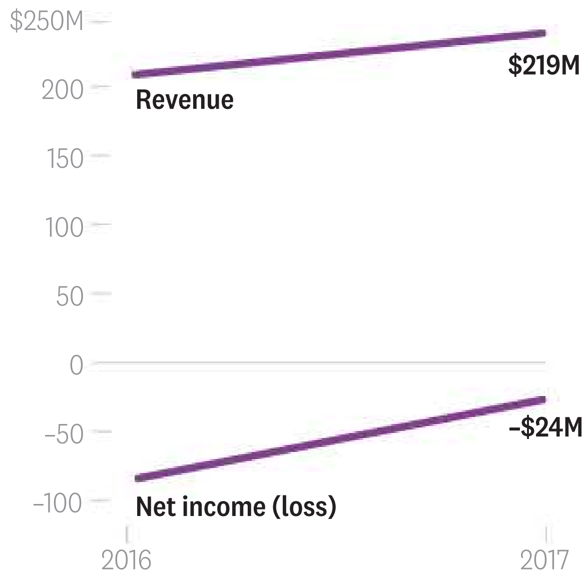
In these conversations one word came up repeatedly: "curiosity." Every survey our customers make is driven by their curiosity about what others think. Every product innovation we've created has resulted from employees' asking questions or looking at something differently. Recognizing that curiosity is at the heart of everything we do, we made it our new rallying cry. Today SurveyMonkey's mission is to "power curious individuals and organizations

FACTS & FINANCIALS

SurveyMonkey

Founded 1999
Headquarters San Mateo, California

Revenue and net income (in US$ millions)



Source: SurveyMonkey
Note: Financial data prior to 2016 is unavailable because SurveyMonkey only recently went public.

to measure, benchmark, and act on the opinions that drive success."

At this point, with established employee values and a new company mission, we didn't settle. Instead we went deeper. Our customer and employee surveys revealed that the behaviors that define curiosity—asking good questions, listening deeply, being open-minded, valuing new experiences, challenging the status quo, and staying keenly aware that no one has all the answers—were prevalent among SurveyMonkey's best customers and its best employees. We began to think about how we could increase the curiosity level within our culture to better serve our customers. Enhancing this quality doesn't happen organically—you have to approach it deliberately.

CELEBRATING CURIOSITY

We moved into a new headquarters building in December 2016, and that provided an opportunity to go all in to increase curiosity. We designed our new HQ, from the chairs to the names of conference rooms, almost entirely on the basis of employee surveys. Our goal was to make the new space open and collaborative to unlock creativity and innovation.

We also started encouraging and rewarding curiosity across the organization. One way is to create the right forums for people to ask good questions. For instance, we conduct town hall meetings at which we celebrate the "question of the week," chosen from employee surveys. We have a peer recognition program to reward people who dare to be especially candid. In our Slack channels you'll often see remarks praised with the notation #greatquestion. At SurveyMonkey that's one of the highest compliments you can pay someone.

To foster a culture where questions are welcome, I need to show that I'm open to asking and answering them. I do that through regular skip-level meetings with people one level below my direct reports, where the conversation is open and nothing is off-limits. On a monthly basis I show my curiosity to the entire team through our Goldie Speaker Series (named for Dave Goldberg). I bring in leaders from various industries and backgrounds to learn about their success—from Serena Williams on what it takes to win, to Electronic Arts' Andrew Wilson on building a culture of customer centricity. During these meetings I get real-time mentorship from people I admire while showing our team why asking questions is valuable.

Like many tech companies, we sponsor hackathons, where our engineers, product managers, and designers stay up too late, drink too much Red Bull, and quickly pursue new ideas in a competitive, anything-goes environment. Recently one of these hackathons and the curiosity of the team led to an important product breakthrough. Our software makes it easy for anyone to create a survey, but surveys can be improved with help from people who have deep expertise in the methodology. For instance, if the first three questions in your survey require open responses (as opposed to multiple choice), or if the survey has 75 questions, many people will fail to complete it because it seems like too much work. At the hackathon one team created a feature called SurveyMonkey Genius, which helps people avoid these mistakes. It uses artificial intelligence to assess the surveys people are creating and provides expert guidance on how to change the format and structure to get better results.

I believe that a diversity of people leads to better ideas and greater curiosity. Our board of directors consists of five women and five men. Five of the 11 members of our senior executive team are women. Women make up about half the company, including our CTO and many of our engineers.

Sometimes asking people what matters to them—the heart of curiosity—leads to unexpected answers. We recently saw an example of that. Our company spends millions of dollars a year on benefits; to make sure that spending aligns with what employees really value, we do surveys about which benefits matter most to them. In one of those surveys an interesting theme emerged. Like most other companies, we have contractors and vendors—including the people who clean our offices and those who prepare the great food in our dining area. We see them every day, but they aren't actually SurveyMonkey employees. Some of our employees expressed concern that these team members didn't have benefits comparable to ours. We began working with the companies that employ them to make their benefits packages more comparable. We wouldn't have thought to engage on this issue if not for our employees' curiosity and concern.

GOING PUBLIC

Another topic our people were curious about was whether we would become a public company. The management team and I had discussed this too, and we felt it would provide a significant opportunity to highlight our brand, introduce our full product portfolio to a broader audience, and further drive growth. In September 2018, nearly 20 years after its founding, SurveyMonkey went public. For everyone involved, the process served as a reminder of how powerful curiosity can be. We wrote a 250-page S-1 to explain everything there is to know about the company, and we tried to answer any question an investor might conceivably be curious about.

When you're pursuing an IPO, you put together a road show presentation to tell your story, which you present approximately 75 times over a two-week period. With all that repetition you get pretty good at delivering the presentation—but the real magic happens afterward, when smart people ask questions. For me the road show was an opportunity to learn about would-be investors' hopes and concerns about our company. What risks did they see that we hadn't? What opportunities were they curious about? Being a former banker, I recognize that companies play a role in determining what kind of investors own their stock. As George Serafeim, a Harvard Business School professor, has said, "You get the investors you deserve."

I HAVE THREE young children. New parents learn a lot about the power of curiosity. Humans are probably at their most curious when they're young, because they are eager to learn and lack the inhibitions and social pressures that accrue over time. Recently our chief research officer gave a TEDx talk about how curiosity is your superpower. Being curious requires space and time, and it can be pushed to the bottom of your priority list when life gets too busy. But we believe that curiosity helps employees engage more deeply in their work, generate new ideas, and share those ideas with others.

Leaders need to find ways to help employees flex their curiosity. We want people to ask big questions—and we want to celebrate them when they do. We want them to think up experiments that haven't been done before. If folks aren't failing, they're not asking hard enough questions or taking big enough risks. Curiosity can be like a muscle: Its strength will erode if it isn't used often enough. When curiosity ebbs, people lapse into routine and complacency, which exposes a company to disruption. To prevent that, managers should continually emphasize how important curiosity is—and reward people for developing it.

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Spotlight

Rethinking Efficiency

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Spotlight

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THE HIGH PRICE OF EFFICIENCY

Eliminating waste is the holy grail of management science—but overemphasizing it leads to a host of problems. Companies should pay just as much attention to resilience.

IN HIS LANDMARK 1776 work *The Wealth of Nations,* Adam Smith showed that a clever division of labor could make a commercial enterprise vastly more productive than if each worker took personal charge of constructing a finished product. Four decades later, in *On the Principles of Political Economy and Taxation,* David Ricardo took the argument further with his theory of comparative advantage, asserting that because it is more efficient for Portuguese workers to make wine and English workers to make cloth, each group would be better off focusing on its area of advantage and trading with the other.

These insights both reflected and drove the Industrial Revolution, which was as much about process innovations that reduced waste and increased productivity as it was about the application of new technologies. The notions that the way we organize work can influence productivity more than individual effort can and that specialization creates commercial advantage underlie the study of management to this day. In that sense Smith and Ricardo were the precursors of Frederick Winslow Taylor, who introduced the idea that management could be treated as a science—thus starting a movement that reached its apogee with W. Edwards Deming, whose Total Quality Management system was designed to eliminate all waste in the production process.

Smith, Ricardo, Taylor, and Deming together turned management into a science whose objective function was the elimination of waste—whether of time, materials, or capital. The belief in the unalloyed virtue of efficiency has never dimmed. It is embodied in multilateral organizations such as the World Trade Organization, aimed at making trade more efficient. It is ensconced in the Washington Consensus via trade and foreign direct-investment liberalization, efficient forms of taxation, deregulation, privatization, transparent capital markets, balanced budgets, and waste-fighting governments. And it is promoted in the classrooms of every business school on the planet.

Eliminating waste sounds like a reasonable goal. Why would we *not* want managers to strive for an ever-more-efficient use of resources? Yet as I will argue, an excessive focus on efficiency can produce startlingly negative effects, to the extent that superefficient businesses create the potential for social disorder. This happens because the rewards arising from efficiency get more and more unequal as that efficiency improves, creating a high degree of specialization and conferring an ever-growing market power on the most-efficient competitors. The resulting business environment is extremely risky, with high returns going to an increasingly limited number of companies and people—an outcome that is clearly unsustainable. The remedy, I believe, is for business, government, and education to focus more strongly on a less immediate source of competitive advantage: resilience. This may reduce the short-term gains from efficiency but will produce a more stable and equitable business environment in the long run. I conclude by describing what a resilience agenda might involve.

To understand why an unrelenting focus on efficiency is so dangerous, we must first explore our most basic assumptions about how the rewards from economic activities are distributed.

Outcomes Aren't Really Random

When predicting economic outcomes—incomes, profits, and so forth—we often assume that any payoffs at the individual level are random: dictated by chance. Of course, this is not actually so; payoffs are determined by a host of factors, including the choices we make. But those factors are so complex that as far as we can tell, economic outcomes might as well be determined by chance. Randomness is a simplifying assumption that fits what we observe.

If economic outcomes are random, statistics tells us that they will follow a Gaussian distribution: When plotted on a graph, the vast majority of

Idea in Brief

THE PROBLEM

Management has come to be seen as a science whose purpose is to make commercial enterprises more efficient. But the single-minded pursuit of efficiency makes businesses less resilient.

WHY IT HAPPENS

Businesses that are consistently more efficient earn an increasing share of available profits and can begin to game the market—and in time, industries become consolidated around a single dominant business model. This outcome carries a high risk of catastrophic failure and a high likelihood of exploitation.

THE SOLUTION

Business, government, and management education need to increase their emphasis on organizational resilience. This will involve limiting the size of businesses, introducing more friction into global trade and the capital markets, giving long-term investors a larger say in strategic decision making, creating jobs that are richer in learning opportunities, and offering educational programs that balance efficiency and resilience.

Eliminating waste sounds like a reasonable goal. Why would we *not* want managers to embrace it? Yet an excessive focus on efficiency can have startlingly negative effects, with superefficient businesses creating the potential for social disorder.

payoffs will be close to the average, with fewer and fewer occurring the further we move in either direction. This is sometimes known as a normal distribution, because many things in our world follow the pattern, including human traits such as height, weight, and intelligence. It is also called a bell curve, for its shape. As data points are added, the whole becomes ever more normally distributed.

Because the Gaussian distribution is so prevalent in human life and in nature, we tend to expect it across domains. We believe that outcomes are and should be normally distributed—not just in the physical world but in the world writ large.

For example, we expect the distributions of personal incomes and firm performance within industries to be roughly Gaussian, and we build our systems and direct our actions accordingly. The classic way to think about an industry, however defined, is that it will have a small number of winners, a small number of losers (who are probably going out of business), and lots of competitors clustered in the middle. In such an environment, most efficiency gains are swiftly erased as others adopt them, and as firms fail, new ones replace them. This idealized form of competition is precisely what antitrust policy seeks to achieve. We don't want any single firm to grow so big and powerful that it shifts the distribution out of whack. And if the outcomes do follow a random distribution, and competitive advantage does not endure for long, competing on efficiency is sustainable.

But evidence doesn't justify the assumption of randomness in economic outcomes. In reality, efficiency gains create an enduring advantage for some players, and the outcomes follow an entirely different type of distribution—one named for the Italian economist Vilfredo Pareto, who observed more than a century ago that 20% of Italians owned 80% of the country's land. In a Pareto distribution, the vast majority of incidences are clustered at the low end, and the tail at the high end extends and extends. There is no meaningful mean or median; the distribution is not stable. Unlike what occurs in a Gaussian distribution, additional data points render a Pareto distribution even more extreme.

That happens because Pareto outcomes, in contrast to Gaussian ones, are not independent of one another. Consider height—a trait that, as mentioned, tracks a Gaussian distribution. One person's shortness does not contribute to another person's tallness, so height (within each sex) is normally distributed. Now think about what happens when someone is deciding whom to follow on Instagram. Typically, he or she looks at how many followers various users have. People with just a few don't even get into the consideration set. Conversely, famous people with lots of followers—for example, Kim Kardashian, who had 115 million at last count—are immediately attractive candidates *because* they already have lots of followers. The effect—many followers—becomes the cause of more of the effect: additional followers. Instagram followership, therefore, tracks a Pareto distribution: A very few people have the lion's share of followers, and a large proportion of people have only a few. The median number of followers is 150 to 200—a tiny fraction of what Kim Kardashian has.

The same applies to wealth. The amount of money in the world at any one moment is finite. Every dollar you have is a dollar that is not available to anyone else, and your earning a dollar is not independent of another person's earning a dollar. Moreover, the more dollars you have, the easier it is to earn more; as the saying goes, you need money to make money. As we're often told, the richest 1% of Americans own almost 40% of the country's wealth, while the bottom 90% own just 23%. The richest American is 100 billion times richer than the poorest American; by contrast, the tallest American adult is less than three times as tall as the shortest—demonstrating again how much wider the spread of outcomes is in a Pareto distribution.

We find a similar polarization in the geographic distribution of wealth. The rich are increasingly concentrated in a few places. In 1975, 21% of the richest 5% of Americans lived in the richest 10 cities. By 2012 the share had increased to 29%. The same holds for incomes. In 1966 the average per capita income in Cedar Rapids, Iowa, was equal to that in New York City; now it is 37% behind. In 1978 Detroit was on a par with New York City; now it is 38% behind. San Francisco was 50% above the national average in 1980; now it is 88% above. The comparable figures for New York City are 80% and 172%.

Business outcomes also seem to be shifting toward a Pareto distribution. Industry consolidation is increasingly common in the developing world: In more and more industries, profits are concentrated in a handful of companies. For instance, 75% of U.S. industries have become more concentrated in the past 20 years. In 1978 the 100 most profitable firms earned 48% of the profits of all publicly traded companies combined, but by 2015 the figure was an incredible 84%. (See the exhibit "The Growing Power of the Few.") The success stories of the so-called new economy are in some measure responsible—the dynamics of platform businesses, where competitive advantages often derive from network effects, quickly convert Gaussian distributions to Pareto ones, as with Kim Kardashian and Instagram.

Let's examine how the quest for efficiency fits into this dynamic, along with the role of so-called monocultures and how power and self-interest lead some players to game the system, with corrosive results.

The Pressure to Consolidate

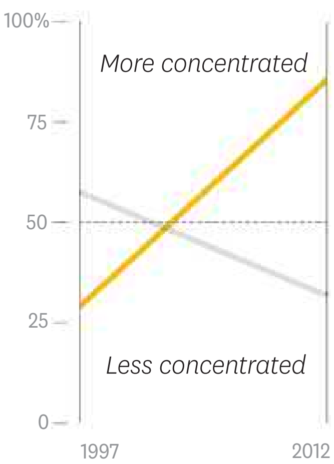
Complexity scholars, including UCLA's Bill McKelvey, have identified several factors that systematically push outcomes toward Pareto distributions. Among them are pressure on the system in question and ease of connection between its participants. Think about a sandpile—a favorite illustration of complexity theorists. You can add thousands of grains of sand one by one without triggering a collapse; each grain has virtually no effect. But then one additional grain starts a chain reaction in which the entire pile collapses; suddenly a single grain has a huge effect. If the sandpile were in a no-gravity context, however, it wouldn't

The Growing Power of the Few

Since 1997 a strong majority of industries in the United States have become more concentrated. Many are now what economists consider "highly concentrated." This tends to correlate with low levels of competition, high consumer prices, and high profit margins.

Key: How Concentration Is Calculated

The portion of an industry that is controlled by the top four firms indicates that industry's concentration—a measure that changes over time.

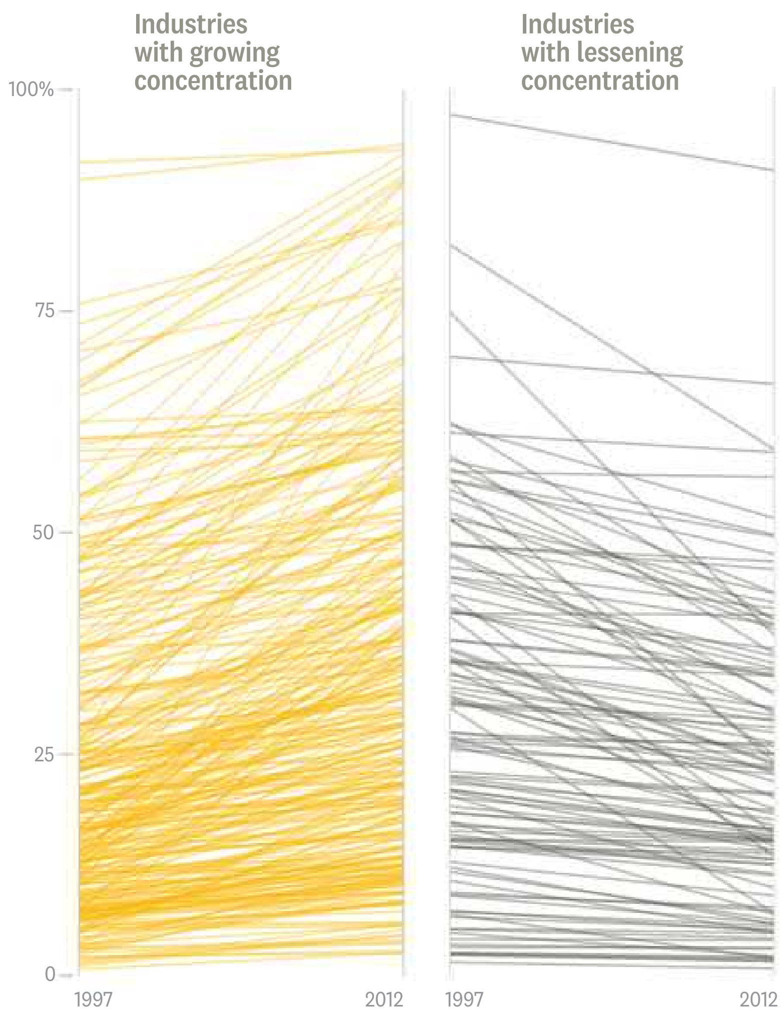


Upslopes *show industries that are growing more concentrated: As a group, the top four firms are gaining market share.*

Downslopes *show ones that are growing less concentrated.*

Overall, Concentration Is Increasing…

Plotting the change in concentration of more than 850 U.S. industries from 1997 to 2012 reveals upslopes in two-thirds of cases and downslopes in one-third. The large gap at the top of the downslope chart indicates that nearly all the industries that were highly concentrated in 1997 maintained or increased their concentration and that many industries are now very highly concentrated indeed.



Source: U.S. Census Bureau, with analysis by the *Economist* (which provided this data to HBR)

Industry consolidation is increasingly common in the developed world. In 1978 the 100 most profitable U.S. firms earned 48% of the profits of all publicly traded companies combined, but by 2015 the figure was an incredible 84%.

collapse. It falls only as gravity pulls that final grain down, jarring the other grains out of position.

In business outcomes, gravity's equivalent is efficiency. Consider the U.S. waste-management industry. At one time there were thousands of little waste-management companies—garbage collectors—across the country. Each had one to several trucks serving customers on a particular route. The profitability of those thousands of companies was fairly normally distributed. Most clustered around the mean, with some highly efficient and bigger companies earning higher profits, and some weaker ones earning lower profits.

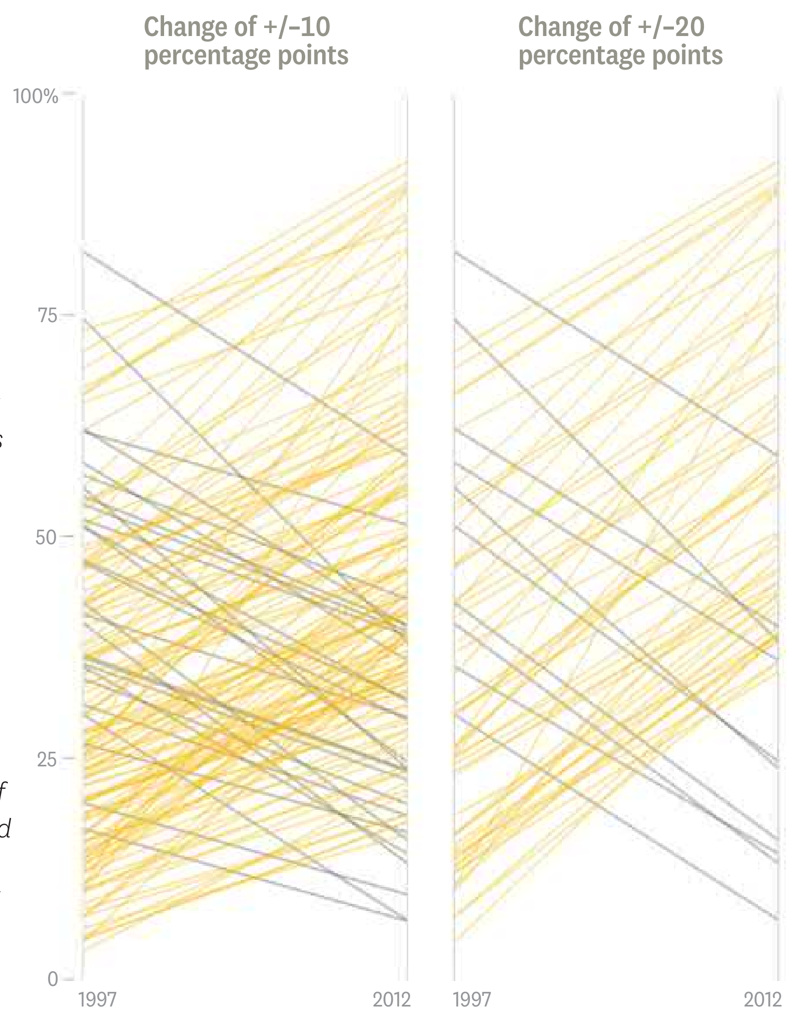
Then along came Wayne Huizenga, the founder of Waste Management (WM). Looking at the cost structure of the business, he saw that two big factors were truck acquisition (the vehicles were expensive, and because they were used intensively, they needed to be replaced regularly) and maintenance and repair (intensive use made this both critical and costly). Each small player bought trucks one or maybe a handful at a time and ran a repair depot to service its little fleet.

Huizenga realized that if he acquired a number of routes in a given region, two things would be possible. First, he would have much greater purchasing leverage with truck manufacturers and could acquire vehicles more cheaply. Second, he could close individual maintenance facilities and build a single, far more efficient one. As he proceeded, the effect—greater efficiency—became the cause of more of the effect. Huizenga generated the resources to keep buying small garbage companies and expanding into new territories, which made WM bigger and more efficient still. This

…Especially When There Are Big Shifts in the Power of the Top Firms

During that time 285 industries (about a third of those studied) were "big movers"—the market share of the top four firms changed by at least 10 percentage points. Of those, 216 became more concentrated and 69 became less so.

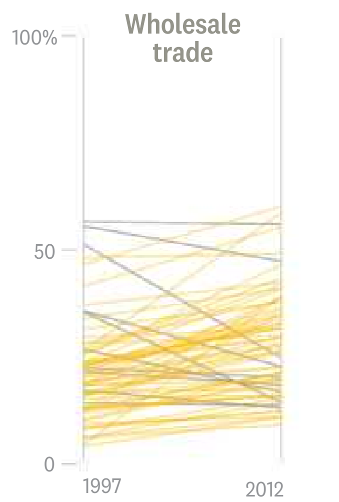
The pattern is even more pronounced among the 92 "very big movers" (for which the market share of the top four firms changed by at least 20 percentage points)—and all but 10 of those industries became more concentrated.

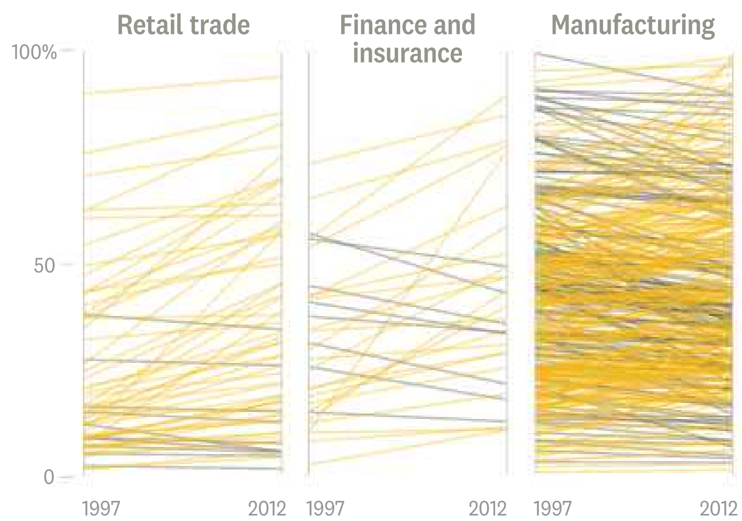


Note: When 2012 data was unavailable, data from the closest available year was used instead.

The Pattern Holds on a Sector Level

Aggregating the data, we see that entire sectors are becoming more concentrated. Here's what the four largest look like.





put competitive pressure on all small operators, because WM could come into their territories and underbid them. Those smaller firms could either lose money or sell to WM. Huizenga's success represented a huge increase in pressure on the system.

Like a collapsing sandpile, the industry quickly consolidated, with WM as the dominant player, earning the highest profits; fellow consolidator Republic Services as the second-largest player, earning decent profits; several considerably smaller would-be consolidators earning few returns; and lots of tiny companies mainly operating at subsistence levels. The industry today is structured as a Pareto distribution, with WM as winner-take-most. The company earned more than $14 billion in 2017; Huizenga died (in March 2018) a multibillionaire.

If WM is so highly efficient, why should we object? Don't all consumers benefit, and does it matter whether WM or a collection of small firms issues sanitation workers' paychecks? The answer is that a superefficient dominant model elevates the risk of catastrophic failure. To understand why, we'll turn to an example from agriculture.

The Problem with Monocultures

Almonds were once grown in a number of places in America. But some locations proved better than others, and as in most production contexts, economies of scale could be had from consolidation. As it turns out, California's Central Valley is perfect for almond growing, and today more than 80% of the world's almonds are produced there. This is a classic business example of what biologists call a monoculture: A single factory produces a product, a single company holds sway in an industry, a single piece of software dominates all systems.

Such efficiency comes at a price. The almond industry designed away its redundancies, or slack, and in the process it lost the insurance that redundancy provides. One extreme local weather event or one pernicious virus could wipe out most of the world's production.

And consolidation has knock-on effects. California's almond blossoms all need to be pollinated in the same narrow window of time, because the trees grow in the same soil and experience the same weather. This necessitates shipping in beehives from all over America. At the same time, widespread bee epidemics have created concern about the U.S. population's ability to pollinate all the plants that need the bees' work. One theory about the epidemics is that because hives are being trucked around the country as never before for such monoculture pollinations, the bees' resistance has been weakened.

Power and Self-Interest

As we saw with WM, another result of efficient systems is that the most efficient player inevitably becomes the most powerful one. Given that people operate substantially out

A superefficient dominant model elevates the risk of catastrophic failure. More than 80% of all almonds are now grown in California—so one extreme local weather event or one pernicious virus could destroy most of the world's production.

Spotlight

of self-interest, the more efficient a system becomes, the greater the likelihood that efficient players will game it—and when that happens, the goal of efficiency ceases to be the long-term maximization of overall societal value. Instead, efficiency starts to be construed as that which delivers the greatest immediate value to the dominant player.

You can see this dynamic in the capital markets, where key corporate decision makers make common cause with the largest shareholders. It goes like this: Institutional investors support stock-based compensation for senior executives. The executives then take actions to reduce payroll and cut back on R&D and capital expenditures, all in the name of efficiency. The immediate savings boost cash flow and consequently cause the stock price to spike. Those investors—especially actively trading hedge funds—and executives then sell their holdings to realize short-term gains, almost certainly moving back in after the resulting decline in price. Their gains come at a cost. The most obvious losers are employees who are laid off because of the company's flagging fortunes. But long-term shareholders also lose, because the company's future is imperiled. And customers suffer in terms of product quality, which is threatened as the company reduces its investment in making improvements.

Advocates of shareholder value argue that competition from entrants with superior products and services will compensate: The newcomers will employ the laid-off workers, customers will flock to their products, and shareholders will switch to the investments that promise better returns. But this assumes that the market is highly dynamic and that power is not concentrated among a handful of players. Those assumptions are valid in some sectors. The airline industry is one: The main assets—planes and gates—are relatively easy to acquire and dispose of, so whenever demand rises, new players can enter. But it is not easy to start a bank, build a chip factory, or launch a telecom company. (Ironically, entry is perhaps most difficult in some of the hottest areas of the new economy, where competitive advantage is often tied up with network effects that give incumbents a powerful boost.) And sometimes power becomes so concentrated that political action is needed to loosen the stranglehold of the dominant players, as in the antitrust movement of the 1890s.

The pension fund business provides a particularly egregious case of abuse by dominant insiders. In theory, fund managers should compete on the quality of their long-term investment decisions, because that is what delivers value to pensioners. But 19 of the 25 biggest U.S. pension funds, accounting for more than 50% of the assets of the country's 75 largest pension funds, are government-created and -regulated monopolies. Their customers have no choice of provider. If you are a teacher in Texas, the government mandates that the Teacher Retirement System of Texas—a government agency—manage your retirement assets. Fund managers' jobs, therefore, are relatively secure as long as they don't screw up in some obvious and public way. They are well placed to game the system.

The most straightforward way to do so is to accept inducements (typically offered by hedge funds) to invest in a particular way (one that benefits the hedge funds). In the past 10 years alone, senior executives of two of America's largest pension funds (government monopolies, I might add) were successfully prosecuted for taking multi-million-dollar bribes from hedge funds. We can assume that for each occurrence we see, many more escape our scrutiny—and the bribery isn't always so blatant, of course. Pension fund managers also accept luxurious trips they couldn't afford on their own, and many have left their positions for lucrative jobs at investment banks or hedge funds.

A particularly insidious pension-fund practice is lending stock to short-selling hedge funds (pension funds are the largest such lenders), in return for which the funds' managers earn relatively modest fees that help them meet their returns goals. The practice lets hedge funds create volatility in the capital markets, generating opportunities for traders but compromising the ability of company leaders to manage for the long term. Pensioners suffer while hedge funds and pension fund managers benefit.

The invisible hand of competition steers self-interested people to maximize value for all over the long term only in very dynamic markets in which outcomes really are random. And the process of competition itself works against this as long as it is focused exclusively on short-term efficiency, which, as we have seen, gives some

People operate substantially out of self-interest, so the more efficient a system becomes, the greater the odds that efficient players will game it—and when that happens, the goal of efficiency ceases to be the maximization of societal value.

players an advantage that often proves quite durable. As those players gain market share, they also gain market power, which makes it easier for them to gain value for their own interests by extracting rather than creating it.

How can society prevent the seemingly inevitable process of efficient entropy from taking hold? We must pay more attention to the less appreciated source of competitive advantage mentioned earlier: resilience.

Toward Resilience

Resilience is the ability to recover from difficulties—to spring back into shape after a shock. Think of the difference between being adapted to an existing environment (which is what efficiency delivers) and being adaptable to changes in the environment. Resilient systems are typically characterized by the very features—diversity and redundancy, or slack—that efficiency seeks to destroy.

To curb efficiency creep and foster resilience, organizations can:

Limit scale. In antitrust policy, the trend since the early 1980s has been to loosen enforcement so as not to impede efficiency. In fact, in the United States and the European Union, "increase in efficiency" is considered a legitimate defense of a merger challenged on the grounds that it would lead to excess concentration—even if the benefits of that efficiency gain would accrue to just a few powerful players.

We need to reverse that trend. Market domination is not an acceptable outcome, even if achieved through legitimate means such as organic growth. It isn't good for the world to have Facebook use its deep pockets from its core business to fund its Instagram subsidiary to destroy Snapchat. It isn't good to have Amazon kill all other retailers. It wasn't good to have Intel try to quash AMD decades ago by giving computer manufacturers discounts for not using AMD chips, and it wasn't good to have Qualcomm engage in similar behavior in recent years. Our antitrust policy needs to be much more rigorous to ensure dynamic competition, even if that means lower net efficiency.

Introduce friction. In our quest to make our systems more efficient, we have driven out all friction. It is as if we have tried to create a perfectly clean room, eradicating all the microbes therein. Things go well until a new microbe enters—wreaking havoc on the now-defenseless inhabitants.

To avoid such a trap, business and government need to engage in regular immunotherapy. Rather than design to keep all friction out of the system, we should inject productive friction at the right times and in the right places to build up the system's resilience.

For example, lower barriers to international trade should not be seen as an unalloyed good. Although David Ricardo clearly identified the efficiency gains from trade, he did not anticipate the impact on Pareto outcomes. Policy makers should deploy some trade barriers to ensure that a few massive firms don't dominate national markets, even if such domination appears to produce maximum efficiency. Small French baguette bakers are protected from serious competition by a staggering array of regulations. The result: Although not cheap, French baguettes are arguably the best in the world. Japan's nontariff barriers make it nearly impossible for foreign car manufacturers to penetrate the market, but that hasn't stopped Japan from giving rise to some of the most successful global car companies.

Friction is also needed in the capital markets. The current goal of U.S. regulators is to maximize liquidity and reduce transaction costs. This has meant that they first allowed the New York Stock Exchange to acquire numerous other exchanges and then allowed the NYSE itself to be acquired by the Intercontinental Exchange. A fuller realization of this goal would increase the pace at which the billionaire hedge-fund owners already at the far end of the Pareto distribution of wealth trade in fewer but ever bigger markets and generate even-more-extreme Pareto outcomes. U.S. regulators should act more like the EU, which blocked the merger of Europe's two biggest players, the London Stock Exchange and the Deutsche Börse. And they should stop placing obstacles in the way of new players seeking to establish new exchanges, because those obstacles only solidify the power of consolidated players. In addition, short selling and the volatility it engenders could be dramatically reduced if the government prohibited public sector pension funds (such as the California Public Employees' Retirement System and the New York State Common Retirement Fund) from lending stock.

Promote patient capital. Common equity is supposed to be a long-term

ABOUT THE ART
Photographs from the Honey Bees series
Moving a frame from their backyard hive into the studio has allowed the Voorhes, a husband-and-wife team, to explore broods and individual bees.

stake: Once it is given, the company notionally has the capital forever. In practice, however, anybody can buy that equity on a stock market without the company's permission, which means that it can be a short-term investment. But long-term capital is far more helpful to a company trying to create and deploy a long-term strategy than short-term capital is. If you give me $100 but say that you can change how it is to be used with 24 hours' notice, that money isn't nearly as valuable to me as if you said I can use it as I want for 10 years. If Warren Buffett's desired holding period for stock is, as he jokes, "forever," while the quantitative arbitrage hedge fund Renaissance Technologies holds investments only for milliseconds, Buffett's capital is more valuable than that of Renaissance.

The difference in value to the company notwithstanding, the two types of equity investments are given exactly the same rights. That's a mistake; we should base voting rights on the period for which capital is held. Under that approach, each common share would give its holder one vote per day of ownership up to 3,650 days, or 10 years. If you held 100 shares for 10 years, you could vote 365,000 shares. If you sold those shares, the buyer would get 100 votes on the day of purchase. If the buyer became a long-term holder, eventually that would rise to 365,000 votes. But if the buyer were an activist hedge fund like Pershing Square, whose holding period is measured in months, the interests of long-term investors would swamp its influence on strategy, quite appropriately.

Allocating voting rights in this way would reward long-term shareholders for providing the most valuable kind of capital. And it would make it extremely hard for activist hedge funds to take effective control of companies, because the instant they acquired a share, its rights would be reduced to a single vote.

Some argue that this would entrench bad management. It would not. Currently, investors who are unhappy with management can sell their economic ownership of a share along with one voting right. Under the proposed system, unhappy investors could still sell their economic ownership of a share along with one voting right. But if a lot of shareholders were happy with management and yet an activist wanted to make a quick buck by forcing the company to sell assets, cut R&D investment, or take other actions that could harm its future, that activist would have a reduced ability to collect the voting rights to push that agenda.

Create good jobs. In our pursuit of efficiency, we have come to believe that routine labor is an expense to be minimized. Companies underinvest in training and skill development, use temporary and part-time workers, tightly schedule to avoid "excess hours," and design jobs to require few skills so that they can be exceedingly low paid. This ignores the fact that labor is not just a cost; it is a resource that can be productive—and the current way of managing it drives down that productivity as it reduces the dollar cost.

What if we focused on longer-term productivity? Instead of designing jobs for low-skill, minimum-wage clock punchers, what if we designed them to be productive and valuable? In *The Good Jobs Strategy,* MIT's Zeynep Ton describes how some discount retailers have doubled down on their employees, seeking more-engaged and more-knowledgeable workers, better customer service, lower turnover, and increased sales and profits, all leading to further investment. A key but counterintuitive element of the strategy is to build in slack so that employees have time to serve customers in unanticipated yet valuable ways.

It's not just businesses that can benefit from a good jobs strategy. The cheap labor model is extremely costly to the wider economy. When they cut labor costs, companies such as Walmart simply transfer expenses traditionally borne by employers to taxpayers. A recent congressional study evaluated the impact of a single 200-person Walmart store on the federal budget. It turns out that each employee costs taxpayers $2,759 annually (in 2018 dollars) for benefits necessitated by the low wages, such as food and energy subsidies, housing and health care assistance, and federal tax credits. With 11,000 stores and 2.3 million employees, the company's much-touted labor efficiency carries a hefty price tag indeed.

Teach for resilience. Management education focuses on the single-minded pursuit of efficiency—and trains students in analytic techniques that deploy short-term proxies for measuring that quality. As a result, graduates head into the world to build (inadvertently, I believe) highly

efficient businesses that largely lack resilience.

Management deans, professors, and students would undoubtedly beg to differ. But the curricula show otherwise. Finance teaches the pursuit of efficient financial structures. Efficient cost management is the goal of management accounting. Human resources teaches efficient staffing. Marketing is about the efficient targeting of and selling to segments. Operations management is about increasing plants' efficiency. The overarching goal is the maximization of shareholder value.

Of course, none of these in itself is a bad thing. A corporation *should* maximize shareholder value—in the very long term. The problem is that today's market capitalization is what defines shareholder value. Similarly, this quarter's reductions in labor costs are what define efficiency. And the optimal capital structure for this year's operating environment is what defines an efficient deployment of capital. Those are all short-term ways of assessing long-term outputs.

If we continue to promote these short-term proxies, managers will seek to maximize them, despite the cost to long-term resilience. And activist hedge funds will take control of companies and cause them to act in ways that appear, if judged by short-term proxies, to be highly efficient. Those funds will be applauded by regulators and institutional proxy

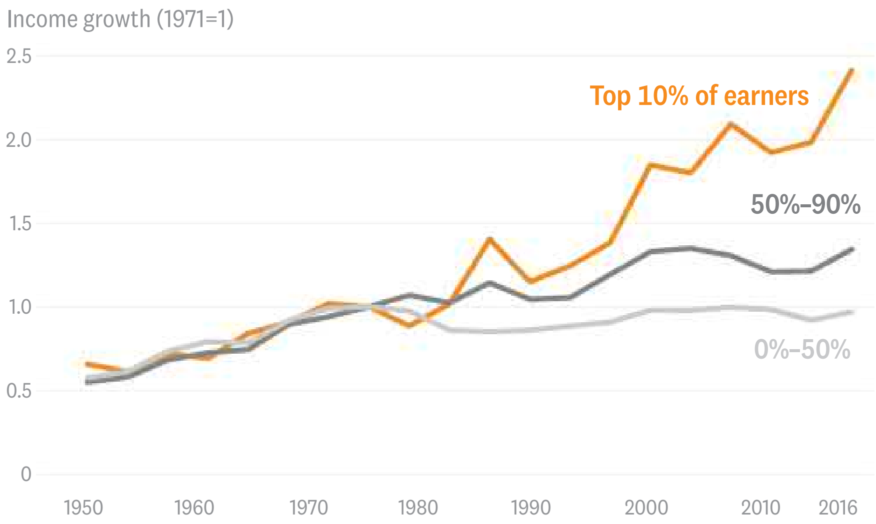
Success Breeds Inequality: What the Data Shows

by Jacob Greenspon and Darren Karn

The recovery from the Great Depression of the 1930s was characterized by a degree of social solidarity and a narrowing of the gap between rich and poor. The recovery from the Great Recession of 2007–2009 has been very different. In the United States, for example, the gap between the wage growth of the rich and that of the poor has widened significantly, while the difference in earnings between the most successful firms and the rest has grown dramatically.

Rich People Are Getting (a Lot) Richer

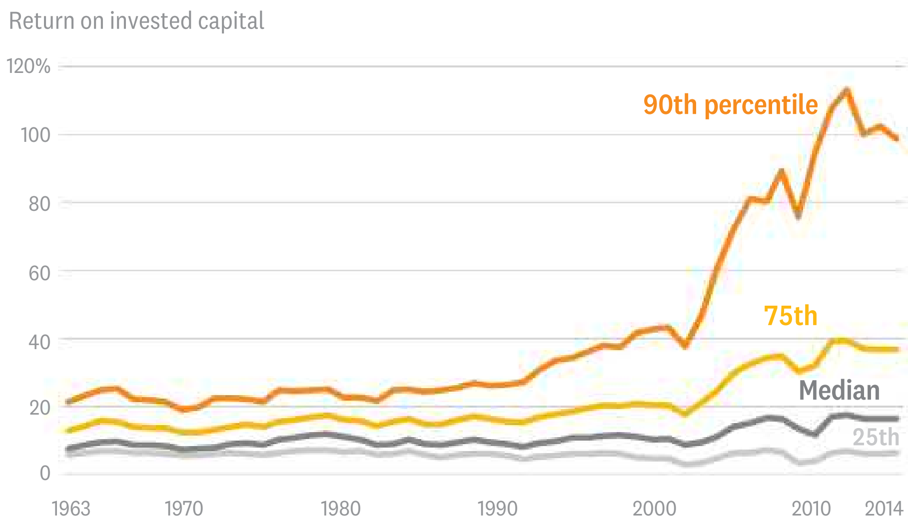
Since 1971 incomes for the bottom half of the wealth distribution have been stagnant, and they have grown by only a third for Americans in the 50th to 90th percentiles—but they have more than doubled for the top 10%.



Source: "Income and Wealth Inequality in America, 1949–2016," by Moritz Kuhn, Moritz Schularick, and Ulrike I. Steins (working paper)

The Wealthiest Firms Are Pulling Away

The gap between top-earning and median firms in the United States has grown drastically since 1990. The latest data shows that firms at or above the 90th percentile of earnings have returns that nearly double their capital investments, compared with returns of just 15% for median firms.



Source: "A Firm-Level Perspective on the Role of Rents in the Rise in Inequality," by Jason Furman and Peter Orszag (Obama White House Archives) voting advisers, all of whom will continue to think their actions have nothing to do with the production of more-fragile companies.

For the sake of the future of democratic capitalism, management education must become a voice for, not against, resilience.

IN HIS 1992 work *The End of History and the Last Man,* Francis Fukuyama argued that the central theme of modern history is the struggle between despotism and what we now know as democratic capitalism. The latter certainly has the upper hand. But it's a stretch to claim, as Fukuyama did, that it has won the war. Every day we find evidence that economic efficiency, which has traditionally underpinned democratic capitalism, is failing to distribute the concomitant gains. The stark realities of the Pareto distribution threaten the electorate's core belief that the combination of democracy and capitalism can make the lives of a majority of us better over time. Our system is much more vulnerable and much less fair than we like to think. That needs to change.

HBR Reprint R1901B

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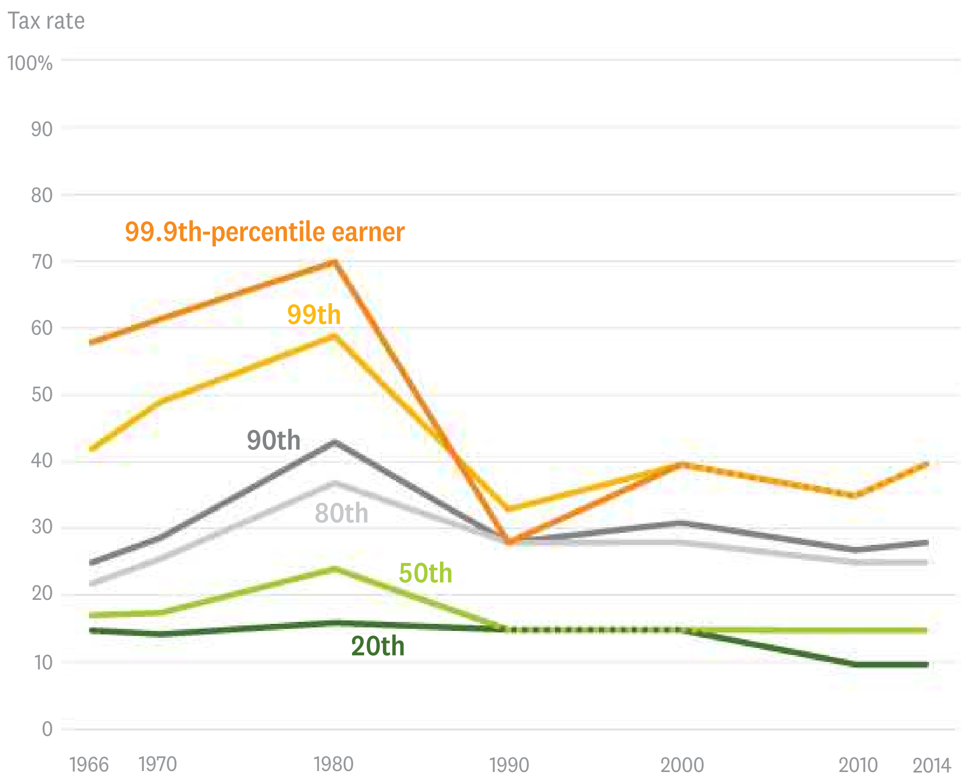
The Tax System Has Grown Less Progressive

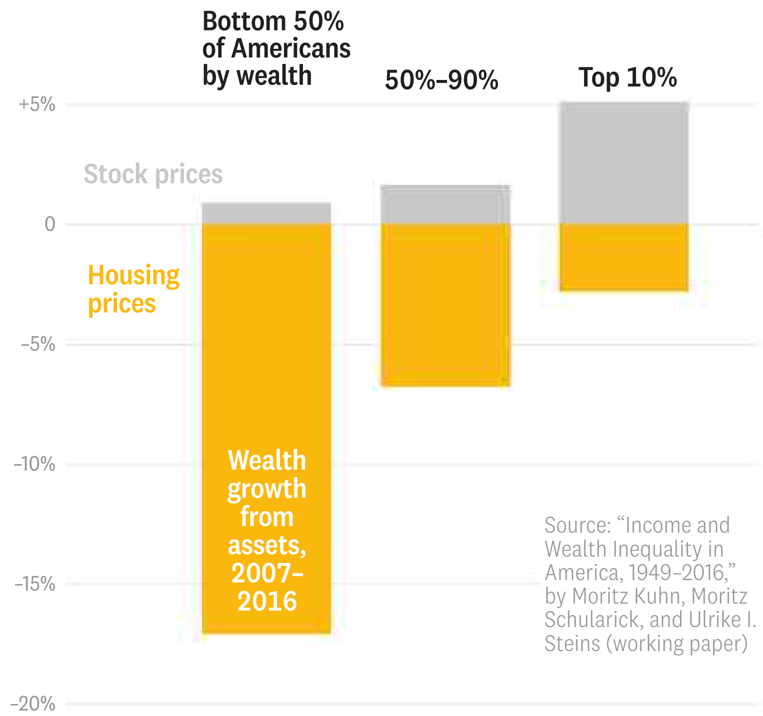
Federal income-tax rates for most Americans increased steadily throughout the 1970s before falling sharply after the 1981 and 1986 Reagan tax cuts. Taxes paid by the highest-earning Americans on their final dollars of income have dropped sharply since 1966, while taxes paid by those near the middle of the income distribution have declined by far less—and in some cases have increased.



Source: Data from the World Inequality Database, the National Bureau of Economic Research, and the Tax Foundation; analysis by the Martin Prosperity Institute

Stocks Have Fully Recovered—but Housing Prices Have Not

The weak recovery of housing prices after the 2008 crash has meant that Americans whose wealth is based in housing assets have become poorer. The bottom 50% of Americans lost 16% of their wealth, on average, from 2007 to 2016 (after adjusting for inflation). But the main stock-market indices were 30% above their 2007 levels by 2016—a rebound that largely benefited the wealthy.



Source: "Income and Wealth Inequality in America, 1949–2016," by Moritz Kuhn, Moritz Schularick, and Ulrike I. Steins (working paper)

JACOB GREENSPON *is a researcher, and* **DARREN KARN** *is a senior research associate, at the Martin Prosperity Institute.*

“THE COSTS OF COMPLEXITY ARE HARD TO SEE”

A conversation with **Jim Hackett**, CEO of Ford Motor Company

IN THE LOBBY OF FORD Motor Company’s headquarters, in Dearborn, Michigan, sits a replica of a Model T. The car—the first to be produced on a moving assembly line, and available for many years in only one color, black—provides a reminder that efficiency can propel a company to industry dominance. But upstairs on the 12th floor, president and CEO Jim Hackett is leading the firm toward a different goal: what he calls *corporate fitness*. Hackett, who led the office furniture company Steelcase through an IPO and championed its shift from selling cubicles to selling collaborative open workspaces, joined Ford’s board in 2013. He left that post in 2016 to become the chairman of Ford Smart Mobility. In May of 2017 he was named CEO by executive chairman Bill Ford. In a recent conversation with HBR senior editor Daniel McGinn, Hackett—who has worked for many years with the strategy adviser Roger L. Martin (author of “The High Price of Efficiency,” in this package)—discussed the difference between efficiency and fitness, how he communicates complex ideas to his workforce, and the challenge of convincing Wall Street that he is succeeding at moving the company forward. Edited excerpts follow.

HBR: **Automobile manufacturers are obsessed with efficiency. Isn’t Roger Martin’s argument, that a company can be *too* efficient, sort of heretical?**

HACKETT: There’s always been a meme that goes: “Do you want speed, quality, or low cost? You can afford only two of the three.” Efficiency is a balance of all three. But today we win or lose on the basis of better system design. A system needs to have efficiency built in, because if it uses too many resources, it can’t survive. But winning isn’t just about efficiency.

Is it about what you’ve termed “corporate fitness”? What do you mean by that?

People ask, “Why don’t you just say, ‘Let’s reduce costs’?” But when I say “fitness,” I’m thinking about what Darwin learned about survival of the fittest—that a species evolves to be more competitive. Being competitive now is about a lot of factors. How long does it take an order to be delivered? How many products does a company offer? Do you have the right or the wrong people? Businesses win by having a combination of the right people and the right design.

Your ideas about how organizations evolve stem from Darwin?

Yes. Years ago a professor gave me a bunch of white papers written by physicists at the Santa Fe Institute, and I became voraciously interested in them. I began to learn about complex systems theory, which holds that evolution isn’t just a biological process; it can apply to social organizations as well. I found myself asking, “If Darwin’s

Photography by MARVIN SHAOUNI

ideas exist in nature, who am I to say they don't apply in business? What if they apply everywhere?"

How did you apply them at Steelcase?
I was the CEO at Steelcase for 20 years, so like Darwin with biology, I got to see the company evolve over time. I found myself in a wave pattern, where I was shrinking the company during recessions, then growing it, then shrinking it, then growing it. That's not healthy. We needed to design the company for all states, by lowering our average costs. That's part of what I mean by fitness.

It sounds as though you define fitness as the ability to deal with a shifting landscape. So if a marathoner is good at long races, that's efficient, but a decathlete can tackle a variety of events, so he or she is fitter. Is that it?
That's close. Let me use a different analogy. Imagine you and I are racing up a big mountain. I beat you, but only by a nanosecond. Imagine I show up the next year for the race and say to myself, "I've got to do better than I did last year." I start off the race, and I'm winning—my time is better. But the environment on the mountain has changed, so I need to perform much better than last year to win again. That's what makes this hard—it's dynamic. That's the Darwinian part. Businesses typically look at market share, profits, and earnings per share. Those are important things. But it isn't just our earnings per share versus those of other auto manufacturers that count. It's our cycle time versus Amazon's, for example. Amazon doesn't make cars, but it could sell them, or it could sell auto parts. That's what happens with disruption. You probably don't lose to the standard competitors; it's the mutation coming at you that matters. You can't count on the mountain you're climbing to stay the same.

Your efforts to make Ford fitter include building your models on fewer platforms and reducing the number of options and configurations consumers can choose from. Ford made a big push in that direction during the 1990s. Why didn't it work?
Complexity creeps in over time. In nature, forest fires actually help forests thrive, by burning away the underbrush. At Ford we're right in the middle of that work of eliminating complexity. We're getting really great results. My concern is that the gestation period in the auto industry is longer than in the industry I came from. I don't want people to lose confidence; I know these

theories work. People say, "We haven't seen it yet." They will. The costs of complexity are hard to see until they're gone.

You have an affinity for very complex ideas, and you describe them in complicated ways. As a leader, does that create challenges?
Unquestionably. The good news is, I've been through this before, at Steelcase. My job is to help paint a picture people can understand. I'm purposely using different language. Why say "fitness" instead of "reduce costs"? Because the solution to reducing costs is to hold your breath. And when you hold your breath but don't change anything else, the costs come back. During the Great Recession, Ford brought its breakeven down significantly. But the costs all came back, because the company didn't change the design.

I'm working on the communication part. One way is by delegating some of it. Another is by boiling down our plan so that people can follow it.

Back in 2012 or 2013, near the end of Alan Mulally's time as CEO, what could have been done differently to put Ford in a better position today?
I always start by saying the management team in place was really smart. So what did it miss? In my assessment, it missed that our competitors were all bankrupt when our strategy emerged. Ford was the stronger, fitter player, which allowed it to avoid bankruptcy—and on one level, that was an advantage. The negative was that competitors came out of bankruptcy stronger and fitter. Bankruptcy forced them to redesign their businesses. What Ford missed was that competitors were getting fitter while we were on a trajectory we could celebrate, so we didn't change enough.

Does Ford's status as a family-controlled company make it easier to pursue large-scale change?
The Fords are what we call long-arc shareholders. They have been owners since 1903, and they retain 40% of the general voting power. That tells you they've got a deep commitment. Bill Ford wants to win. He's proud of Ford's forward-leaning attributes—the way the company treats its people, the way it affects the environment. But his eyes get really big when he drives a Mustang; the vitality of the product matters deeply to him. We had long talks before I took this job. I told him he had a bunch of people he could choose from and that I might not be the best guy. I wasn't selling myself, because I was being asked to consider the job.

Why might you not have been "the best guy"?
It relates to something you asked about earlier: communication. Was the nature of the transformation going to be really simple and well understood in the early periods? I told him it would take a while for the internal organization to get traction. We're going to get results, and then Wall Street will follow.

Since becoming CEO, you've announced that Ford will stop selling most models of cars in the United States. How did you conclude you can't play to win in that segment?
If you drew an outline around the Model T, you'd have a silhouette. I ask people, "Where is that silhouette today? Is it still on the market?" No. Over time that silhouette—the shape of the car—has changed, because the world, the markets, and the size of people have changed.

Sedans mutated because buyer preference turned to larger silhouettes, such as sport utility vehicles. In the past, automakers were reluctant to stop selling small cars, because they were afraid that if fuel prices went up, they'd get nailed. Low fuel prices teach us what people really prefer: They prefer larger silhouettes. But now we have new forms of propulsion—battery electrics and hybrids. We're designing vehicles that will deliver a larger silhouette without a penalty in fuel efficiency.

Roger Martin argues that efficiency increases risk by reducing redundancy and resiliency. Is Ford less resilient because of its reliance on the F-150 pickup truck, which is responsible for all the company's profits?
We're actually in a really favored place with the F-150, where we play to win. We can take more risks with it. We have other silhouettes with properties of the F-150 that we get to exploit. The Super Duty—a pickup with more horsepower and higher torque—grew faster than the F-150 this year. In meetings we talk about what makes the pickup truck so fit today. Why is it so popular? It's because buyers have jobs that have to be done that the F-150 is very good at. So we ask: Do we really understand its performance? And how can we support those jobs even better in the future?

“When I talk about ‘corporate fitness,’ I’m thinking about what Darwin learned about survival of the fittest—that a species evolves to be more competitive. Evolution isn’t just a biological process; it can apply to social organizations as well.”

Ford, like other carmakers, is investing a lot in autonomous vehicles. When will they hit the market?
My optimism about that future is really high. It’s probably just further out than people realize. There’s a quote that goes something like this: People overestimate the impact of technology in the short run and underestimate its impact in the long run. That’s probably true in this area. When those vehicles do arrive, they’ll be a dramatic disrupter.

Is corporate fitness especially important for a global manufacturer during an era of political uncertainty and shifts in trade policy?
Trade systems are best for us when they’re in equilibrium. You can design your business around equilibrium. We don’t want to be in a trade war; that’s a bad idea. We don’t need certainty—we can deal with the ups and downs of weather or raw materials shortages. But it’s hard to prepare for a sudden decision to put a 25% tax on something.

You use the word “teach” more than most other CEOs do. Is that an important part of the way you lead?
In a job like this, you have high-powered people working for you. They don’t need you to wind them up every day. So the role I have to play is, rather than tell them what to do, help them see how wisdom and curiosity can help us design better. I’ve asked employees to let me play that role and to have patience with it. We’re getting into a rhythm together.

In your industry there’s a lot of focus on Tesla, which built a product people love but has struggled to scale up production. What do you make of its challenges?
People sometimes say something isn’t rocket science. I actually have a competitor, Elon Musk, who is a rocket scientist. I have tremendous respect for him because of the way he questions the design of the system.

Ford builds a vehicle every four seconds. So there’s something about the fitness of our system that those who are starting out can’t yet equal. How it all gets choreographed is a really hard physics problem—just as hard as putting a rocket into space. But there’s no question the fitness of the system has improved because of Tesla’s arrival. Customers now expect over-the-air updates of automobile software [because Tesla provides them]. That will be a table stakes thing in the car business that can be attributed to Musk.

Does Tesla’s presence help you convince employees that they need to look beyond GM and Toyota and imagine new kinds of competitors?
When a car company gets 400,000 or 500,000 preorders for a vehicle, you have to pay attention. The humility here is what Darwin taught us: There’s no guarantee for your future. That doesn’t mean we can’t be optimistic. It just means the design probably won’t stay the same.

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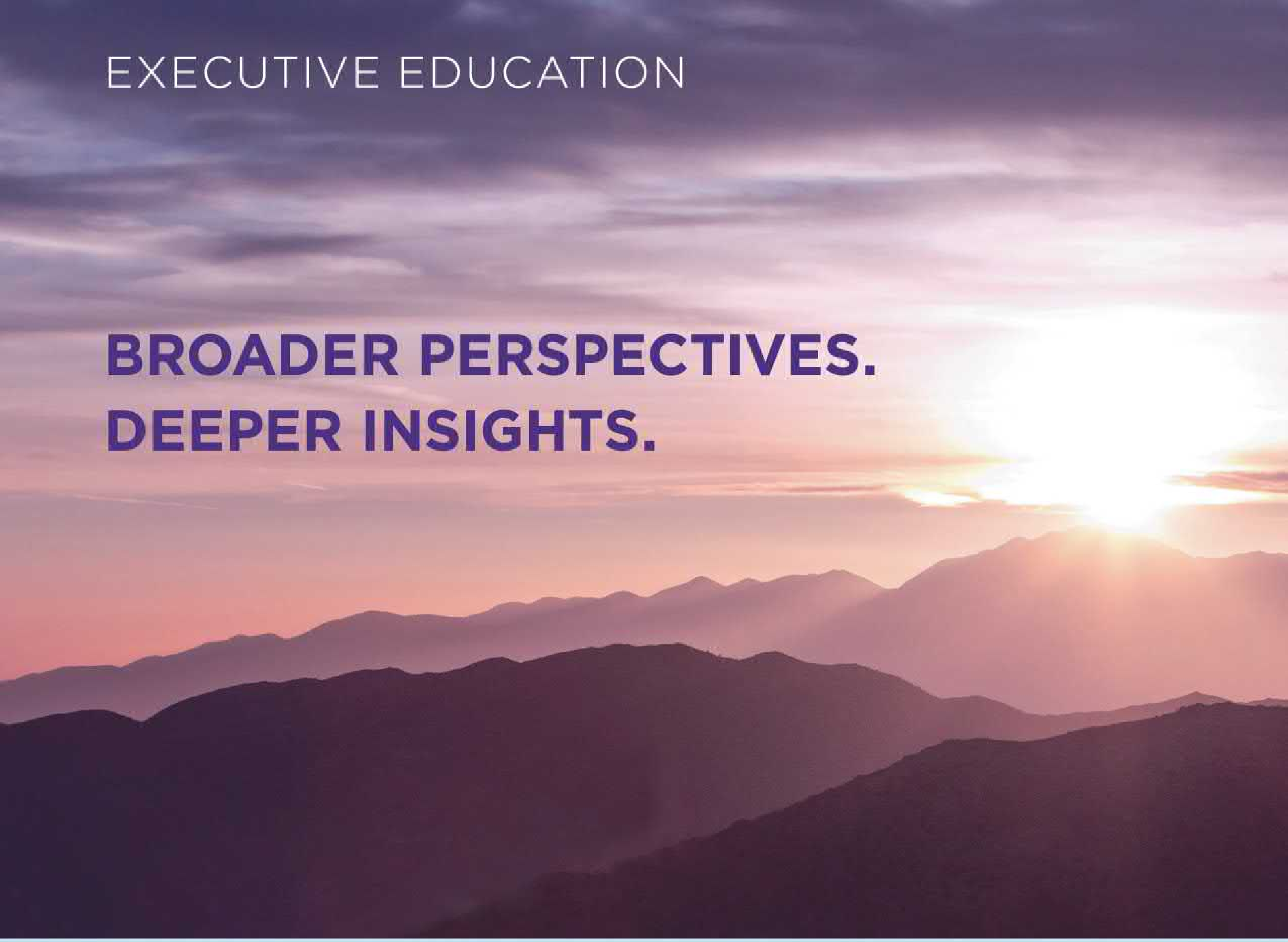

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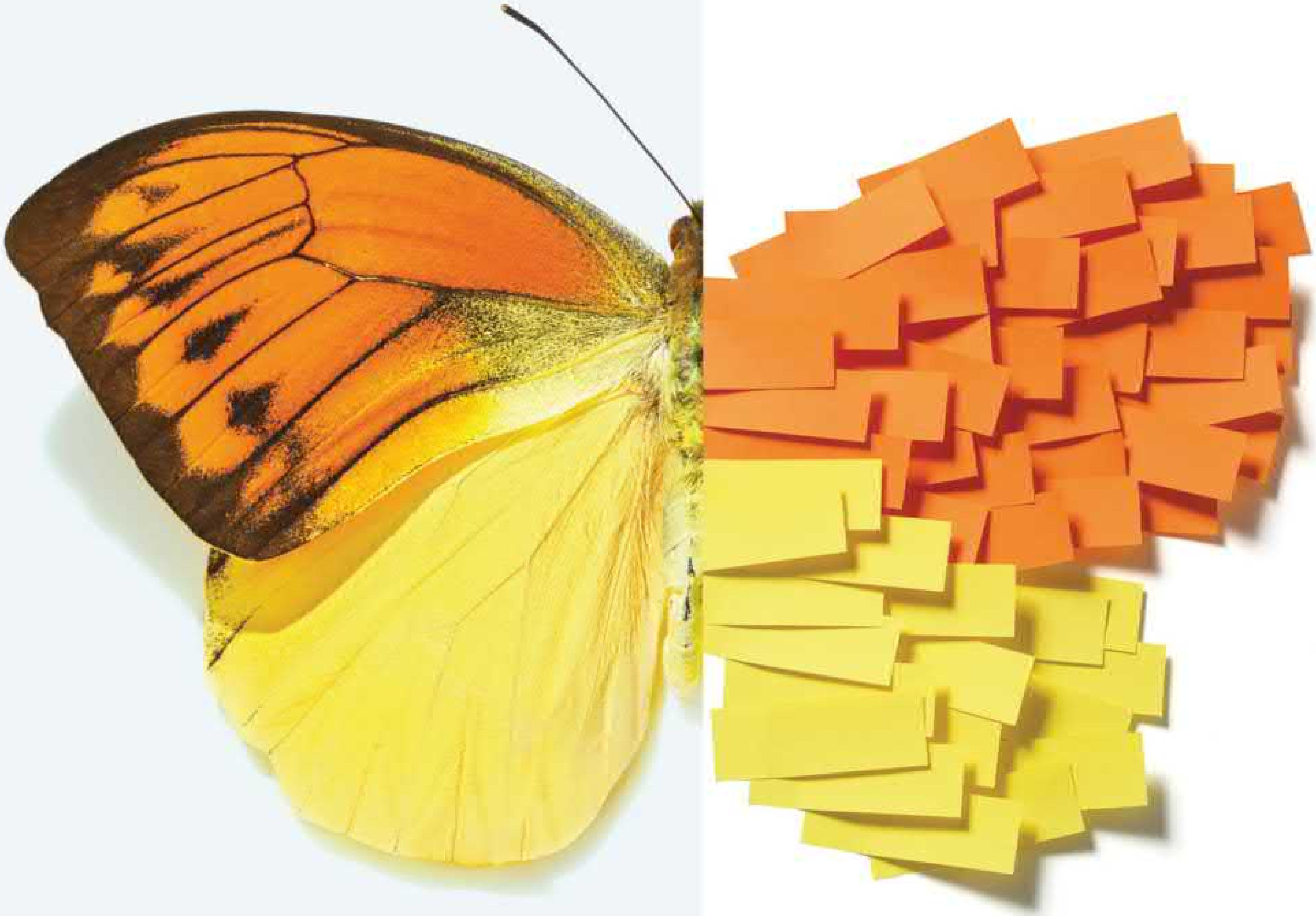

Innovative cultures are misunderstood. The easy-to-like behaviors that get so much attention are only one side of the coin. They must be counterbalanced by some tougher and frankly less fun behaviors. A tolerance for failure requires an intolerance for incompetence. A willingness to experiment requires rigorous discipline.

–THE HARD TRUTH ABOUT INNOVATIVE CULTURES, PAGE 62

Photograph by YASU+JUNKO

culture

Gary P. Pisano
Professor, Harvard Business School

The Hard Truth

Creativity can be messy.

Photography by **GRACE CHON**

About Innovative Cultures

It needs discipline and management.

culture

Idea in Brief

THE FRUSTRATION

The conventional wisdom is that successful innovation depends on providing an environment where there's a tolerance for failure and a willingness to experiment, it's safe to speak up, and it's highly collaborative and nonhierarchical. The reality is that these elements do not suffice.

WHAT'S MISSING

Each of these easy-to-like behaviors must be counterbalanced by tougher behavior that's less fun: an intolerance for incompetence, rigorous discipline, brutal candor, a high level of individual accountability, and strong leadership.

THE LEADER'S ROLE

Such a culture generates tensions that must be carefully managed. Uncertainty and confusion must be addressed with decisiveness and transparency. People who can't adapt must be ushered out. The temptation to take shortcuts must be resisted.

ABOUT THE ART
Photographs from the Hairy series
Grace Chon's images of dogs before and after their Japanese-style grooming highlight the individuality and uniqueness of each dog.

A culture conducive to innovation is not only good for a company's bottom line. It also is something that both leaders and employees value in their organizations.

In seminars at companies across the globe, I have informally surveyed hundreds of managers about whether they want to work in an organization where innovative behaviors are the norm. I cannot think of single instance when someone has said "No, I don't." Who can blame them: Innovative cultures are generally depicted as pretty fun. When I asked the same managers to describe such cultures, they readily provided a list of characteristics identical to those extolled by management books: tolerance for failure, willingness to experiment, psychological safety, highly collaborative, and nonhierarchical. And research supports the idea that these behaviors translate into better innovative performance.

But despite the fact that innovative cultures are desirable and that most leaders claim to understand what they entail, they are hard to create and sustain. This is puzzling. How can practices apparently so universally loved—even fun—be so tricky to implement?

The reason, I believe, is that innovative cultures are misunderstood. The easy-to-like behaviors that get so much attention are only one side of the coin. They must be counterbalanced by some tougher and frankly less fun behaviors. A tolerance for failure requires an intolerance for incompetence. A willingness to experiment requires rigorous discipline. Psychological safety requires comfort with brutal candor. Collaboration must be balanced with a individual accountability. And flatness requires strong leadership. Innovative cultures are paradoxical. Unless the tensions created by this paradox are carefully managed, attempts to create an innovative culture will fail.

1. Tolerance for Failure but No Tolerance for Incompetence

GIVEN THAT INNOVATION involves the exploration of uncertain and unknown terrain, it is not surprising that a tolerance for failure is an important characteristic of innovative cultures. Some of the most highly touted innovators have had their share of failures. Remember Apple's MobileMe, Google Glass, and the Amazon Fire Phone?

And yet for all their focus on tolerance for failure, innovative organizations are intolerant of incompetence. They set exceptionally high performance standards for their people. They recruit the best talent they can. Exploring risky ideas that ultimately fail is fine, but mediocre technical skills, sloppy thinking, bad work habits, and poor management are not. People who don't meet expectations are either let go or moved into roles that better fit their abilities. Steve Jobs was notorious for firing anyone he deemed not up to the task. At Amazon, employees are ranked on a forced curve, and the bottom part of the distribution is culled. Google is known to have a very employee-friendly culture, but it's also one of the hardest places on earth to get a job (each year the company gets more than 2 million applications for about 5,000 positions). It, too, has a rigorous performance management system that moves people into new roles if they are not excelling in their existing ones. At Pixar, movie directors who cannot get projects on track are replaced.

It sounds obvious that companies should set high quality standards for their employees, but unfortunately all too many organizations fall short in this regard. Consider a pharmaceutical company I recently worked with. I learned that one of its R&D groups had not discovered a new drug candidate in more than a decade. Despite the poor performance, senior leaders had made no real changes in the group's management or personnel. In fact, under the company's egalitarian compensation system, the scientists in the group had been receiving approximately the same salaries

and bonuses as scientists in much more productive R&D units. One senior leader confided to me that short of ethics violations, the company rarely terminated anyone in R&D for subpar performance. When I asked why, he said, "Our culture is like a family. Firing people is not something we're comfortable with."

The truth is that a tolerance for failure requires having extremely competent people. Attempts to create novel technological or business models are fraught with uncertainty. You often don't know what you don't know, and you have to learn as you go. "Failures" under these circumstances provide valuable lessons about paths forward. But failure can also result from poorly thought-out designs, flawed analyses, lack of transparency, and bad management. Google can encourage risk taking and failure because it can be confident that most Google employees are very competent.

Creating a culture that simultaneously values learning through failure and outstanding performance is difficult in organizations with a history of neither. A good start is for senior leadership to articulate clearly the difference between productive and unproductive failures: Productive failures yield valuable information relative to their cost. A failure should be celebrated only if it results in learning. (The cliché "celebrating failure" misses the point—we should be celebrating learning, not failure.) A simple prototype that fails to perform as expected because of a previously unknown technical issue is a failure worth celebrating if that new knowledge can be applied to future designs. Launching a badly engineered product after spending $500 million developing it is just an expensive flop.

Building a culture of competence requires clearly articulating expected standards of performance. If such standards are not well understood, difficult personnel decisions can seem capricious or, worse, be misconstrued as punishment for a failure. Senior leaders and managers throughout the organization should communicate expectations clearly and regularly. Hiring standards may need to be raised, even if that temporarily slows the growth of the company.

Managers are especially uncomfortable about firing or moving people when their "incompetence" is no fault of their own. Shifting technologies or business models can render a person who's very competent in one context incompetent in another. Consider how digitization has impacted the value of different skills in many industries. That sales representative whose deft interpersonal skills made him a superstar may no longer be as valuable to the organization as the introverted software engineer who develops the algorithms used to predict which customers are most likely to buy the company's products. In some cases, people can be retrained to develop new competences. But that's not always possible when really specialized skills (say, a PhD in applied math) are needed to do a job. Keeping people who have been rendered obsolete may be compassionate, but it's dangerous for the organization.

Maintaining a healthy balance between tolerating productive failures and rooting out incompetence is not easy. A 2015

A willingness to experiment does not mean working like some third-rate abstract painter who randomly throws paint at a canvas.

New York Times article about Amazon illustrates the difficulty. The piece, which was based on interviews with more than 100 current and former employees, labeled Amazon's culture as "bruising" and recounted stories of employees crying at their desks amid enormous performance pressures. One reason striking a balance is so hard is that the causes of failure are not always clear. Did a product design turn out to be flawed because of an engineer's bad judgment or because it encountered a problem that even the most talented engineer would have missed? And in the event of bad technical or business judgments, what are the appropriate consequences? Everyone makes mistakes, but at what point does forgiveness slide into permissiveness? And at what point does setting high performance standards devolve into being cruel or failing to treat employees—regardless of their performance—with respect and dignity?

2. Willingness to Experiment but Highly Disciplined

ORGANIZATIONS THAT EMBRACE experimentation are comfortable with uncertainty and ambiguity. They do not pretend to know all the answers up front or to be able to analyze their way to insight. They experiment to learn rather than to produce an immediately marketable product or service.

A willingness to experiment, though, does not mean working like some third-rate abstract painter who randomly throws paint at a canvas. Without discipline, almost anything can be justified as an experiment. Discipline-oriented cultures select experiments carefully on the basis of their potential learning value, and they design them rigorously to yield as much information as possible relative to the costs. They establish clear criteria at the outset for deciding whether to move forward with, modify, or kill an idea. And they face the facts generated by experiments. This may mean admitting that an initial hypothesis was wrong and that a project that once seemed promising must be killed or significantly redirected. Being more disciplined about killing losing projects makes it less risky to try new things.

A good example of a culture that combines a willingness to experiment with strict discipline is Flagship Pioneering, a Cambridge, Massachusetts, company whose business model is creating new ventures based on pioneering science. Flagship generally does not solicit business plans from independent entrepreneurs but instead uses internal teams of scientists to discover new-venture opportunities. The company has a formal exploration process whereby small teams of scientists, under the direction of one of the company's partners, undertake research on a problem of major social or economic importance—nutrition, for example. During these explorations, teams read the literature on the topic and engage the company's broad network of external scientific advisers to conceive new scientific insights. Explorations are initially unconstrained. All ideas—however seemingly unreasonable or far-fetched—are entertained. According to founder and CEO Noubar Afeyan, "Early in our explorations, we don't ask, 'Is this true?' or 'Is there data to support this idea?' We do not look for academic papers that provide proof that something is true. Instead, we ask ourselves, 'What if this were true?' or 'If only this were true, would it be valuable?'" Out of this process, teams are expected to formulate testable venture hypotheses.

Experimentation is central to Flagship's exploration process because it is how ideas are culled, reformulated, and evolved. But experimentation at Flagship differs in fundamental ways from what I often see at other companies. First, Flagship does not run experiments to validate initial ideas. Instead, teams are expected to design "killer experiments" that maximize the probability of exposing an idea's flaws. Second, unlike many established companies that heavily fund new ventures in the mistaken belief that more resources translate into more speed and more creativity, Flagship normally designs its killer experiments to cost less than $1 million and take less than six months. Such a lean approach to testing not only enables the firm to cycle through more ideas more quickly; it also makes it psychologically easier to walk away from projects that are going nowhere. It forces teams to focus narrowly on the most critical technical uncertainties and gives them faster feedback. The philosophy is to learn what you have gotten wrong early and then move quickly in more-promising directions.

Third, experimental data at Flagship is sacred. If an experiment yields negative data about a hypothesis, teams are expected to either kill or reformulate their ideas accordingly. In many organizations, getting an unexpected result is "bad news." Teams often feel the need to spin the data—describing the result as an aberration of some sort—to keep their programs alive. At Flagship, ignoring experimental data is unacceptable.

Finally, Flagship's venture team members themselves have a strong incentive to be disciplined about their programs. They gain no financial benefit from sticking with a loser program. In fact, just the opposite is true. Continuing to pursue a failed program means forgoing the opportunity to join a winning one. Again, compare this model with what is common in many companies: Having your program canceled is terrible news for you personally. It could mean loss of status or perhaps even your job. Keeping your program alive is good for your career. At Flagship, starting a successful venture, not keeping your program alive, is good for your career. (Disclosure: I serve on the board of a Flagship company, but the information in this example comes from a Harvard Business School case I researched and coauthored.)

Disciplined experimentation is a balancing act. As a leader, you want to encourage people to entertain "unreasonable ideas" and give them time to formulate their hypotheses. Demanding data to confirm or kill a hypothesis too quickly can squash the intellectual play that is necessary for creativity. Of course, not even the best-designed and well-executed experiments always yield black-and-white results. Scientific and business judgments are required to figure out which ideas to move forward, which to reformulate, and which to kill. But senior leaders need to model discipline by, for example, terminating projects they personally championed or demonstrating a willingness to change their minds in the face of the data from an experiment.

3. Psychologically Safe but Brutally Candid

PSYCHOLOGICAL SAFETY IS an organizational climate in which individuals feel they can speak truthfully and openly about problems without fear of reprisal. Decades of research on this concept by Harvard Business School professor Amy Edmondson indicate that psychologically safe environments not only help organizations avoid catastrophic errors but also support learning and innovation. For instance, when Edmondson, health care expert Richard Bohmer, and I conducted research on the adoption of a novel minimally invasive surgical technology by cardiac surgical teams, we found that teams with nurses who felt safe speaking up about problems mastered the new technology faster. If people are afraid to criticize, openly challenge superiors' views, debate the ideas of others, and raise counterperspectives, innovation can be crushed.

We all love the freedom to speak our minds without fear—we all want to be heard—but psychological safety is a two-way street. If it is safe for me to criticize your ideas, it must also be safe for you to criticize mine—whether you're higher or lower in the organization than I am. Unvarnished candor is critical to innovation because it is the means by which ideas evolve and improve. Having observed or participated in numerous R&D project team meetings, project review sessions, and board of directors meetings, I can attest that comfort with candor varies dramatically. In some organizations, people are very comfortable confronting one another about their ideas, methods, and results. Criticism is sharp. People are expected to be able to defend their proposals with data or logic.

In other places, the climate is more polite. Disagreements are restrained. Words are carefully parsed. Critiques are muffled (at least in the open). To challenge too strongly is to risk looking like you're not a team player. One manager at a large company where I worked as a consultant captured the essence of the culture when she said, "Our problem is that we are an incredibly nice organization."

When it comes to innovation, the candid organization will outperform the nice one every time. The latter confuses politeness and niceness with respect. There is nothing inconsistent about being frank and respectful. In fact, I would argue that providing and accepting frank criticism is one of the hallmarks of respect. Accepting a devastating critique of your idea is possible only if you respect the opinion of the person providing that feedback.

Still, that important caveat aside, "brutally honest" organizations are not necessarily the most comfortable environments in which to work. To outsiders and newcomers, the people may appear aggressive or hard-edged. No one minces words about design philosophies, strategy, assumptions, or perceptions of the market. Everything anyone says is scrutinized (regardless of the person's title).

Building a culture of candid debate is challenging in organizations where people tend to shy away from confrontation or where such debate is viewed as violating norms of civility. Senior leaders need to set the tone through their own behavior. They must be willing (and able) to constructively critique others' ideas without being abrasive. One way to encourage this type of culture is for them to demand criticism of their own ideas and proposals. A good blueprint for this can be found in General Dwight D. Eisenhower's battle-plan briefing to top officers of the Allied forces three weeks before the invasion of Normandy. As recounted in *Eisenhower,* a biography by Geoffrey Perret, the general started the meeting by saying, "I consider it the duty of anyone who sees a flaw in this plan not to hesitate to say so. I have no sympathy with anyone, whatever his station, who will not brook criticism. We are here to get the best possible results."

Eisenhower was not just inviting criticism or asking for input. He was literally demanding it and invoking another sacred aspect of military culture: duty. How often do you demand criticism of your ideas from your direct reports?

4. Collaboration but with Individual Accountability

WELL-FUNCTIONING INNOVATION SYSTEMS need information, input, and significant integration of effort from a diverse array of contributors. People who work in a collaborative culture view seeking help from colleagues as natural, regardless of whether providing such help is within their colleagues' formal job descriptions. They have a sense of collective responsibility.

But too often, collaboration gets confused with consensus. And consensus is poison for rapid decision making and navigating the complex problems associated with transformational innovation. Ultimately, someone has to make a decision and be accountable for it. An accountability culture is one where individuals are expected to make decisions and own the consequences.

There is nothing inherently inconsistent about a culture that is both collaborative and accountability-focused. Committees might review decisions or teams might provide input, but at the end of the day, specific individuals are charged with making critical design choices—deciding which features go and stay, which suppliers to use, which channel strategy makes most sense, which marketing plan is best, and so on. Pixar has created several ways to provide feedback to its movie directors, but as Ed Catmull, its cofounder and president, describes in his book *Creativity, Inc.*, the director chooses which feedback to take and which to ignore and is held accountable for the contents of the movie.

Accountability and collaboration can be complementary, and accountability can drive collaboration. Consider an organization where you personally will be held accountable for specific decisions. There is no hiding. You own the decisions you make, for better or worse. The last thing you would do is shut yourself off from feedback or from enlisting the cooperation and collaboration of people inside and outside the organization who can help you.

A good example of how accountability can drive collaborative behavior is Amazon. In researching a case for Harvard Business School, I learned that when Andy Jassy became head of Amazon's then-fledgling cloud computer business, in 2003, his biggest challenge was figuring out what services to build (hardly an easy task given that cloud services were a completely new space for Amazon—and the world). Jassy immediately sought help from Amazon's technology teams, its business and technical leaders, and external developers. Their feedback about requirements, problems, and needs was critical to the early success of what eventually became Amazon Web Services—today a profitable $12 billion business run by Jassy. For Jassy, collaboration was essential to the success of a program for which he was personally accountable.

Leaders can encourage accountability by publicly holding themselves accountable, even when that creates personal risks. Some years ago, when Paul Stoffels headed R&D at Johnson & Johnson's pharmaceutical division, his group experienced a failure in a major late-stage clinical program. (Disclosure: I have consulted for various divisions of Johnson & Johnson). As Stoffels recounted at a meeting of J&J

managers that I attended, senior leadership and the board demanded to know who was at fault when the program had its setback. "I am accountable," Stoffels replied. "If I let this go beyond me, and I point to people who took the risk to start and manage the program, then we create a risk-averse organization and are worse off. This stops with me." Stoffels, now chief scientific officer for J&J, shares this story frequently with employees throughout the corporation. He finishes with a simple promise: "You take the risk; I will take the blame." And then he urges his audience to cascade this principle down the organization.

5. Flat but Strong Leadership

AN ORGANIZATIONAL CHART gives you a pretty good idea of the structural flatness of a company but reveals little about its cultural flatness—how people behave and interact regardless of official position. In culturally flat organizations, people are given wide latitude to take actions, make decisions, and voice their opinions. Deference is granted on the basis of competence, not title. Culturally flat organizations can typically respond more quickly to rapidly changing circumstances because decision making is decentralized and closer to the sources of relevant information. They tend to generate a richer diversity of ideas than hierarchical ones, because they tap the knowledge, expertise, and perspectives of a broader community of contributors.

Lack of hierarchy, though, does not mean lack of leadership. Paradoxically, flat organizations require stronger leadership than hierarchical ones. Flat organizations often devolve into chaos when leadership fails to set clear strategic priorities and directions. Amazon and Google are very flat organizations in which decision making and accountability are pushed down and employees at all levels enjoy a high degree of autonomy to pursue innovative ideas. Yet both companies have incredibly strong and visionary leaders who communicate goals and articulate key principles about how their respective organizations should operate.

Here again, the balance between flatness and strong leadership requires a deft hand by management. Flatness does not mean that senior leaders distance themselves from operational details or projects. In fact, flatness allows leaders to be closer to the action. The late Sergio Marchionne, who led the resurrection of first Fiat and then Chrysler (and was the architect of their merger) commented to me during an interview for a Harvard Business School case I wrote: "At both companies, I used the same core principles for the turnaround. First, I flattened the organization. I had to reduce the distance between me and the people making decisions. [At one point, Marchionne had 46 direct reports between the two organizations.] If there is a problem, I want to know directly from the person involved, not their boss."

At both Fiat and Chrysler, Marchionne moved his office to the engineering floor so that he could be closer to product planning and development programs. He was famous both for being detail oriented and for pushing decision making down to lower levels in the organization. (With so many direct reports, it was nearly impossible for him not to!)

Getting the balance right between flatness and strong leadership is hard on top management and on employees throughout the organization. For senior leaders, it requires the capacity to articulate compelling visions and strategies (big-picture stuff) while simultaneously being adept and competent with technical and operational issues. Steve Jobs was a great example of a leader with this capacity. He laid out strong visions for Apple while being maniacally focused on technical and design issues. For employees, flatness requires them to develop their own strong leadership capacities and be comfortable with taking action and being accountable for their decisions.

Leading the Journey

All cultural changes are difficult. Organizational cultures are like social contracts specifying the rules of membership. When leaders set out to change the culture of an organization, they are in a sense breaking a social contract. It should not be surprising, then, that many people inside an organization—particularly those thriving under the existing rules—resist.

Leading the journey of building and sustaining an innovative culture is particularly difficult, for three reasons. First, because innovative cultures require a combination of seemingly contradictory behaviors, they risk creating confusion.

Leaders must be very transparent with the organization about the hard realities. These cultures are not all fun and games.

A major project fails. Should we celebrate? Should the leader of that program be held accountable? The answer to these questions depends on the circumstances. Was the failure preventable? Were issues known in advance that could have led to different choices? Were team members transparent? Was there valuable learning from the experience? And so on. Without clarity around these nuances, people can easily get confused and even cynical about leadership's intentions.

Second, while certain behaviors required for innovative cultures are relatively easy to embrace, others will be less palatable for some in the organization. Those who think of innovation as a free-for-all will see discipline as an unnecessary constraint on their creativity; those who take comfort in the anonymity of consensus won't welcome a shift toward personal accountability. Some people will adapt readily to the new rules—a few may even surprise you—but others will not thrive.

Third, because innovative cultures are systems of interdependent behaviors, they cannot be implemented in a piecemeal fashion. Think about how the behaviors complement and reinforce one another. Highly competent people will be more comfortable with decision making and accountability—and their "failures" are likely to yield learning rather than waste. Disciplined experimentation will cost less and yield more useful information—so, again, tolerance for failed experiments becomes prudent rather than shortsighted. Accountability makes it much easier to be flat—and flat organizations create a rapid flow of information, which leads to faster, smarter decision making.

Beyond the usual things that leaders can do to drive cultural change (articulate and communicate values, model target behaviors, and so on), building an innovative culture requires some specific actions. First, leaders must be very transparent with the organization about the harder realities of innovative cultures. These cultures are not all fun and games. Many people will be excited about the prospects of having more freedom to experiment, fail, collaborate, speak up, and make decisions. But they also have to recognize that with these freedoms come some tough responsibilities. It's better to be up-front from the outset than to risk fomenting cynicism later when the rules appear to change midstream.

Second, leaders must recognize that there are no shortcuts in building an innovative culture. Too many leaders think that by breaking the organization into smaller units or creating autonomous "skunk works" they can emulate an innovative start-up culture. This approach rarely works. It confuses scale with culture. Simply breaking a big bureaucratic organization into smaller units does not magically endow them with entrepreneurial spirit. Without strong management efforts to shape values, norms, and behaviors, these offspring units tend to inherit the culture of the parent organization that spawned them. This does not mean that autonomous units or teams can't be used to experiment with a culture or to incubate a new one. They can. But the challenge of building innovative cultures inside these units should not be underestimated. And they will not be for everyone, so you will need to select very carefully who from the parent organization joins them.

Finally, because innovative cultures can be unstable, and tension between the counterbalancing forces can easily be thrown out of whack, leaders need to be vigilant for signs of excess in any area and intervene to restore balance when necessary. Unbridled, a tolerance for failure can encourage slack thinking and excuse making, but too much intolerance for incompetence can create fear of risk taking. Neither of these extremes is helpful. If taken too far, a willingness to experiment can become permission to take poorly conceived risks, and overly strict discipline can squash good but ill-formed ideas. Collaboration taken too far can bog down decision making, but excessive emphasis on individual accountability can lead to a dysfunctional climate in which everyone jealously protects his or her own interests. There is a difference between being candid and just plain nasty. Leaders need to be on the lookout for excessive tendencies, particularly in themselves. If you want your organization to strike the delicate balance required, then you as a leader must demonstrate the ability to strike that balance yourself.

HBR Reprint R1901C

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Instead of viewing salespeople as an expendable cost, store managers should treat them as an asset in their battle with e-tailers.

Photography by STEPHEN WILKES

operations

Retailers Are *Squandering* Their Most Potent Weapons

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As they fight for survival in the era of online shopping,

brick-and-mortar retailers are turning to an age-old strategy: cutting expenditures on workers. In the U.S. department store segment, for example, head count per store has fallen by more than 10% over the past decade, while wages per employee have dropped by 4%. And payroll isn't the only thing being trimmed: Training budgets have been chopped as well. A survey by Axonify, a provider of training software, found that nearly one-third of retail store associates receive no formal training—the highest deficit in any of the industries surveyed. Understaffing stores and undertraining workers was never a good idea, but it's especially bad now, because it takes away the biggest advantage traditional stores have over e-tailers: a live person a customer can talk with face-to-face.

The root of the problem is that most retailers don't know how to determine the optimal amount of staffing and training for individual stores. In this article we'll lay out a method for doing that. When applied systematically, it can add as much as 20% to the revenues of existing stores, we've found. Moreover, if staffing increases in some stores are matched by cuts in others, and vendors cover the cost of product training, the higher sales cost little or nothing to generate, so most of the gross profits on that improvement drops to the bottom line.

The Flaws in Conventional Approaches

It's understandable that brick-and-mortar retailers treat labor as an expendable, variable cost: It's the second-largest expense for most, and stores can cut it quickly just by giving their many part-time associates fewer hours. The trouble with this approach is that it ignores the simple fact that salespeople drive sales. For every dollar a retailer saves on staffing costs, it may be losing several dollars in revenues and gross margin if customers leave a store empty-handed because they can't find a knowledgeable employee to help them. This can create a downward spiral in which fewer associates lead to poor customer service, which causes a further decline in revenues and another round of workforce cuts. And the beat goes on until stores close for good—as 7,795 retail locations in the United States did in 2017, the highest number ever.

Behind this losing labor strategy is business school thinking gone wrong. We teach our students to manage by the numbers. Not a bad idea, except that it leads businesspeople to give too much weight to what's easy to measure and too little to what isn't. For a retailer, the cost of payroll and

Idea in Brief

THE PROBLEM

To compete with online rivals, brick-and-mortar retailers are reducing costs by cutting the number of store employees and money for training. This undermines one of their big advantages over e-tailers: knowledgeable salespeople who can help customers face-to-face.

THE ROOT CAUSE

Payroll is a big variable cost that can be trimmed quickly. And given the high turnover that plagues retailers, spending on training can appear to be a waste.

THE SOLUTION

Determine how many workers and how much training each store needs to optimize revenues and profits, using new methods that involve analyzing historical data, conducting experiments, tracking the training and sales of individuals or teams, and offering incentives.

Cutting staffing costs can lead to lower revenues and gross margin if customers leave a store empty-handed because they can't find a knowledgeable employee to help them.

training is clear-cut. The impact that an adequate number of knowledgeable sales associates has on revenues is much harder to pin down. That imbalance opens the door to delusion: Retailers convince themselves that if they trim payroll by, say, 5% in the last few weeks of a quarter to meet their profit promises to Wall Street, it really won't affect customer service. But over time it does matter.

Making things worse is the framework that retailers use to staff stores. In our experience most treat every store the same and set the labor budget for each at a fixed percentage of forecasted sales for that location. However, adding labor to a store increases revenues at a diminishing rate. There is a staffing level for each store that optimally trades off the revenue gain workers generate with the cost of extra labor. (At the right level, the last dollar spent on labor will produce a dollar of gross margin.) If retailers hit that sweet spot in each location, some stores will end up having a higher ratio of staff to revenues than others.

Which stores tend to benefit from relatively more labor? Those with greater sales potential (as indicated by average basket size and average income in their catchment area) and more competition (as indicated by the number of competing stores—and especially the presence of Walmart—in a five-mile radius). The better service provided by higher staffing is particularly important if a rival has a store a block away that customers can go to if they tire of waiting for an associate to help them in your store.

So the key to escaping the downward spiral is not to give up managing by the numbers. It's to manage by the *right* numbers, which include not just the cost of well-trained store associates but also the *value* they produce.

Optimizing Staffing Levels

Let's look now at how to figure out the right staffing levels in individual stores. It involves three steps:

1 **Use historical data on absenteeism to estimate the effect of staffing.** Retailers may not realize it, but they already have a way to calculate how staffing influences store revenues: crunching the numbers on what happens when associates don't show up because of illness, personal problems, decisions to quit, and so on. For example, if 30 people are scheduled to work in a store and only 27 come in, how do actual sales compare with forecasts? If they meet forecasts, the store is probably overstaffed. If they're down 10%, increasing staffing by 10% would most likely raise revenues by 10%.

Obtaining statistically significant results requires a large sample, of course. We use the most granular data from the longest time period a retailer can conveniently provide it for—typically, one year of weekly sales and payroll data. But keep in mind that other forces—such as advertising and the weather—affect sales. We collect data on those too and with machine learning create a demand model that can predict sales in a store as a function of its staffing level and other drivers. Then, using the analysis from that model, we sort a retailer's stores into three tiers: those that could benefit from more labor, those that could live with less, and those that are appropriately staffed.

2 **Validate the results.** The advantage of the first step is that it requires relatively little effort, but you need a rigorously designed experiment to get more-accurate results, because the rate of absenteeism at individual stores varies somewhat randomly. Some stores might have a lot of absenteeism, and some little or none. Absenteeism also isn't consistent over time. It might be heavier on certain days of the week or have no regular pattern: It could be 1% one day and 10% the next in a given store. So it's helpful to run tests with a sample of stores from the first two tiers. Change the staffing levels in a selection of stores and compare the results with what happens in control stores—similar outlets whose staffing levels are kept constant. If you increase payroll in 25 test stores by 10% and leave it unchanged in 25 control stores, and revenues go up 8% and 1%, respectively, in the two groups, you can conclude that the net impact of the staffing increase is 7%. This lets you account for revenue drivers other than payroll, which in this example must have caused the 1% increase in the control group.

Since the profitability of the additional revenues is obviously important, you should track that, too, calculating the gross margin on the incremental sales minus the cost of the additional payroll needed to generate them.

3 **Optimize staffing chainwide and measure the results.** Assuming the experiment in step two validated the findings of the data analysis you did in step one, it's time to implement the findings chainwide. Add labor to the stores that your analysis showed could benefit from more labor, reduce it in stores that need less, and leave it alone in the rest. Then, again, because your experiment's results are still not as precise as you need them to be, evaluate the impact of the changes to confirm they produced benefits. This new and improved labor plan is not an end point, however, because all the factors that influenced it will change over time. Retailers need to repeat this three-step process, perhaps annually, to adjust as the world around them changes.

As we noted earlier, when staffing increases in some stores are matched by staffing decreases in other stores,

the resulting additional revenues won't cost the retailer anything. Net increases in labor should be made only if they increase profits significantly, however. And though it takes time to reap the benefits of adding workers in many industries, the payoff is immediate in stores that can productively use extra staffing. So retailers need not fear that they'll experience an initial period of lower profitability.

We saw the upside that this three-step approach can produce at one specialty retailer that had more than 800 stores. The sales drivers that we took into account when we worked with the chain included seasonality, various marketing activities, and promotions. Using a statistical software tool called Stata, we created a demand model and applied it to forecast sales as a function of those factors and staffing levels. The data revealed that 300 stores would benefit from adding labor, 300 could live with less, and 200 were appropriately staffed.

We estimated that 100 of the stores in the first tier would achieve a greater than 5% lift in revenues if their staffing increased by 10%. The retailer's leaders decided to conduct an experiment at 16 of those high-potential stores, which confirmed the predicted revenue bump. The retailer then expanded the workforce at 168 stores where it looked as if adding labor would boost sales and profit, and tracked daily revenues in those test stores and 504 control stores over 182 days. The result: The test stores' revenues grew 5.1% while the control group's remained flat. Moreover, the test stores increased their operating profits by almost 6%.

We've seen similar results at other retailers we've worked with. In one case our analysis showed that every extra dollar the chain spent on payroll would generate anywhere from \$4 to \$28 in additional revenue, depending on the store. The retailer's customer surveys revealed why: The two most important drivers of customer satisfaction were the ability to find an associate who could provide assistance and whether that person was knowledgeable—exactly the factors we're addressing here.

At a grocery retailer we did research with, we saw large differences in basket size across stores. The stores with bigger baskets did a better job of matching staffing to traffic during the day, we found.

The optimization approach we've developed can be used by omnichannel retailers too. They need to recognize that associates drive sales not only in stores but also on the web—by, for example, encouraging customers to create online accounts with the company. So when analyzing whether their brick-and-mortar outlets are over- or under-staffed, omnichannel retailers should include such factors in their metrics.

Increasing Sales Associates' Product Knowledge

Rightsizing store labor is only part of the story. The quality of associates matters immensely as well. An incompetent salesperson might be worse than no one at all. But as we've already noted, retailers have an unfortunate tendency to skimp on training.

Associates can benefit from two types of programs: process training on how to perform such tasks as restocking shelves and executing a customer return, and product-knowledge training about the features of the store's offerings, so they can help customers decide which items to buy. Most retailers we know provide very limited amounts of both. The reason: Training is expensive, and they don't know if its benefits justify the cost—especially given the high turnover that plagues many stores.

In this article we focus on product-knowledge training. However, we believe that retailers should also be investing much more in process training. Other researchers—notably our friend and colleague Zeynep Ton of MIT—have found that it's a critical element of a model that produces more-engaged employees, more-satisfied customers, and superior financial performance.

To accurately weigh the costs and benefits of product-knowledge training, retailers need to follow these three steps:

1 **Track sales by associate and incentivize people to want training that will help them sell more.** A sales commission is the simplest way to do this, but even if associates are on straight salary, information about the sales they make is useful feedback for them. Some retailers, especially those with a small sales force, don't pay commissions because they want their associates to work as a team. In these cases the right unit of analysis is the team, not the individual.

2 **Identify sources of product information.** If you're selling branded products, the brands are your allies and may pay for training about their offerings. After all, they care even more than you do about having their products' features described accurately to customers. If they foot the bill, your contribution should be providing on-the-job time for associates' training.

3 **Collect data on training activity and compare it with data on individual employees' sales.** The idea is to determine if associates who train more also sell more. You can measure the hours people spend in training, but it's even better to measure the objective knowledge they've acquired, which you can do with online tests. But again, it's important to consider other factors that affect sales. The experience level of the sales associates is particularly relevant, and so are the shifts they work (Saturday's sales are usually higher than Wednesday's) and how many other associates are working the floor with them.

When we followed this process at Dillard's, a department store chain with nearly 300 locations in the United States, the results were telling. Dillard's partnered with ExpertVoice (formerly Experticity), a firm that provides online, voluntary self-guided training modules for retail associates. Sponsored by the makers of goods that Dillard's sells, the modules taught associates about the features of each brand's products. Associates were paid commissions—giving them an incentive to learn how to sell more—and the brands that developed the training offered associates discounts on their products, which were based on how many modules people had taken. Since each module lasted only about 20 minutes, many associates did more than one.

After assembling data on the training history and sales productivity of the associates over a two-year period and on their years of experience and other influential factors mentioned earlier, we created a model to assess the effect of training. We found that for every online module associates took, their sales rate increased by 1.8%. Since training was voluntary, not all associates engaged in it, but the average hourly sales of people who took it were a whopping 46% higher than those of people who abstained. The associates who did the training were already selling more per hour than those who didn't, and this accounted for about half the 46% difference. However, a comparison of the sales rates before and after the training showed that it accounted for the rest. Given that associates took the modules on their own time, most of the gross profits resulting from the online training fell straight to the bottom line.

For every online training module associates took, their sales rate increased by 1.8%. The average hourly sales of people who did the modules were a whopping 46% higher than those of people who abstained.

To explore what was driving these positive results, we surveyed more than 8,000 sales associates who had taken the training. They reported that its two main benefits were greater confidence in their selling abilities and general product knowledge they could apply when selling other offerings in the same category. In fact, in our results it was clear that the effects of training on a specific brand spilled over to similar brands. Training on New Balance shoes, for example, increased not only their sales but also the sales of all sports shoes.

Finally, we wanted to understand whether the benefits from training were uniform across associates and if not, which people got the most out of the training. Did the "rock stars" become even better, or did it help underperformers improve, serving as a great equalizer? Before the training, we divided associates into four tiers according to their track records, putting top sellers in the first tier and the weakest sellers in the fourth. Our analysis of the results shows that for every online module taken, the top-level associates increased their sales by 1.6% (very close to the 1.8% average for all associates). The benefit for the sales associates in the second tier was 4.2%—more than twice the average. The benefit for those in the third tier was 1.4%. But the training had no effect on the performance of associates at the bottom. Clearly, training can help the best associates and significantly lift the sales of good associates who are eager to improve. And if you track the results, you can also identify employees who need to be moved to different roles within the company or let go.

Providing training in both products and processes is part of a larger strategy we believe in: approaching store employees as an asset to be maximized, not a cost to be minimized. Zeynep Ton has argued convincingly that treating workers well is a win-win. A recent study at Gap showed that one way of doing that—by giving employees more-predictable, consistent work schedules—resulted in a significant revenue increase. And in a recent HBR interview, the head of Walmart U.S. revealed that the megaretailer, criticized for years for the way it has treated its workers, is getting the message and has been improving pay and benefits, as well as training on processes.

THE DECIMATION OF brick-and-mortar retailing is widely expected to continue over the next decade. A recent UBS study predicted that by 2025, another 30,000 to 80,000 U.S. stores will have closed their doors. Many more chains will die. Unless retailers change the way they hire, schedule, and train labor, they risk being among the casualties. The approach we propose isn't complicated, and it yields almost immediate results. It's high time for retailers to abandon old, ineffective ways of operating and recognize that store employees are one of their best weapons in the battle for consumers' business.

HBR Reprint R1901D

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FURTHER READING

LIMITED TRAINING IN RETAIL

"Most Retail Employees Receive No Real Training," Ben Unglesbee, *Retail Dive*, February 21, 2018

STORE LABOR AS AN ASSET

"Shoppers Need a Reason to Go to Your Store—Other Than Buying Stuff," B. Joseph Pine II, HBR.org, December 7, 2017

"Out of Stock? It Might Be Your Employee Payroll—Not Your Supply Chain—That's to Blame," *Knowledge@Wharton*, April 4, 2007

"A Find at Gap: Steady Hours Can Help Workers, and Profits," Noam Scheiber, *New York Times*, March 28, 2018

"The Good Jobs Solution," Zeynep Ton, HBR.org, December 20, 2017

"Research: When Retail Workers Have Stable Schedules, Sales and Productivity Go Up," Joan C. Williams, Saravanan Kesavan, and Lisa McCorkell, HBR.org, March 29, 2018

"The Right Thing to Do," Steve Prokesch, HBR.org, December 7, 2017

TECHNICAL DETAILS ON FORMULAS

"Does Online Training Work in Retail?" Marshall Fisher, Santiago Gallino, and Serguei Netessine, working paper, September 17, 2018

"Setting Retail Staffing Levels: A Methodology Validated with Implementation," Marshall Fisher, Santiago Gallino, and Serguei Netessine, working paper, August 1, 2018

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marketing

What Does Your Corporate Brand Stand For?

It's harder to create a strong identity for an entire company than for a product. This tool kit can help you get there.

Illustrations by MARK ALLEN MILLER

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Idea in Brief

THE PROBLEM

A clear corporate brand identity provides direction and purpose, enhances the standing of products, aids in recruiting and retention, and helps protect a firm's reputation in times of trouble. But many companies struggle to define their brands.

THE TOOL

The corporate brand identity matrix can address that problem by guiding executive teams through a structured set of questions that examine aspects of identity related to the organization's mission, culture, competences, values, and other defining characteristics.

THE APPLICATION

Companies in a range of industries have used the matrix to clarify the relationship between parent and daughter brands; support business development; evaluate targets for acquisition; and reposition their brand image.

Companies are extremely good at defining their product brands. Customers, employees, and other stakeholders know exactly what an iPhone is and means. But organizations are often less sure-footed when it comes to the corporate brand. What does the parent company's name really stand for, and how is it perceived and leveraged in the marketplace and within the company itself?

A clear, unified corporate identity can be critical to competitive strategy, as firms like Apple, Philips, and Unilever understand. It serves as a north star, providing direction and purpose. It can also enhance the image of individual products, help firms recruit and retain employees, and provide protection against reputational damage in times of trouble. Many firms, however, struggle to articulate and communicate their brand.

Consider the €35 billion Volvo Group, which sells a broad portfolio of trucks, buses, construction equipment, and marine and industrial engines. After its new CEO decentralized the organization, turning its truck brands (Volvo Trucks, Mack Trucks, Renault Trucks, and UD Trucks) into separate units in 2016, questions about the parent company's identity became pressing. Because that identity wasn't well defined, people in the group were uncertain about how they should strategically support the "daughter" brands, and people in the new brand units had trouble understanding how the group's mission, values, and capabilities extended to them—and even how to describe their brands' relationships with the Volvo Group in marketing and investor communications.

But using a process we'll detail in this article, Volvo was able to clarify its corporate identity and the roles and functions of its daughter brands. That alignment resulted in greater corporate commitment to the brands, sharper positioning in the marketplace, a stronger sense of belonging to the group, and more-coherent marketing and communications.

The approach we used to help Volvo achieve this turnaround is the product of 10 years of research and engagement with hundreds of senior executives in organizations around the world and across several sectors, including manufacturing, financial services, and nonprofits. At its core is a tool called the *corporate brand identity matrix.* As we'll show, many companies have adapted this tool to their particular circumstances and used it to successfully define a corporate identity, align its elements, and harness its strengths.

INTRODUCING THE MATRIX

The framework we've developed guides an executive team through a structured set of questions about the company. Each question focuses on one element of the organization's identity. There are nine elements in total, and in our matrix we array them in three layers: internally oriented elements on the bottom; externally focused elements on top; and those that are both internal and external in the middle. Let's look at each layer in turn.

Internal elements. Forming the foundation of a corporate brand identity are the firm's mission and vision (which engage and inspire its people), culture (which reveals their work ethic and attitudes), and competences (its distinctive capabilities). These things are rooted in the organization's values and operational realities. Consider Johnson & Johnson's credo, which is carved in stone at the entrance of the company's headquarters and is a constant reminder of what J&J's top priorities are (or should be). It describes J&J's ethos of putting the needs of patients (and their caregivers) first; how it will serve them, by providing high quality at reasonable cost; and a work environment that will be based on dignity, safety, and fairness.

External elements. At the top of the matrix you'll find elements related to how the company wants to be perceived by customers and other external stakeholders: its value

Express Yourself

A visual identity—such as IBM's iconic logo—is often considered the essence of a corporate brand's expression, but to us this is a narrow interpretation. The expression of a brand also includes attitude or tone of voice (think of Geico's gecko), a flagship product (such as Omega's Seamaster watch), taglines (Nike's "Just Do It"), and even signature audio clips (MGM's trademarked lion's roar). All these varied forms of brand expression must harmonize.

The CEO of an international shipping corporation we know has compared a corporate brand to a work of music, emphasizing that its "melody" must be recognizable in all internal and external communications. His favorite song, "My Way," he explained to us, had been performed by Frank Sinatra, the French star Claude François, Elvis Presley, Pavarotti, and even the punk rocker Sid Vicious, and though their voices, styles, and audiences all differed, the melody remained the same. "In our company," the CEO said, "we too have different voices and communicate through multiple channels, telling the world about our brand and what it stands for. The key is for everyone to follow the same melody."

marketing

IN THEORY

The Corporate Brand Identity Matrix

A corporation's identity is made up of nine interrelated components. By examining each one and how it relates to the others, an organization can build a stronger brand.

EXTERNAL	**VALUE PROPOSITION** *What are our key offerings, and how do we want them to appeal to customers and other stakeholders?*	**RELATIONSHIPS** *What should be the nature of our relationships with key customers and other stakeholders?*	**POSITION** *What is our intended position in the market and in the hearts and minds of key customers and other stakeholders?*
EXTERNAL/ INTERNAL	**EXPRESSION** *What is distinctive about the way we communicate and express ourselves and makes it possible to recognize us at a distance?*	**BRAND CORE** *What do we promise, and what are the core values that sum up what our brand stands for?*	**PERSONALITY** *What combination of human characteristics or qualities forms our corporate character?*
INTERNAL	**MISSION AND VISION** *What engages us (mission)? What is our direction and inspiration (vision)?*	**CULTURE** *What are our attitudes, and how do we work and behave?*	**COMPETENCES** *What are we particularly good at, and what makes us better than the competition?*

proposition, outside relationships, and positioning. Nike, for instance, wants to be known for helping customers achieve their personal best, a goal that shapes its product offerings and is captured in its marketing tagline, "Just Do It."

Elements that bridge internal and external aspects. These include the organization's personality, its distinctive ways of communicating, and its "brand core"—what it stands for and the enduring values that underlie its promise to customers. The brand core, at the center of the matrix, is the essence of the company's identity. Patagonia's is summed up in its promise to provide the highest-quality products and to support and inspire environmental stewardship. Audi captures its brand core with the phrase *"Vorsprung durch technik"* ("Progress through technology"). 3M describes its core simply: "Science. Applied to life."

When a corporate identity is coherent, each of the other elements will inform and echo the brand core, resonating with the company's values and what the brand stands for. The brand core, in turn, will shape the other eight elements.

MAPPING THE ELEMENTS

The exercise that follows can reveal whether your corporate brand identity is well integrated and, if it isn't, show where problems and opportunities lie and help you address them. While this process can be tackled by an individual, it's most useful when undertaken by an executive team.

Starting with any one of the nine elements, formulate answers to the related questions in the matrix. For example, if you begin with mission and vision, you'll answer the questions "What engages us?" and "What is our direction and inspiration?" Answer in short phrases, not paragraphs, as Starbucks does when describing its mission: "To inspire and nurture the human spirit—one person, one cup, and one neighborhood at a time." Answer the questions in every box, in any order, without thinking (yet) about how they relate.

When we conduct matrix workshops, we advise participants to follow these five guidelines:

1. Be concise. Think of the short phrases you use in your answers as headings, under which you will later write more-detailed descriptions fleshing out the brand's identity and story.

2. Be straightforward. Avoid jargon and keep your responses uncomplicated. Less is more. IKEA describes its relationships as "Hello!"—reflecting in a single word a down-to-earth attitude in line with its core values.

3. Seek what is characteristic. Capture words or concepts that resonate within your organization—that you'd agree signal "This is us." A real estate company answered the personality question this way: "We are not sitting on a high horse." A newly opened hotel in Oslo described its customer relationships like this: "We treat rock stars as guests; we treat guests as rock stars."

IN PRACTICE

The Nobel Prize Matrix

Nobel Prizes are awarded by four independent institutions—each of which has its own identity—but are managed by the Nobel Foundation. These organizations have a common ground: a brand core of rewarding work that has conferred "the greatest benefit to humankind."

EXTERNAL	**VALUE PROPOSITION** *Celebration and propagation of scientific discovery and cultural achievements*	**RELATIONSHIPS** *Integrity, respect, and dialogue*	**POSITION** *The world's most prestigious award*
EXTERNAL/ INTERNAL	**EXPRESSION** *Symbolic, according to traditions, with a modern, open approach*	**BRAND CORE** *"For the greatest benefit to humankind": discovery, excellence, and engagement for higher ideals*	**PERSONALITY** *Impartial and cosmopolitan, with a passion for science and cultural enlightenment*
INTERNAL	**MISSION AND VISION** *As set forth by Alfred Nobel's will, to award prizes to recognize the "worthiest" people*	**CULTURE** *Objectivity, independence, and collegiality*	**COMPETENCES** *Rigorous processes to evaluate and select laureates*

4. **Stay authentic.** Some elements of your identity may already be firmly rooted in your organization. Be careful to be honest in your expression of them. Some elements may be aspirational, calling for adaptation within the company if they are to ring true.
5. **Seek what is timeless.** A corporate brand's identity should be lasting—like this signature expression of one watchmaker: "You never actually own a Patek Philippe. You merely look after it for the next generation." Forward looking but rooted in the past, it has stood the test of time.

Every company's matrix will be different, but to get a sense of what a final one looks like, consider the matrix above from field research we did with the Nobel organization. The prizewinners are chosen by four independent institutions: the Royal Swedish Academy of Sciences, the Norwegian Nobel Committee, the Karolinska Institutet, and the Swedish Academy. Each is responsible for a different award, and each has its own identity and strategy. But the Nobel Foundation manages the prize funds and has a principal responsibility for safeguarding the standing and reputation of the Nobel Prizes. Our research and analysis helped define the common ground among these entities: the goal of rewarding people who have conferred "the greatest benefit to mankind" (recently retranslated to "humankind"), a phrase from Alfred Nobel's will. That eventually became the brand core and helped clarify the Nobel Prizes' organizational identity.

WALK THE PATHS

After the team has tackled the questions for all nine elements, examine whether the answers fit logically together, reinforcing one another. You'll want to gauge how clearly they align along the matrix's diagonal, vertical, and horizontal axes, which all pass through the brand core at the center. Each axis illuminates a different kind of organizational capability: The diagonal one that begins in the bottom left corner highlights capabilities related to strategy; the diagonal one that begins in the top left corner, competition; the horizontal one, communications; and the vertical one, interaction. If your corporate brand identity is clear, the elements on each axis will harmonize. The stronger the connections along each axis are, the more "stable" the matrix is. One of your team's goals should be to maximize stability.

One way to gauge the strength of connections is to use the answers to the questions in a short presentation describing your corporate brand identity. The notes you've jotted down are, in effect, a rough outline of a script. (For an exercise that helps you craft one, see the sidebar "Does Your Matrix Measure Up?") Ask yourself, Does that outline hang together?

In rare cases a team emerges from the analysis with a perfectly aligned and stable matrix, integrated along and across all four axes. But more often it finds gaps and inconsistencies among the elements of identity. The next job, then, is to examine the weak links and explore how to strengthen them.

For example, if your competences don't support your promise and value proposition on the competition axis, what capabilities do you need to develop? If on the interaction axis your organizational culture doesn't mesh with your corporate values in ways that reinforce external relationships, can HR be helpful in understanding the source of the problem? Creating a fully stable matrix is an ongoing and iterative process. Ultimately, the leadership team needs to converge on a shared narrative about the corporate brand identity, so the stories the company tells will be unified and consistent throughout the organization and beyond.

APPLYING THE MATRIX

Companies have used the matrix to address a range of identity issues, such as clarifying "mother and daughter" brand relationships, retooling the corporate brand to support new businesses, and improving the company's overall image.

Strengthening the parent brand's identity. The Finnish industrial group Cargotec, which is in the cargo-handling business, has three well-known international daughter brands: Hiab (the market leader in on-road solutions), Kalmar (the leader in port and terminal products and services), and MacGregor (the leader in the marine segment). A decade ago the mother brand was eclipsed by these high-profile daughters. To address this, management decided to pursue a "one company" approach, centered on the corporate brand, integrating its service networks and bundling the daughters' logistics solutions for individual customers.

Cargotec's CEO led the initiative to bolster and elevate the corporate brand and align it with its daughters' cultures, values, and promises. First, the firm held 11 workshops in which a team of 110 managers used the matrix to articulate the individual elements of the three daughter brands' identities. Then everyone gathered in a plenary session to develop an aggregated framework for the corporate brand identity.

To confirm the legitimacy of the new identity and get buy-in, Cargotec involved employees, sending out an internal survey (completed by more than 3,000 workers) that tested the validity of the proposed elements of the redefined corporate brand. Did they fit with the vision of aligned corporate and daughter brand identities? The new frameworks from the workshops were shared with everyone on the corporate intranet, soliciting input. An external survey of customers and other stakeholders provided additional input and led to further adjustments to the proposed Cargotec identity.

At the end of the process, Cargotec and its daughter brands had agreed on a shared brand core: the stated promise "Smarter cargo flow for a better everyday" and the values "global presence—local service," "working together," and "sustainable performance." One result of the strategic and rebranding initiatives is that major international customers, such as Maersk Line, are now offered Cargotec-branded solutions integrated with products from the daughters. The company has also strengthened its focus on the corporate brand in its marketing and communications—for instance, by developing a new logo and visual language.

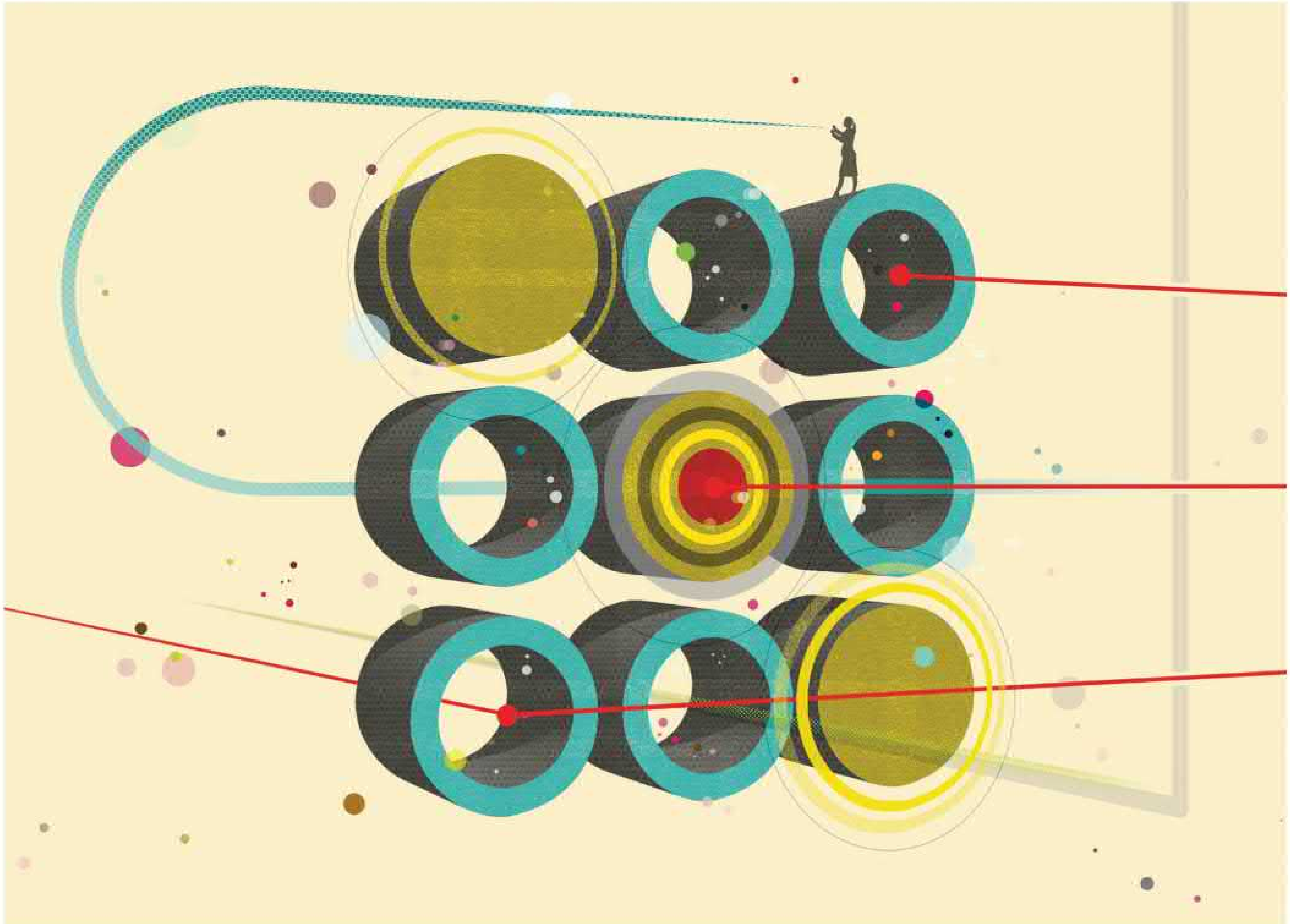
Supporting business development. Bona is a century-old company that has long specialized in products and services for installing and maintaining wood floors. Based in Sweden, it operates in more than 90 countries.

In recent years Bona expanded its offerings to include stone- and tile-cleaning products and developed a new system for renovating vinyl-type floors. These moves opened significant growth markets for the company but also raised a question about its positioning: How should a corporate brand that was known worldwide for wood-floor expertise change to accommodate the new businesses? On the surface the answer seemed simple: In its messaging Bona could just shift from its historical emphasis on wood floors to include other kinds of floors. But the executive team saw an opportunity to formally clarify the corporate brand identity, recommitting to its heritage while embracing a new positioning—inside and out.

Led by marketing executives from headquarters and America, the company conducted a series of workshops in both Europe and the United States that brought together managers from across functions and around the globe. The first task was to reach a common understanding of the company's current identity. Extensive discussion revealed a surprisingly broad variety of perspectives and answers to key questions in the matrix. But through further talks, consensus on those questions was eventually achieved, capturing Bona's corporate brand identity as it stood then.

Next these managers set out to develop an *aspirational* corporate brand identity, considering the firm's new products, technologies, and market opportunities—and in particular, new kinds of customers. The group modified the brand promise to "Bringing out the beauty in floors," aligning it with the newly articulated mission: "Creating beautiful floors to bring happiness to people's lives."

To bring the revamped identity to life inside the company, Bona held dialogues about it with employees, encouraging discussion, and created a welcome program for new staffers that emphasized the values in the revised matrix.



For its outside stakeholders it created new communication programs about lifestyle trends relevant to floor decoration and design, directed at consumers and at Bona's certified craftsmen partners; launched a website redesign; and set up a marketing program introducing its vinyl-floor renovation system. Translating a revised brand narrative into internal and external initiatives takes time, however; at Bona the process began 21 months ago and is still under way, with progress being benchmarked against the new aspirational matrix.

Changing the brand's image. The European company Intrum provides debt collection services to businesses and helps them with invoicing, receivables and debt management, and credit monitoring. By 2014 the company had grown rapidly through acquisitions, and management considered it essential to have a common view across the organization about what Intrum stood for. Its leadership was also concerned that the company had a negative image—and self-image—as a collection agency and wanted to give it a more positive identity as a provider of financial services. So over three years Intrum invited management teams from 24 countries to take part in a program, held at the Stockholm School of Economics, that used our matrix to work out a new, improved identity that would enhance the group's performance. That initiative was led by the senior HR executive Jean-Luc Ferraton.

With input from 200 managers, Intrum's vague tagline ("Boosting Europe") was revised to "Leading the way to a sound economy," which underscored the company's brand promise. A core value challenged by managers as "fluff" was dropped. Intrum's mission was reformulated to be more positive. What does the company aspire to now? "To be trusted and respected by everyone who provides or receives credit. With solutions that generate growth while helping people become debt-free, we build value for individuals, companies and society." The managers' discussion of the new mission inspired Ferraton to comment, "I'm sure that none of us dreamt as kids of working in our line of business. But when I hear how you describe your job, our company, and what we actually do, I am proud to work here."

Intrum tracks the implementation of the new brand identity by measuring employee and customer satisfaction, employee engagement, attitudes about leadership, and the adoption of the corporate brand's core values. Its internal and external surveys reveal an overall improvement of 15% on these measures over the past three years.

The Cargotec, Bona, and Intrum cases illustrate three ways the corporate brand identity matrix can be used. But these are by no means its only applications. The chairman of a private equity firm has used it to gauge the strategic value of candidates for acquisition and investment. The matrix helped the CEO of Falu Rödfärg, a traditional paint company founded in 1764, clarify his firm's brand identity and competitive position by highlighting its distinctive heritage and hard-to-copy craftsmanship. And Trelleborg, a polymer-technology maker, used the matrix to enhance its corporate identity so that acquired firms, which had initially rejected the parent brand name, actively embraced it.

SOMETIMES A SKETCH of a parent firm's identity can be done quickly—and even be helpful. But developing a comprehensive understanding of a corporate brand identity usually takes much longer, involving many sessions and leadership and teams throughout a global organization. The process can happen faster, though, if the company already has strong core values and other essential elements of identity.

Examining and refining your corporate brand is a true leadership task that requires far-reaching input and commitment, passion, and grit. The outcome—a sharpened brand, stronger relationships, and a unified organization—can provide a clear competitive edge.

HBR Reprint R1901E

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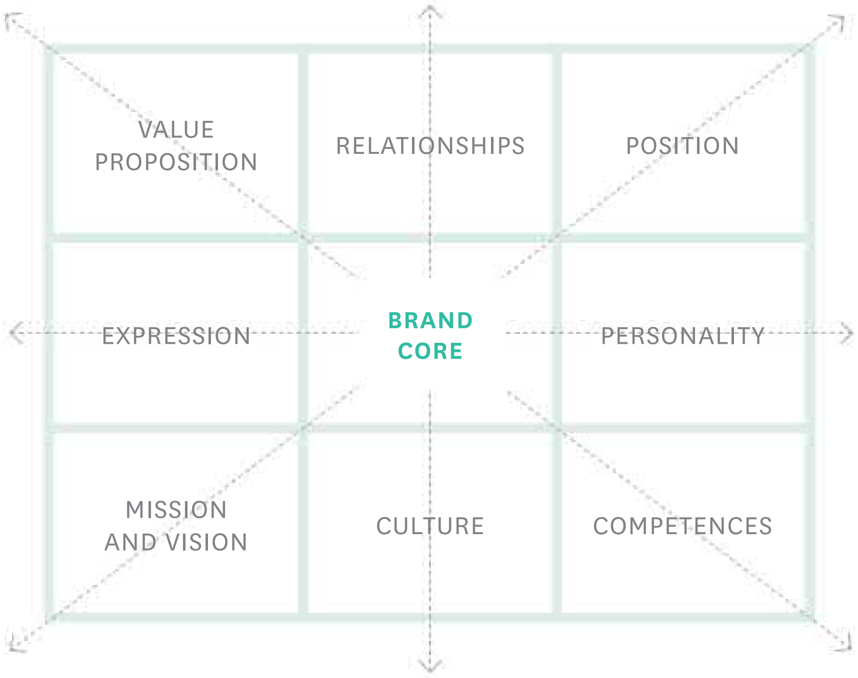
FURTHER READING

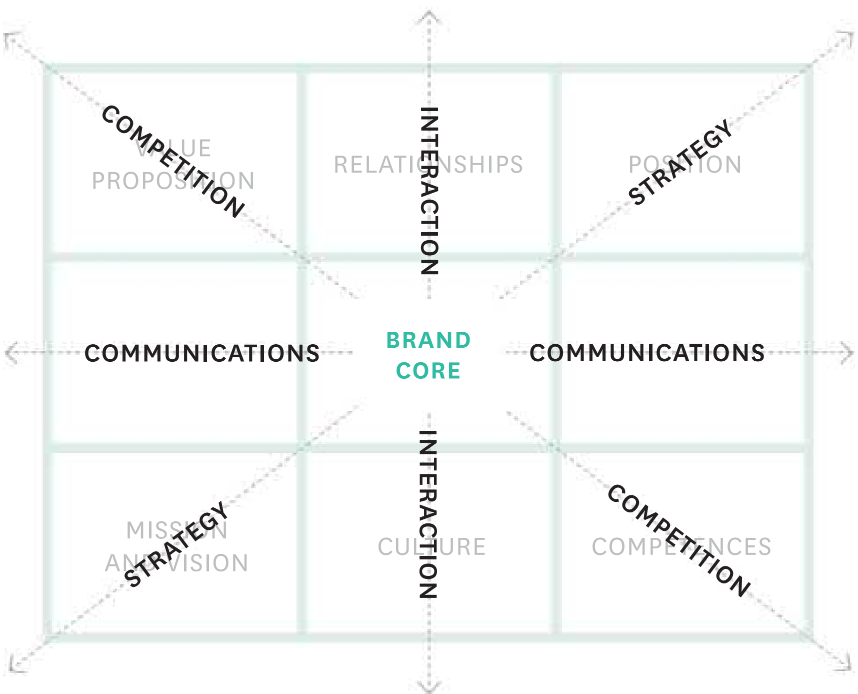
"The Corporate Brand Identity Matrix"
Mats Urde
Journal of Brand Management
August 2013

"The Corporate Brand Identity and Reputation Matrix— The Case of the Nobel Prize"
Mats Urde and Stephen A. Greyser
Journal of Brand Management
January 2016

Does Your Matrix Measure Up?

Use the following exercise to assess the coherence of your answers to the questions in the matrix. As you fill in the blanks, you'll create a narrative about your strategy, your competitive approach, and the basis and nature of your external interactions and communications. With all four paths of the matrix, you'll want to confirm that each element logically follows the one before it, regardless of which direction you're moving in. The clearer and more logical your narrative is, the more stable the matrix is, and the stronger your corporate brand identity.





THE FIRST DIAGONAL PATH FOCUSES ON STRATEGY:

Our mission is ______________________

Our vision is ______________________

What we promise is ______________________

Our core values are ______________________

Our intended position in the market is ______________________

____

Do your mission and vision engage and inspire people in your organization and, ideally, beyond it? Do they translate into a promise that the organization will fulfill? Is that promise manifest in the company's positioning? Finally, does the logic also flow in the other direction: Does your positioning resonate with your promise and values, which align with the corporate mission and vision?

THE SECOND DIAGONAL PATH FOCUSES ON COMPETITION:

Our competences are ______________________

What we promise is ______________________

Our core values are ______________________

Our value proposition is ______________________

____

Do the items in the list above fit well together? Do your current competences allow you to keep your promise and provide a solid basis for competitive and appealing value propositions?

THE VERTICAL PATH FOCUSES ON INTERACTION:

Our culture is ______________________

What we promise is ______________________

Our core values are ______________________

The kinds of relationships we strive for are ______________________

____

This section reveals how well your organizational values and culture resonate with and engage people inside and outside your company. Employees are your most important resource for ensuring the authenticity of the corporate brand. If they don't embrace these elements of your corporate identity, then your outside relationships, whether with customers, partners, or other stakeholders, will suffer.

THE HORIZONTAL PATH FOCUSES ON COMMUNICATION:

Our communication style is ______________________

What we promise is ______________________

Our core values are ______________________

Our corporate personality traits are ______________________

____

The corporate personality or character underpins the company's brand core and is expressed in myriad ways, from product design and the architecture of the headquarters to the corporate logo and marketing taglines. Assess how well that personality comes through in all communications, both internal and external.

innovation

Cracking Frontier Markets

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Former editor, Harvard Business Review

Innovations from underdeveloped economies are launching brand-new industries. Investing in them is the key to creating wealth and fostering inclusive, sustainable development.

Photography by **FRÉDÉRIC LAGRANGE**

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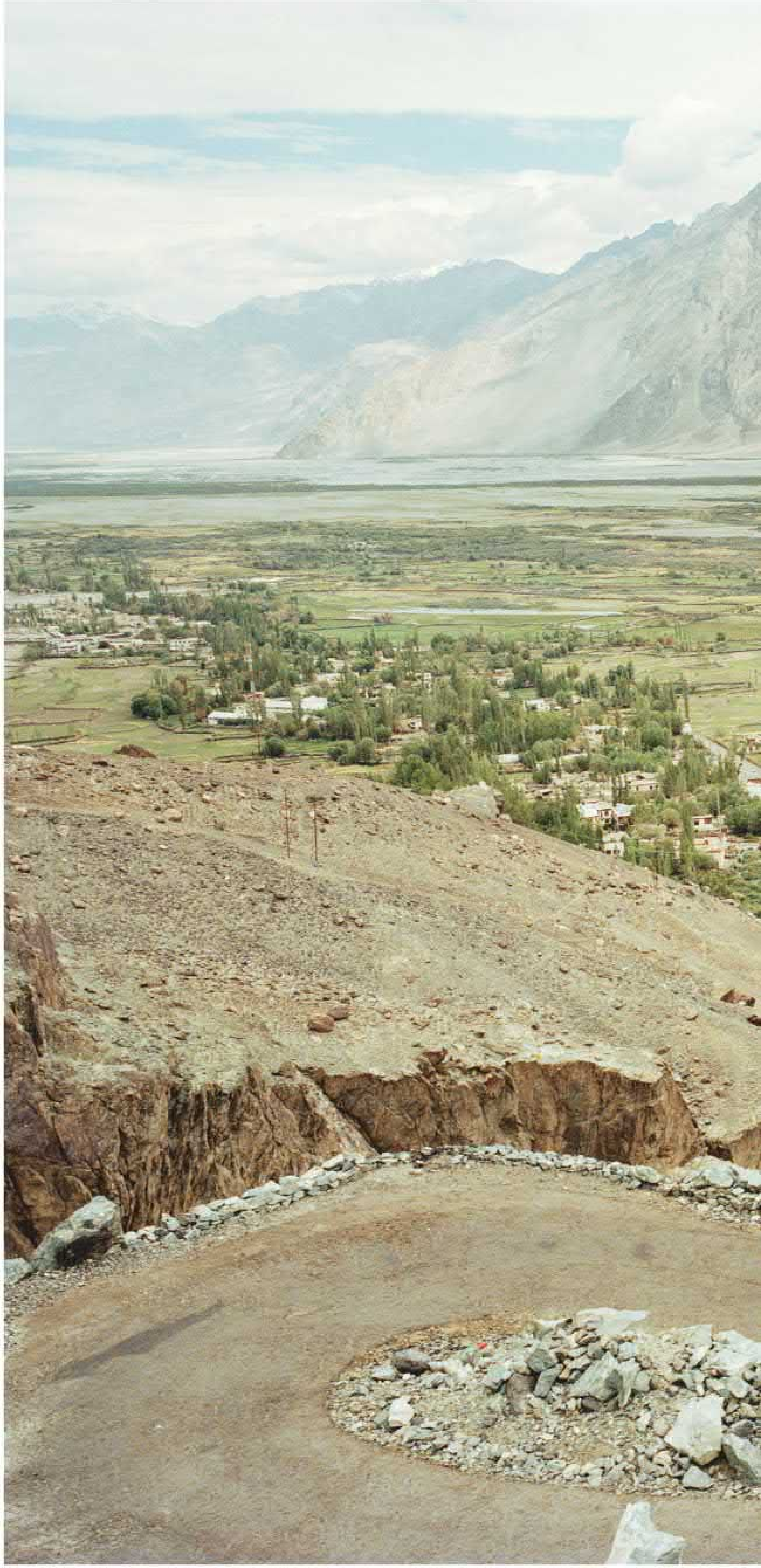


WHEN A MOVIE IS released straight to video, it's usually a bad sign: Early reviews were negative, the quality is dubious, or backers aren't confident it will find an audience. Going straight to video, historically, was a way to save face and move on. But in 1992, when the electronics salesman Kenneth Nnebue shot the straight-to-video Nigerian movie *Living in Bondage,* it was anything but a disaster.

Nnebue had received a shipment of blank VHS cassettes to sell in his store but quickly realized that most Nigerians had no use for them. He then had the idea of putting homemade content on the tapes. He wrote a script, found a producer and a director, and hired actors and actresses. The resulting two-part thriller about a down-and-out businessman who uses witchcraft to revive his fortunes was released on those tapes; Nigeria had no operational cinemas at the time. Made on a $12,000 budget, the film went on to sell hundreds of thousands of copies across Africa, in the process catapulting "Nollywood"—the then-nascent Nigerian movie industry—to eminence.

Barely a blip on anyone's radar 25 years ago, Nollywood today produces about 1,500 movies a year, employs more than a million Nigerians, and is thought to be worth $3.3 billion. In terms of volume, it rivals both Hollywood and Bollywood. This homegrown industry has attracted the

Idea in Brief

THE CONTEXT

Experts often assume that frontier economies are so underdeveloped that they can't support consumer-facing businesses—yet hundreds of companies have proved the conventional wisdom wrong with unexpected fast, sustainable growth.

THE WAY FORWARD

Entrepreneurs who succeed in these markets focus on market-creating innovations: products and services that speak to unmet local needs, create local jobs, and scale up quickly.

THE SOCIAL GAINS

Frontier markets are often plagued by corruption and held back by poor roads, lack of electricity, and so on. The essentials of development can be "pulled in" by market-creating innovators—and over time, governments and financial institutions tend to offer their support.

ABOUT THE ART
These images were shot by Frédéric Lagrange during a two-week trip through Ladakh, a mountainous region in the northeast corner of India.

attention of banks and other financial institutions, some of which now have "film desks" designed to invest in its productions. By some estimates, Nigeria is home to more than 50 film schools. The government has established funds for training filmmakers and financing new movies and is beginning to take piracy and copyright protection more seriously. In 2018 both New York and Toronto hosted Nollywood film festivals, while Netflix bought its first Nollywood film, *Lionheart*.

How could a modest investment by an electronics salesman simply looking to sell VHS cassettes trigger the rise of a multibillion-dollar industry in one of the poorest countries in the world—where fewer than 35% of households had access to electricity and only about 20% had a television set? Was Nollywood just a lucky anomaly?

Hardly. Nollywood is among scores of entities that have realized enormous growth by creating entirely new markets where they might least be expected. With emerging-market giants such as Brazil, Russia, India, and China experiencing slowdowns, investors, entrepreneurs, and multinationals are looking elsewhere. They've been eyeing so-called frontier economies such as Nigeria, Pakistan, and Botswana with great interest—and enormous trepidation. How can one find serious growth opportunities in economies characterized by extreme poverty and a lack of infrastructure and institutions, and with little or no data about market size and customers' willingness to pay?

Missing from the conversation is a foundation of theory to help explain why some efforts succeed while others don't. The reason, in our view, is the power of innovation, and specifically what we call *market-creating innovation*. It not only generates new growth for companies but catalyzes industries that buoy frontier economies and foster inclusive, sustainable development.

THE POWER OF MARKET-CREATING INNOVATION

Contrary to the conventional wisdom that a society must "fix" itself—its infrastructure, courts, legislatures, financial markets, and so on—before innovation and growth can take root, we believe that innovation is the process by which a society develops. Innovation funds our infrastructure, cultivates our institutions, and mitigates corruption. When a country's prosperity stalls out despite a lot of activity within its borders, that country might not have a *development* problem. It might have an *innovation* problem.

Market-creating innovations, in particular, provide a strong economic foundation. They share several characteristics. First, they offer many people *access* to a product or service that was previously unaffordable or otherwise unattainable—if it existed at all. That can have a profound impact on economic development for the region in question as well as on wealth generation for the innovator and entrepreneur.

Second, market-creating innovations leverage business models and value chains that focus on *profitability before growth*. They often do this by borrowing existing technology and inserting it into a different business model. When Kenneth Nnebue inadvertently launched Nollywood, he not only gave millions of Africans access to locally made video content but also inserted existing technology (VHS tapes and recorders) into a business model (straight to video) that many would have scoffed at. Nnebue understood that although straight to video might have been merely a face-saving tactic in Hollywood, it was the right strategy for Nigeria. If he had tried to copy Hollywood and build theaters, his efforts might well have floundered.

Third, market-creating innovations are generated *by and for a local market*—or at the very least, they are designed with a local market in mind. This means that innovators must do the arduous work of understanding the ins and outs of that market and making a product simple and affordable enough for it. They might make use of low wages in the region, but market-creating innovations are not fundamentally about taking advantage of low wages to make a profit. In fact, over time—as an innovation spreads throughout a market—wages increase. This is in contrast to the race-to-the-bottom phenomenon, wherein low wages are deliberately exploited, often for export.

The increase in wages brings us to the fourth characteristic: Market-creating innovations generate *local jobs,* which fuel the local economy. These jobs arise specifically to serve the local market; they cannot easily be outsourced to other countries. They might include, for example, positions in design, advertising, marketing, sales, and distribution. They

often pay better than global jobs, such as low-wage manufacturing work and work sourcing raw materials, which are more readily moved from one region to another. Nigerians may not have manufactured VHS tapes or recorders, but recall that today Nollywood employs more than one million people in the country. And their jobs, unlike many created in Nigeria in decades past, are not at risk of leaving.

Finally, market-creating innovations can be *scaled up.* In fact, because they make a product simple and affordable, bringing it within many people's reach, scaling up is a fundamental part of the process. As Nollywood spread across the continent and to Africans in the diaspora, it created more jobs, supported infrastructure development, and helped Nigeria develop its fledgling institutions. Thus the potential impact of market-creating innovations is enormous for companies and countries alike.

Let's turn now to two more market-creating innovations, exploring how the various characteristics have played out in each.

BUYING INSURANCE—AS EASY AS SIGNING UP FOR A RINGTONE

While working in London's insurance industry in the 1990s and early 2000s, Richard Leftley was puzzled by two tables in the annual statistical analysis published by the global reinsurer Swiss Re. The first showed the number and location of people who had died as a result of natural disasters. The second showed insurance payouts. "There was a total mismatch between the two lists," Leftley recalls. "The human toll was enormous in places like Bangladesh, Pakistan, and India. But those countries were never even on the total payouts rankings." It made no sense, he thought, that the people in the world who most needed insurance were the ones least likely to have it.

Leftley soon saw an opportunity to change that. He spent a vacation volunteering in a poor village in Zambia, where he was placed in the home of a widow and her child. He was struck by just how painful her daily circumstances were. In what Leftley calls the "Chutes and Ladders" of life, the woman's husband had contracted HIV while the family was living in the capital, Lusaka. This started a downward spiral: He became too ill to work, and the family spent all its savings on medicine—both legitimate drugs and "hocus pocus" concoctions that offered nothing more than false hope—and eventually on his funeral. Broken, the widow and her child returned to her childhood village to start over.

Back in London, Leftley was determined to put his professional expertise to use helping people in poor economies. When he came up with an idea for a new business, his colleagues greeted it with skepticism. "They laughed at me," he says. "I was talking about going to Zambia and selling insurance to people who had HIV. People thought I had lost my marbles."

They're not laughing now. Founded in 2002, MicroEnsure has registered more than 56 million people in emerging economies for insurance (adding 18 million in 2017 alone), paying out $30 million in claims and radically innovating the insurance business model. It has introduced new forms of protection for customers, including microhealth, political-violence, crop, and mobile insurance.

Working with established insurers, MicroEnsure designs and operates programs in some of the world's most impoverished communities, many of which are in frontier economies. Creating a market was a matter of trial and error. In its early days, the company tried simply offering low-cost versions of the insurance products available in advanced economies. Leftley says, "I had to print brochures that said things like 'Skydiving and water polo are excluded'"—expensive sports that his target customers would never have contemplated. "It was mad." And it failed woefully: Despite mounting an expensive advertising campaign, MicroEnsure recruited just 10,000 customers.

So Leftley tried again, changing both the product and the way he reached potential customers—offering them free insurance through their mobile phones. People could sign up without paying any premiums; they simply had to buy a certain number of extra minutes. They could keep earning this insurance by renewing the purchase each month. When a customer buys the required minutes, the telecom company pays his or her premium to both MicroEnsure and the partner insurer. Over time customers are offered additional insurance products, such as "double cover" (for a spouse) and "family cover," which cost extra—from three cents to $1 per month, with payment collected through their phones. Revenue from the supplemental plans is split among MicroEnsure, the partner insurer, and the phone company.

Still, the offer of *free* insurance initially failed. Leftley realized that although sign-up required answering just three supposedly simple questions—name, age, and next of kin—even that was too much. "Those three questions caused 80% of people to not complete the process," he says. In many frontier markets, questions about age and next of kin are far from simple; people often don't know or care about their age, and designating next of kin in a complex family structure is difficult. So MicroEnsure had to radically innovate its business model again.

What if the company didn't ask customers *anything?* It would know only a person's mobile phone number. With that one piece of information, it would agree to provide insurance and make payments directly to that phone number; no paperwork, answers, or proof of anything would be required. "This was very freaky for insurance companies," Leftley says. To cover a customer without knowing even his or her age, in an industry built on data, forecasting, and actuarial tables, was a truly radical thought. But with that innovation, he explains, "buying insurance became as simple as signing up for a ringtone." And the free insurance became a powerful marketing tool: Once a customer had been educated about the concept of insurance, it was easier to upsell and cross-market other insurance products.

This is what sets market-creating innovators apart: the ability to identify opportunities where there seem to be *no customers* and to create a business model that upends the way things have always been done.

"We had cracked the code," Leftley says. Indeed, MicroEnsure signed up a million customers the first day it offered a new life-insurance product in India—one that had no age limit or exclusions and required nothing more than a mobile number. And today when insurance companies want access to new customers, they sometimes retain MicroEnsure for consulting and product development services, aware that it has gained significant insight into customer behavior and spending patterns.

MicroEnsure was awarded an FT/IFC Transformational Business Award four times in recent years. It is already profitable in 80% of the markets it has entered. And it has created some 500 jobs, with more added as it moves into new markets. More than 85% of its customers have never bought insurance before.

This is what sets market-creating innovators apart: the ability to identify opportunities where there seem to be *no customers* and to create a business model that upends the way things have always been done.

TO CAPTURE, YOU MUST FIRST CREATE

China is the world's second-largest economy. Its per capita income hovers above $8,000—enough to put it in the World Bank's upper-middle-income category. Over the past 30 years China has lifted close to a billion people out of extreme poverty, in arguably the most impressive economic rise of any nation in history. In 1992, however, China's per capita income was just $366—$49 less than Ghana's. It was in this "1992 China," where destitution was the order of the day, that the entrepreneur Liang Zhaoxian created a market for microwave ovens and went on to build one of the largest appliance companies in the world.

Today that company, Galanz, accounts for almost half the microwaves sold globally. But Liang didn't build that empire by focusing on how to exploit China's low wages to create exports. He concentrated first on creating a market for microwaves in China—an opportunity his competitors couldn't see. In 1992 only 200,000 microwaves were sold in China, most of them in cities. The average price was about 3,000 yuan, or $500—well beyond most citizens' reach. Chinese people typically saw the microwave as a luxury they didn't need—and manufacturers saw them as too poor even to consider such a purchase.

Liang saw something different: people living in apartments with no stoves and, at best, with hot plates that overheated their cramped quarters. He also saw that the last thing anyone living in a small, stuffy apartment wants to do is cook.

So the business model he developed was predicated on creating a market in China. Even though Galanz took advantage of the country's low labor costs, as did many other manufacturers, it would be incorrect to suggest that it was just a low-cost maker of microwaves. From the start it had the typical Chinese customer in mind.

To successfully target that customer, executives had to think in novel ways. In the mid-1990s the capacity utilization rate for most microwave manufacturers in China was about 40%—but Galanz ran its plants 24/7. While other manufacturers advertised on TV, Galanz opted for newspapers, where it introduced "knowledge marketing"—providing information on how to use its products and including details about new models. This strategy drastically reduced its advertising and marketing costs; companies with similar sales spent almost 10 times as much.

An article in *China Daily,* a popular English-language newspaper, credited Galanz with educating many first-time consumers about the appliance. "In 1995, the company popularized the knowledge of the use of microwave ovens nationwide," the piece said. "It started running special features such as 'A Guide to Microwave Oven Usage,' 'A Talk on Microwave Ovens by an Expert' and 'Recipes for Microwave Oven Dishes' in more than 150 newspapers. It spent nearly 1 million yuan [$120,481] in publishing books like 'How to Choose a Good Microwave Oven.'" These efforts created powerful brand awareness and helped Galanz sell its initial microwaves for about 1,500 yuan—half as much as most others on the market.

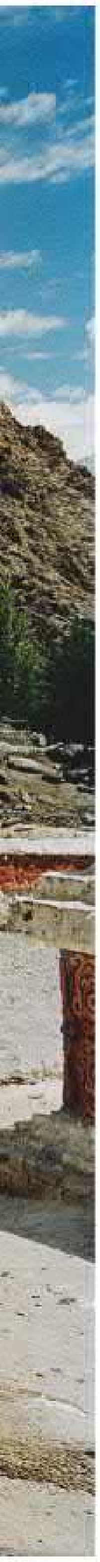
Galanz also developed capabilities that contract manufacturers focused primarily on low-wage exports did not require in China. When the company needed design engineers, salespeople, and marketing experts, it recruited them. When it needed distribution channels, it established them. When it needed offices, factories, and showrooms, it built them.

To serve the Chinese market, Galanz had to create many local jobs. Just two years after the company began production, it had a national sales network of almost 5,000 stores and had begun its global expansion. Today the company has distribution centers in nearly 200 countries and operates the world's largest microwave R&D center. If its strategy had been to exploit low wages for an export market, it probably would not have made those investments.

With Galanz we can also see the development impact of market-creating innovations. For instance, in 1993 the company had just 20 employees; by 2003 it had more than 10,000, and today it employs more than 50,000. And the indirect employment effects are undoubtedly much larger. Yu Xiaochang, the firm's executive vice president, argues that Galanz indirectly employs a million people in areas including components and spare parts, repair, and maintenance. In 1993 the company produced about 400 units a day on a single line; by 2003 it was running 24 lines and producing about 50,000 units a day. A decade later it was producing some 100,000 units a day.

Galanz generated more than $4.5 billion in revenue in 2013 (the last year for which data is available). Liang Zhaoxian is on *Forbes* magazine's list of the world's richest people, with a net worth of $1 billion. His wealth and Galanz's success were built on market-creating innovations in China, for China.

Galanz illustrates clearly what it takes to succeed in an economy that many have written off. First, as discussed, Liang saw the potential for a thriving microwave market in China even though experts deemed the population



Market-creating innovations don't wait for obstacles to be removed by resources that are pushed into an economy. They *pull* in the infrastructure needed to deliver their products.

too poor. Second, the effort wasn't just about making an inexpensive microwave oven; the company developed a business model that involved new forms of advertising, educating Chinese customers, and building retail and distribution capabilities. Third, Galanz did not invent technology or invest in R&D at the outset; it borrowed from other manufacturers. Over time it began to invent technologies, but it did not start out that way.

Fourth, Galanz was patient in terms of growth but impatient for profits; that's why it ran its manufacturing plants at 100% capacity, grew its resources as it created a market in China, and didn't build a global brand until it had comfortably and profitably dominated the local market.

A final point, which cannot be overemphasized: Instead of waiting for the government to invest in the education needed to ensure a steady stream of brilliant engineers, Galanz developed local talent itself, "spar[ing] no expense in training and hiring," as one article put it.

WHAT ABOUT CORRUPTION, INSTITUTIONS, AND INFRASTRUCTURE?

However flawless an organization's strategy for creating markets in frontier economies, very real barriers exist. Corruption, the lack of functioning institutions—what Harvard Business School's Tarun Khanna and Krishna Palepu call *institutional voids*—and dilapidated or nonexistent infrastructure constitute formidable challenges. How should companies think about and address them?

In line with Khanna and Palepu's work, our research suggests that the conventional view of how to overcome such obstacles—by first ensuring the presence of adequate infrastructure and institutions and rooting out corruption to create a fertile ground for innovation—may have the thinking backward. That approach, which we call *pushing,* prioritizes top-down, government- or NGO-led efforts as a necessary precondition. "We can't build factories until we have good roads on which to transport our products," goes the argument. "We can't attract international partners until we have reliable courts." And so on.

In practice, the opposite is true. Market-creating innovations don't wait for such obstacles to be removed by resources that are pushed in. They essentially *pull* in the necessary resources—creating workarounds or funding the infrastructure and institutions needed to deliver their products—even if those efforts are not initially supported by the local government.

Consider education. The fourth United Nations Sustainable Development Goal calls for quality education in all corners of the world, and development organizations have spent billions of dollars to that end. But although many schools have been built in low-income countries, the results have been uneven at best. Literacy and numeracy assessments show that students in low-income countries perform worse, on average, than 95% of students in high-income countries. And when schools don't deliver, mass unemployment and widespread distrust in the value of education ensue. What if we thought about education infrastructure—and infrastructure in general—differently?

The Indian IT firm Tata Consultancy Services adopted a unique approach. Rather than waiting for the government to improve education, it took matters into its own hands, because education is essential to its long-term success. With almost 400,000 employees, TCS is one of India's largest private-sector employers. To meet its clients' needs, it pulled "digital education" into its business model. The company has trained 200,000 employees in thousands of distinct competencies and shows no signs of slowing down. It targets its training, whether for new hires or existing workers, according to market demand and project specifications. That makes the education immediately relevant. Employees understand why they are learning, and TCS understands why it is investing.

Market-creating innovations can be a powerful catalyst for improvements to infrastructure and education: Over time, governments and financial institutions take note of innovators' efforts and begin supporting the new markets. Recall the effects of Nollywood's increasing success: The Nigerian government enacted stronger copyright protections, banks and other financial institutions began catering to the industry, and educational institutions responded. Development organizations also got involved, with the World Bank and other groups directing funds to Nollywood.

All these were "pull" activities; such things rarely happen the other way around.

In fact, infrastructure that is pulled into a market as needed—in dribs and drabs, often consisting of "good enough" solutions at the bottom of the market—might actually be the best, fastest, and most cost-effective strategy in the long run. For example, consider how much cell service has improved in Africa over the past 20 years—progress that resulted almost entirely from market-creating innovations.

Many infrastructure innovations that we now take for granted were the work of innovators who wanted to make and sell their products more efficiently. Take transportation. Scotland still has an active Singer railway station—built by the sewing machine company in 1907 to more efficiently transport products from factory to market. The first major U.S. railroad, the Baltimore and Ohio, was built by a consortium of investors and entrepreneurs for the primary purpose of improving access to markets. Many others followed as private companies issued bonds so that they could build their own railroads. The American engineer, businessman, and politician T. Coleman du Pont was responsible for the DuPont Highway, a 100-mile stretch in Delaware, which he later donated to the state. During the automobile mania in the United States in the early 20th century, Goodyear president Frank Seiberling pledged $300,000 for the building of roads. He did not consult his board, later explaining that this was "a movement upon which [Goodyear] will expect to realize dividends"; people who wanted to sell tires were very happy to build roads. As these types of infrastructure grew, often becoming national security concerns, governments stepped in.

It may seem we are suggesting that governments in frontier economies transfer responsibility for infrastructure development to the private sector. We're not. We are highlighting the importance of *sequencing* and the catalytic role of innovation in infrastructure's development and improvement.

BRINGING MARKET-CREATING INNOVATIONS TO LIFE

How should companies think about creating new markets in frontier economies? We have identified five guiding principles.

1 **Every nation has within it the potential for extraordinary growth.** Innovators must first understand that despite what traditional market analysis might tell them, significant opportunities exist in frontier markets. These do not (and should not) resemble opportunities in developed markets, which differ in their fundamental makeup. Richard Leftley saw that although Africa was home to 16% of the world's population, it accounted for less than 2% of the global insurance market—and those lopsided figures signaled that a vast market could be opened precisely because of the continent's *nonconsumption* of insurance.

2 **Most existing products have the potential to create new growth markets if we make them more affordable.** Narayana Health is a chain of multispecialty hospitals in India, with seven world-class heart centers, 19 primary care facilities, and more than 6,000 beds. Devi Prasad Shetty, who once served as Mother Teresa's personal physician, founded NH in 2000, when India was one of the very poorest countries in the world. He focused on improving the *process* by which care is delivered and as a result democratized access to highly complicated and expensive procedures.

In the United States, open heart surgery can run as much as $150,000—more than most Indians make in a lifetime. Given the cost, almost no one in India who needed heart surgery actually got it. Shetty saw an opportunity to create a new market for cardiac care. Today NH performs open heart surgeries for $1,000 to $2,000, with mortality and infection rates comparable with those in the United States. By increasing the utilization of its most expensive resources—personnel (especially surgeons) and medical equipment—it drastically reduced the cost of operations. It uses tiered pricing, whereby wealthier patients can pay more to get certain services, such as a private room. But the quality of care is standard across all patients.

NH has expanded over the years and now provides quality care in more than 30 additional specialties, including oncology, neurology, orthopedics, and gastroenterology. The organization is worth some $1 billion, serves nearly 2 million Indians a year, directly employs more than 14,000 people, and has trained thousands of workers who are now employed at other facilities in India and abroad. And while major

> **“When you strip away the layers of conventional thinking about what’s *not* possible and start to reimagine what *is,* you can begin to create something really powerful. And that has the potential to change the world.”—Richard Leftley, CEO, MicroEnsure**

hospitals in the United States struggle to make a profit, NH made more than $20 million in fiscal 2017–2018.

3 A market-creating innovation is more than just a product or a service. It is a *system* that often generates new infrastructure, regulations, and jobs for people who make, distribute, market, sell, and service the offering. One of the clearest illustrations of this point is Mo Ibrahim’s Celtel (now part of Bharti Airtel), which democratized telecommunications in Africa and paved the way for an entirely new digital economy that now supports some 4 million jobs. Celtel did not simply create an inexpensive mobile phone; it built a whole system that includes cell towers, installed and maintained by engineers; scratch cards containing prepaid calling minutes, sold in informal shops; advertising, created by artists and graphic designers; contracts, drawn up by lawyers; new projects, financed by bankers; and customer support staff. By 2020 the industry is expected to support more than 4.5 million jobs, provide $20.5 billion in taxes, and add more than $214 billion to African economies.

4 Obstacles can be mitigated through innovation; innovation doesn’t have to wait for their elimination. The essentials of development and prosperity can be pulled in by market-creating innovations, as we have seen. When such innovations take root, infrastructure improves, institutions strengthen, and corruption is tempered. And once a new market becomes profitable to the various stakeholders in the economy, including investors, entrepreneurs, customers, and the government, they are often incentivized to help maintain those resources. The process occurs over time; it is not a single event.

5 When innovations target nonconsumption, scaling them up becomes inexpensive. Once an opportunity is identified and a business model is conceived to make a product or service available to a large population of nonconsumers, achieving scale is relatively cheap. The first step is recognizing an area of nonconsumption. If you try to exploit existing opportunities in frontier markets—many of which are already crowded—and hope to get scale up that way, you may find yourself chasing a mirage. Think about how easily Safaricom, the company behind the innovative mobile-money product M-PESA, grew its operations after creating a market for consumers who were unbanked. In less than a decade more than 20 million Kenyans adopted M-PESA. Contrast that with how much it might have cost Safaricom, and how much longer it would have taken, to exploit the conventional banking system—buildings, branches, accounts, staff, regulations, and so on—to achieve the same scale.

THE KEY TO cracking frontier economies lies not in exploiting existing markets, although that may lead to some success. It lies in creating new markets that serve the billions of nonconsumers unable to find a product or service to help them solve an important problem.

The *process* by which those markets are created, even in the least likely of circumstances, is what investors and entrepreneurs need to understand. Our research suggests that this is the critical missing link. Once we focus more effort on that, immense opportunity will ensue, and inclusive, sustainable development will follow. It is precisely through innovations that generate or connect to new markets that societies can create jobs, pay taxes, and build their infrastructure and institutions. The quality that sets market-creating innovators apart—the ability to identify possibilities where there seem to be *no customers*—is the reason their work represents such enormous opportunity.

“It’s difficult to run a ruler over things you can’t see,” MicroEnsure’s Richard Leftley says. “But when you strip away the layers of conventional thinking about what’s *not* possible and start to reimagine what *is,* you can begin to create something really powerful. And that, in turn, has the potential to change the world.”

HBR Reprint R1901F

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social responsibility

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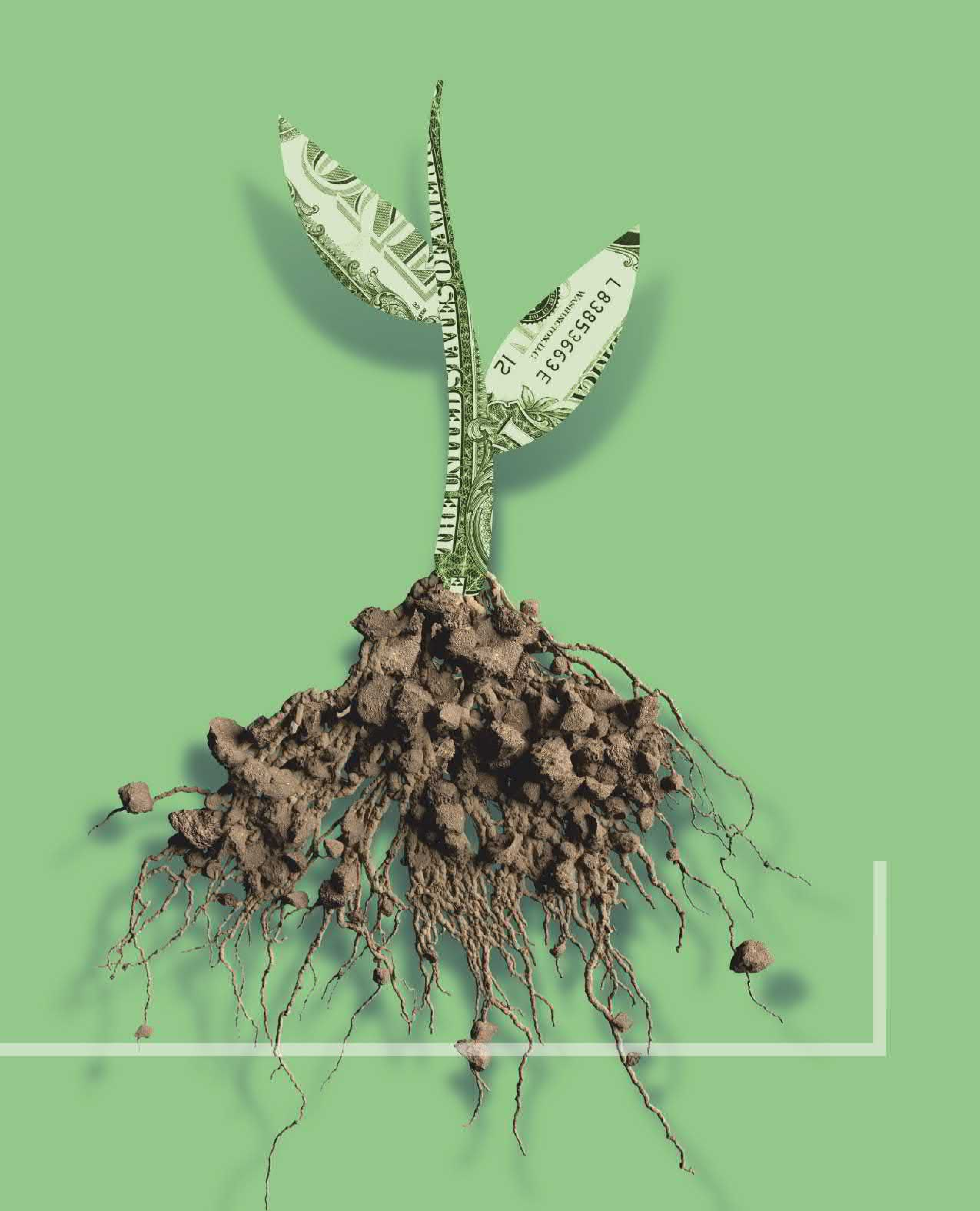
calculating the value of impact investing

An evidence-based way to estimate social and environmental returns

Illustrations by **MATT CHASE**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social responsibility

Idea in Brief

THE PROBLEM

Although the business world has universally accepted tools for estimating a potential investment's financial yields, no analogue exists for evaluating hoped-for social and environmental rewards in dollar terms.

THE SOLUTION

The Rise Fund and the Bridgespan Group have developed a methodology for estimating the financial value of the social or environmental good generated by impact investments.

HOW IT WORKS

The six-step process culminates in a number—called the impact multiple of money, or IMM—that expresses social value as a multiple of the investment.

As concerns about scarcity and inequality become increasingly urgent, many investors are eager to generate both business and social returns—to "do well by doing good." One avenue is impact investing: directing capital to ventures that are expected to yield social and environmental benefits as well as profits. But there's a problem: Although the business world has several universally accepted tools, such as the internal rate of return, for estimating a potential investment's financial yields, no analogue exists for evaluating hoped-for social and environmental rewards in dollar terms. Forecasting gains is too often a matter of guesswork.

A program's impact is not just about the number of people touched; it's about the improvement achieved. Fewer people touched deeply may be worth more than many people hardly affected.

Investors hoping to use a company's track record on social and environmental impact to assess future opportunities will similarly find little useful data to evaluate. The reporting of environmental, social, and governance issues is now standard practice at nearly three-quarters of the world's large and mid-cap companies, but it is usually confined to information about commitments and process and rarely scores actual impact.

Over the past two years the organizations we work for—the Rise Fund, a $2 billion impact-investing fund managed by TPG Growth, and the Bridgespan Group, a global social-impact advisory firm—have attempted to bring the rigor of financial performance measurement to the assessment of social and environmental impact. Through trial and error, and in collaboration with experts who have been working for years in the field, the partnership between Rise and Bridgespan has produced a methodology to estimate—before any money is committed—the financial value of the social and environmental good that is likely to result from each dollar invested. Thus social-impact investors, whether corporations or institutions, can evaluate the projected return on an opportunity. We call our new metric the *impact multiple of money* (IMM).

Calculating an IMM is not a trivial undertaking, so any business that wishes to use it must first determine which products, services, or projects warrant the effort. As an equity investor, Rise does a qualitative assessment of potential investments to filter out deals that are unlikely to pass the IMM hurdle, just as it filters out deals that are not financially promising. Companies with a social purpose and a potentially measurable impact get a green light for IMM evaluation. Rise will invest in a company only if the IMM calculation suggests a minimum social return on investment of $2.50 for every $1 invested. Businesses that adopt this metric can set their own minimum thresholds.

To be clear, numerous assumptions and choices are involved in this process, precluding any claim that our method can provide a definitive number. But we believe that this approach provides valuable guidance regarding which investments will or will not have a significant social impact.

In the following pages we explain how to calculate an IMM during an investment-selection process. The method consists of six steps.

1 | Assess the Relevance and Scale

Investors should begin by considering the relevance and scale of a product, a service, or a project for evaluation. A manufacturer of home appliances may want to consider investing in energy-saving features in its product lines. A health clinic provider may want to assess the potential social benefits of expanding into low-income neighborhoods.

With regard to scale, ask, How many people will the product or service reach, and how deep will its impact be? Rise's experience with calculating the product reach of the educational-technology company EverFi, one of its first impact investments, provides a good example. (The financial and participation data in this article is representative; the actual numbers are confidential.) Rise identified three EverFi programs that already had significant reach: AlcoholEdu, an online course designed to deter alcohol abuse among college students, which was given at more than 400 universities; Haven, which educates college students about dating violence and sexual harassment and is used at some 650 universities; and a financial literacy program that introduces students to credit cards, interest rates, taxes, and insurance, and is offered at more than 6,100 high schools. On the basis of projected annual student enrollments in these programs, Rise estimated that an investment in EverFi could affect 6.1 million students over a five-year period beginning in 2017.

Of course, a program's impact is not just about the number of people touched; it's about the improvement achieved. Fewer people touched deeply may be worth more than many people hardly affected. Consider another Rise investment, Dodla Dairy, which procures and processes fresh milk every day from more than 220,000 smallholder farmers across rural southern India. The number of farmers affected was known, so what Rise needed to assess was how much milk Dodla was likely to buy from them and at what price. With projected sales of 2.6 billion liters of milk over five years, Rise estimated that investments in Dodla would increase farm families' annual incomes by 73%, from $425 to $735. Smallholder farmers with a reliable buyer for their milk spend less time and money marketing and have the predictability and support needed to make long-term investments, increasing milk yields and, therefore, income.

2 Identify Target Social or Environmental Outcomes

The second step in calculating an IMM is identifying the desired social or environmental outcomes and determining whether existing research verifies that they are achievable and measurable. Fortunately, investors can draw on a huge array of social science reports to estimate a company's impact potential. Over the past decade foundations, nonprofits, and some policy makers (including the U.S. Department of Education's Investing in Innovation Fund) have relied heavily on research results to guide funding for social programs. This "what works" movement has spurred the development of an industry around social-outcome measurement, led by organizations such as MDRC, a nonprofit social-policy research organization; the Abdul Latif Jameel Poverty Action Lab (J-PAL), at MIT; and Mathematica Policy Research, based in Princeton, New Jersey.

For AlcoholEdu we drew on a 2010 randomized controlled trial demonstrating that students who had been exposed to the program experienced an 11% reduction in "alcohol-related incidents" such as engaging in risky behaviors, doing or saying embarrassing things, or feeling bad about themselves because of their drinking. That would amount to some 239,350 fewer incidents. According to the National Institutes of Health, alcohol-related deaths account for about 0.015% of all deaths among college students in the United States. Rise estimated that AlcoholEdu would save 36 lives among the approximately 2.2 million students who were projected to engage with the program over a five-year period. (Lives saved, arguably the most important impact of less drinking, are relatively straightforward to monetize. But reducing alcohol abuse clearly has additional benefits for individuals and society.)

For Haven we focused on the prevention of sexual assault. Some 10.3% of undergraduate women and 2.5% of undergraduate men experience sexual assault every year. According to a 2007 study that evaluated the effects of an in-person course on preventing sexual assault that was taught at a college in the northeastern United States, assault declined by about 19% for women and 36% for men among those who took the course.

Applying this data to 2.6 million students expected to experience the Haven program over five years, and assuming that an equal number of college women and men participated, Rise estimated that the program would avert 25,869 incidents of sexual assault among women, and 12,029 incidents among men.

3 Estimate the Economic Value of Those Outcomes to Society

Once they have identified the target outcomes, social-impact investors need to find an "anchor study" that robustly translates those outcomes into economic terms. Cellulant, a regional African provider of a mobile payments platform used by banks, major retailers, telecommunications companies, and governments, is a good example. Cellulant worked with the Nigerian Ministry of Agriculture to redesign a corruption-plagued program that provided seed and fertilizer subsidies. The company developed a cell phone app that allows farmers to pick up their subsidized goods directly from local merchants, reducing the opportunity for graft. The program had been losing 89% of funds to mismanagement and corruption. Cellulant's app now enables delivery of 90% of the intended aid.

Our task was to understand the economic impact on farmers when they received the subsidized seed and fertilizer. We used a reliable study that compared one season's outcomes for farmers enrolled in the subsidy program with those for similar farmers who were not enrolled. The study found that participating farmers earned an additional $99 that season by improving maize yields.

To choose an anchor study we look at several key features. First, its rigor: Does the study systematically evaluate previous research results to derive conclusions about that body of research? Alternatively, does it present findings from a randomized controlled trial—which compares groups with and without a designated intervention? Both types of research are preferable to observational or case studies. Just as important is relevance: Does the study include people living in similar contexts (urban, say, or rural) and in the same income bracket? The closer the match, the better. Recent studies are better than older ones. And studies frequently cited in the research literature deserve extra consideration.

When uncertainty or a lack of reliable research stalls your work, seek guidance from an expert in the field. For example, we sought advice from the Center for Financial Services Innovation, in Chicago, when we could not locate appropriate studies demonstrating the impact of helping people establish a regular savings habit—one of three impact pathways we were examining for Acorns, a fintech company for low- and middle-income individuals. That call led us to research showing that even modest savings among the target group can reduce the use of high-cost payday loans.

To translate the outcomes of AlcoholEdu into dollar terms, we turned to the U.S. Department of Transportation's guidance on valuing the reduction of fatalities or injuries, which uses a measure called the value of a statistical life. According to this anchor study, a fatality is worth $5.4 million. Thus AlcoholEdu could expect to generate social value of at least $194 million by saving 36 lives.

In the case of Haven we found that researchers at the National Institutes of Health have done quite a bit of work on the economic impact of sexual assault. In fact, the NIH has pegged the legal, health, and economic costs of a single assault at $16,657, adjusted for inflation. Rise multiplied the NIH figure by the estimated number of sexual assaults Haven would avert (37,898) to get close to $632 million. Because sexual assault is underreported, Rise believes that Haven's impact may be even greater.

For EverFi's financial literacy program we relied on a 2016 study that looked at a similar program for high school students. It found that program participants had an average of $538 less in consumer debt at the age of 22 than a similar group of students who hadn't been exposed to the program. On average, interest paid on that additional debt came to about $81 over five years. Assuming that 1.3 million students completed the EverFi program over five years and they all saved $81, the economic value of the program would total $105 million.

We estimated that the social impact of the three EverFi programs combined had a five-year economic value of about $931 million: $194 million for AlcoholEdu, $632 million for Haven, and $105 million for financial literacy.

wrestling with moral issues

At times, monetizing social or environmental benefits and costs raises complex questions. For instance:

- *Does an extra dollar of income have greater impact on someone in an emerging market versus someone in a developed market?*
- *When increased income is the target outcome, should we count that impact no matter how much the family was earning before, or only when it earned below a certain threshold?*
- *When saving lives is the desired outcome, can we put a dollar value on each person who benefits?*
- *Health economists' estimates of the value of a statistical life (VSL) vary dramatically by country—but should human lives be valued differently just because of an accident of geography?*

To address such questions, Rise, an impact-investing fund, relies on research to ground decisions in evidence and provide an analytical basis for decision making. For instance, for some IMMs Rise has created a global weighted average value of a life saved rather than using a country-specific metric, to avoid the unintended consequence of tipping investments in favor of developed countries. For other IMM calculations Rise has looked at how impoverished people actually spend incremental dollars in contrast with those in a higher income bracket. Such difficult issues merit ongoing attention from the investment and research communities.

4 Adjust for Risks

Although we have proved to our satisfaction that social science research can be used to monetize social and environmental benefits, we recognize the risk in applying findings from research that is not directly linked to a given investment opportunity. Therefore we adjust the social values derived from applying the anchor study to reflect the quality and relevance of the research. We do this by calculating an "impact realization" index. We assign values to six risk categories and total them to arrive at an impact-probability score on a 100-point scale.

Two of the index components relate to the quality of the anchor study and how directly it is linked to the product or service. Together these account for 60 of the possible 100 points. Anchor studies based on a meta-analysis or a randomized controlled trial merit top scores, whereas observational studies rate lower. AlcoholEdu's study was in the former category; Haven's and the financial literacy program's studies were in the latter.

Establishing the linkage between an anchor study and the desired outcome of a product or service sometimes requires making assumptions, and with more assumptions comes greater risk. For example, the anchor study for EverFi's financial literacy program clearly linked the training to lower student debt, resulting in a maximum rating. But AlcoholEdu and Haven relied on studies with less clear linkages. AlcoholEdu assumes that its training leads to fewer negative alcohol incidents, resulting in lower rates of alcohol-related death. The anchor study for Haven assumes that sexual-assault-prevention training leads to fewer assaults, and thus to fewer of the consequences of those assaults.

The four remaining index components, each of which gets a maximum score of 10, are context (Does the study's social environment correspond to the project's? For instance, are they both urban, or is one rural?), country income group (Are the populations of the study and the project in the same country income bracket as determined by the World Bank?), product or service similarity (How closely do the activities in the study correspond to what the project provides? For example, is the product or service delivered to the same age group in both?), and projected usage (Is there a risk that once a product or service is purchased, it will not be used as intended? Consider that gym memberships have a high drop-off rate.).

In applying the index to EverFi's programs, Rise calculated impact-probability scores for AlcoholEdu, Haven, and the financial literacy program at 85%, 55%, and 75%, respectively. Then it adjusted their estimated monetary impact accordingly, arriving at $164 million for AlcoholEdu, $348 million for Haven, and $77 million for the financial literacy program. The risk-adjusted impact for all three programs totaled $589 million, down from $931 million.

Constructing the index proved challenging. We refined the risk categories and the values assigned to each many times on the basis of feedback from experts in evaluation and measurement. For example, one version emphasized the importance of comparing study results according to geography—say, country or continent. But experts advised that a more accurate comparison would juxtapose studies of similar income groups, regardless of country or living circumstances (urban versus rural).

The impact-realization index attempts to capture the most important elements of risk, but we recognize that it does not capture every threat to impact or all the nuances of risk between anchor studies and a company's product or service. We expect to make refinements as others bring new ideas to the table.

5 | Estimate Terminal Value

In finance, terminal value estimates a business's worth in dollars beyond an explicit forecast period and typically accounts for a large percentage of the total projected value of a business. It is, however, a new concept in social investment, where attention usually focuses on quantifying present or historical impact. To be sure, for many projects (dispensing chlorination tablets, for example) the social impact (safer water) does not long outlive the program. But others (such as installing solar panels) can have a longer-term impact (the panels save energy long after they're installed). In some cases, therefore, it makes sense to estimate a terminal value.

Here's how Rise addresses this question: Starting with the estimated value of impact in the final year of investment, Rise assesses the probability that both output (people reached) and social value will continue undiminished for five more years. Companies with high probabilities on both counts get a discount rate of 5%, meaning that yearly residual value falls by 5%. Those that score low get a discount rate of 25%.

To estimate the terminal value of EverFi's programs for a post-ownership period from 2022 to 2026, Rise assumed that their estimated $159 million in total impact for 2021—the last year of its investment—would also be generated in each of the following five years. That figure was then discounted by 20% per annum compounded, reflecting assumptions about the number of users graduating from the programs and the likely duration of the training's impact. This resulted in a terminal value of $477 million—the five-year residual value Rise could claim—for the three programs. Rise added that amount to the risk-adjusted $589 million in impact realized during the investment holding period to get a total impact of about $1.1 billion.

6 | Calculate Social Return on Every Dollar Spent

The final step in calculating an IMM differs for businesses and investors. Businesses can simply take the estimated value of a social or environmental benefit and divide it by the total investment.

Suppose a company invests $25 million to launch a line of low-cost eyewear for rural residents of developing countries, and its research leads to an estimate of $200 million in social benefits, based on increased customer productivity and income. The company would simply divide $200 million by $25 million. Thus the eyewear generates $8 in social value for every $1 invested. The IMM expresses this as 8X.

Investors, however, must take an extra step to account for their partial ownership of companies they are invested in. Suppose Rise invests $25 million to buy a 30% ownership stake in a company projected to generate $500 million in social value. It can take credit only for the proportion of that value reflected by its stake: $150 million. Rise divides $150 million by its $25 million investment and arrives at $6 in social value for every $1 it invested—an IMM of 6X.

Rise invested $100 million for 50% of EverFi. It adjusted its share of EverFi's projected risk-adjusted $1.1 billion in social value to $534 million and divided that amount by its investment to arrive at an IMM of approximately 5X.

The great advantage of deriving an IMM is that it enables direct comparisons between investment opportunities. It's important, however, to realize that the number is not a precise multiple, like a traded stock's price-earnings multiple. For all the rigor that may lie behind a given IMM calculation, it is possible that some other analyst will rely on a different, equally valid anchor study that leads to a quite different number.

Investors can draw on a trove of social science reports to estimate a company's impact potential.

Treat the IMM as a directional measure instead. And make all the steps in your calculation transparent. When others understand your assumptions, they can help you refine them to generate more-robust numbers. We also recommend using sensitivity analysis to show what happens to an IMM if you change the underlying assumptions. This process will help you identify the key drivers of social value.

SPEAKING AT THE 2017 Global Steering Group for Impact Investment Summit, Sir Ronald Cohen, a leading impact-investing innovator and advocate, contended that the field's rapid growth will reach a tipping point and "spark a chain reaction in impact creation," touching investors, big business, foundations, and social organizations. That could hasten the adoption of impact assessment in day-to-day business processes and operations.

But first businesses and investors must develop better ways to assess social and environmental impact. This is a priority concern not just for impact investors but for all those who want to see more private capital flow toward solving pressing social needs. We've embarked on this experiment to demonstrate the value of putting impact underwriting on the same footing as financial underwriting. It's a model that Rise and Bridgespan seek to share with other investors and businesses, a commitment that led Rise to launch a new entity to foster research and aggregate studies needed to inform impact-investment decisions. In a world where more and more CEOs talk about profit and purpose, the IMM offers a rigorous methodology to advance the art of allocating capital to achieve social benefit.

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We create.
We curate.
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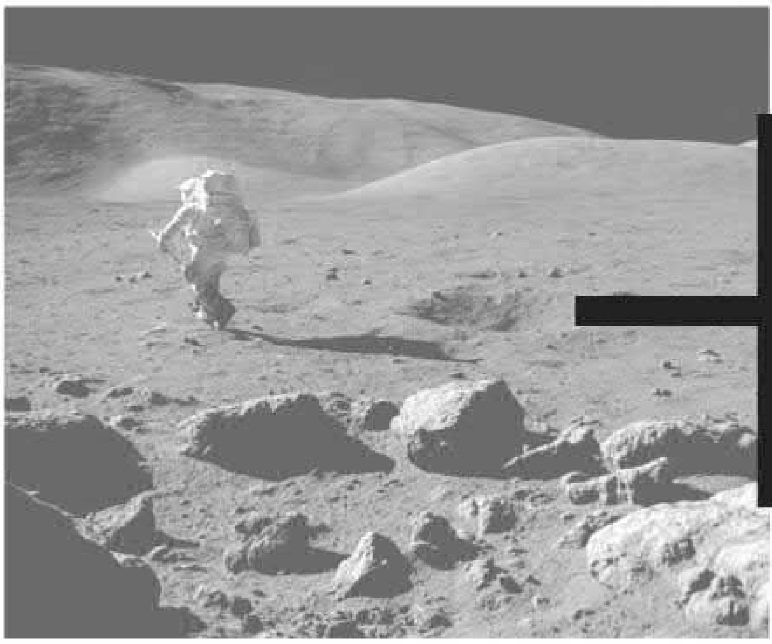
When Your Moon Shots Don't Take Off

How science fiction and other unconventional tools can fire the imagination and lead to breakthrough growth.



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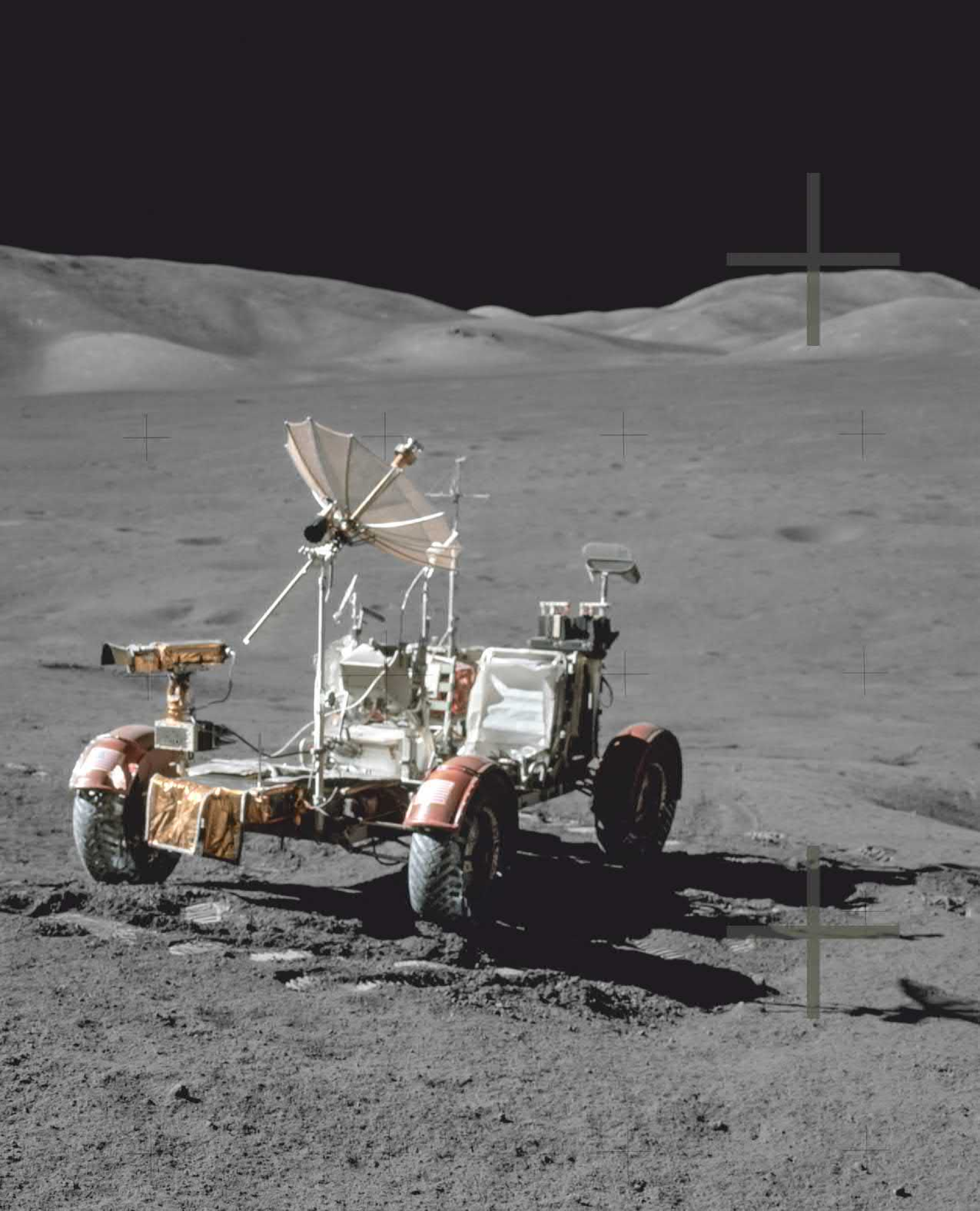

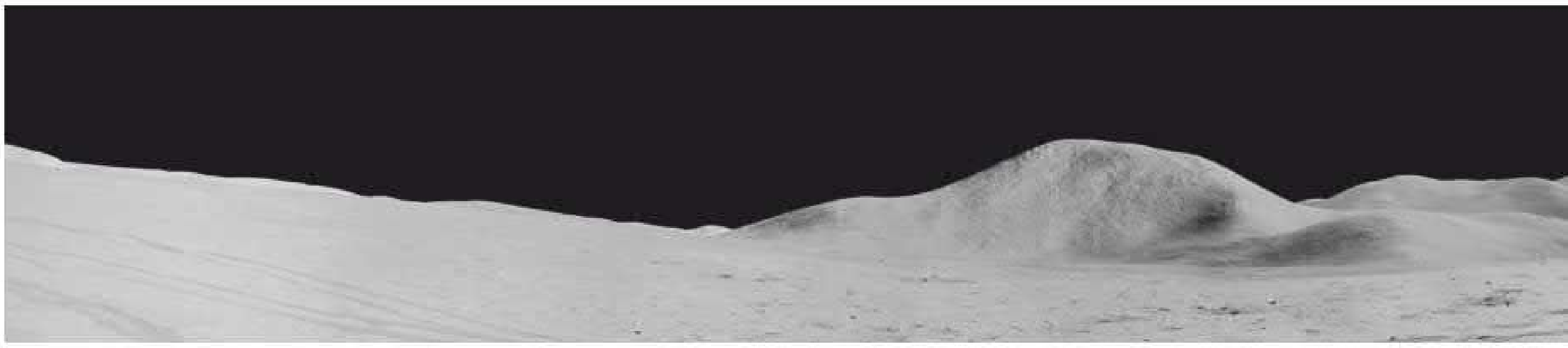

RECENTLY, THE HEAD OF innovation at a major industrial conglomerate set up 10 cross-functional teams and gave them an audacious goal: to completely reimagine their businesses. To encourage fresh ideas and approaches, the company had the teams apply a design-thinking lens to customer research and prototype solutions using lean start-up techniques. The innovation leader expected 10 transformational proposals to come in. What he got instead were suggestions along the lines of adding a connected data stream to an industrial tool. He was dumbfounded. Where were the radical new concepts? Had no one even considered creating a digital platform, or flipping the business model, or reinventing products?

The tendency toward incremental thinking plagues companies of all sorts—in spite of our increasingly sophisticated arsenal of innovation tools. And though incremental innovations do have a place in a growth portfolio, they won't sustain a business over the long term. How can firms come up with something bigger and more meaningful? What's constraining creativity? Why can't every company achieve what Google calls "10x thinking"—ideas that lead to 10-fold improvements rather than the more typical 10% ones?

It's tempting to point to technology, competition, or regulation as the culprit, but those barriers are much more permeable than we imagine. After all, people once thought that a moon landing was impossible, that instant photography was impractical, and that reusable space rockets were simply insane. Then John F. Kennedy inspired a nation, Edwin Land introduced the Polaroid camera, and Elon Musk launched SpaceX.

The real limits to 10x ideas are biases that distort our perceptions and prevent us from seeing possibilities. Cognitive science has started to unpack those biases and the ways that we are "predictably irrational," and in many fields—such as economics, marketing, and strategy—a more behavioral approach has overturned the dominant paradigm. But the behavioral revolution hasn't taken hold in the domain of innovation, where we've yet to systematically adopt the perspectives and tools that help us take big leaps.

When considering new avenues to pursue, most of us fall into cognitive traps that reinforce what researchers call local search, such as *availability bias,* the tendency to substitute available data for representative data; *familiarity bias,* the tendency to overvalue things we already know; and *confirmation bias,* the tendency to think new information proves our existing beliefs. As a result we see only the opportunities related to the status quo, rather than more-valuable opportunities just out of view. The purpose of this article is to share some approaches that are helping companies sidestep those traps. They differ from popular frameworks like lean start-up and agile development, which—while valuable—aren't intended to combat biases that prevent true breakthroughs. In fact, in a recent field experiment at Harvard Business School, researchers found that agile methodologies actually reduced divergent thinking. Ask yourself: Will customer observation, A/B testing, or sprints really lead to the next transistor, iPhone, or SpaceX? Probably not.

The tactics and tools we'll describe all challenge our powerful instinct to avoid risk and choose the easy path. We have either used them to get organizations to see bigger opportunities or come across them in our research on radical innovators. Our list is by no means exhaustive; it represents just some of the ways that creative organizations are reaching for 10x ideas. The intent here is simply to shine a light on how businesses can overcome the forces limiting their possibilities.

Science Fiction

The late novelist Ursula Le Guin once said she wrote science fiction to dislodge her mind—and her reader's mind—"from the lazy, timorous habit of thinking that the way we live now is the only way people can live." Science fiction helps us engage in mental time travel and allows us to dream

about what may be possible. Consider some life-changing breakthroughs science fiction has envisioned or inspired: cell phones (which were based on the officers' communicators in *Star Trek*), credit cards (a feature of a futuristic society in a 19th-century novel by Edward Bellamy), robots (conceived in one of Karel Čapek's early-20th-century plays), self-driving cars (foreseen by Isaac Asimov), earbuds (a fictional invention of Ray Bradbury), and atomic power (imagined by H.G. Wells in 1914). Phil Libin, the former CEO of Evernote—who says the concept for that note-taking software came directly from augmented intelligence in the novel *Dune*—puts it this way: "Science fiction can provide a kind of rigorous optimism....There's no magic. Science fiction just provides the inspiration and then you make a rigorous plan and go for it."

In our consulting work, we have seen science fiction help large, established companies visualize a new future for their businesses. Indeed, at Lowe's, where Kyle was head of innovation, this approach got the executive team members to understand how they could revolutionize retail with augmented reality, robotics, and other technologies.

And that was back in 2012, before Oculus Rift or Pokémon Go even existed. The process simply involved giving customer and technology data to a panel of science fiction writers and asking them to imagine what Lowe's might look like in five to 10 years. We then gathered their ideas, noted where their perspectives converged and diverged, and integrated and refined the stories. Finally, we shared our "speculative fiction" in comic book form with the Lowe's executives.

As a result of that project, Lowe's became the first retailer to deploy fully autonomous robots for customer service and inventory, created some of the first 3-D printing services, and helped place a 3-D printer for making tools on the *International Space Station*. It also created exosuits (external robotic skeletons) for employees unloading trucks and moving goods onto the store floor, and came up with the first augmented-reality phone for planning remodeling work (which initially sold out in four days). Not only has Lowe's achieved financial success (3-D imaging capabilities have boosted its online sales by up to 50%), but in 2018 it was named number one in retail innovation in *Fortune*'s Most Admired Companies ranking and number one in augmented reality on *Fast Company*'s Most Innovative Companies list.

Although technology features heavily in the Lowe's example, innovation isn't about technology. We have used the same process even when no technology was involved—for example, to help Pepsi imagine how to create healthful products and Funko to envision how to expand beyond the collectibles business.

Analogies

One evening, as the Nobel Prize–winning physicist Werner Heisenberg was walking through a park in Copenhagen, a fundamental insight about the nature of energy dawned on him. The path he was on was very dark, save only for occasional circles of light cast by the street lamps. Ahead of him, a man appeared in a pool of light under one lamp and then disappeared into the night until he reemerged in the next pool. Suddenly, it came to Heisenberg: If a man, with so much mass, could seem to disappear and reappear, could an electron, with almost no mass at all, similarly "disappear" until it interacted with something else? According to the author and physicist Carlo Rovelli, that insight into how packets of energy interact—which later became Heisenberg's famous "uncertainty principle"—struck him because he applied an analogy, comparing the man walking between lampposts to an electron.

Analogies have led to breakthroughs in business as well (as Giovanni Gavetti and Jan Rivkin noted in a 2005 HBR

Idea in Brief

THE PROBLEM
Incremental thinking plagues organizations that are really looking for breakthrough innovation.

THE REASON
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A SOLUTION
An assortment of tactics and tools can challenge our powerful instinct to avoid risk and choose the easy path.

article, "How Strategists Really Think: Tapping the Power of Analogy"). Charlie Merrill revolutionized the brokerage industry by applying the analogy of a supermarket, which lets shoppers choose among a host of products and brands. Circuit City, which introduced the superstore approach to electronics retailing in the 1970s, transformed the automotive industry by applying a similar logic (wide selection, low fixed prices with no haggling) to used-car sales, creating CarMax. Though Circuit City went bankrupt after the shift to online retailing, CarMax is now the largest used-car retailer in the world.

Analogies from different domains can sometimes help us make big leaps. The rapid growth of Uber and Airbnb, for example, certainly foreshadowed the emergence of similar "sharing economy" businesses, from recreational vehicles (RVshare.com), to storage (Neighbor), to grocery delivery (Instacart). Another way to jog your thinking is to use an analogy involving how *not* to do something: How would Google never do it? You can also draw on lessons from failures: What approach did a company that missed the mark try?

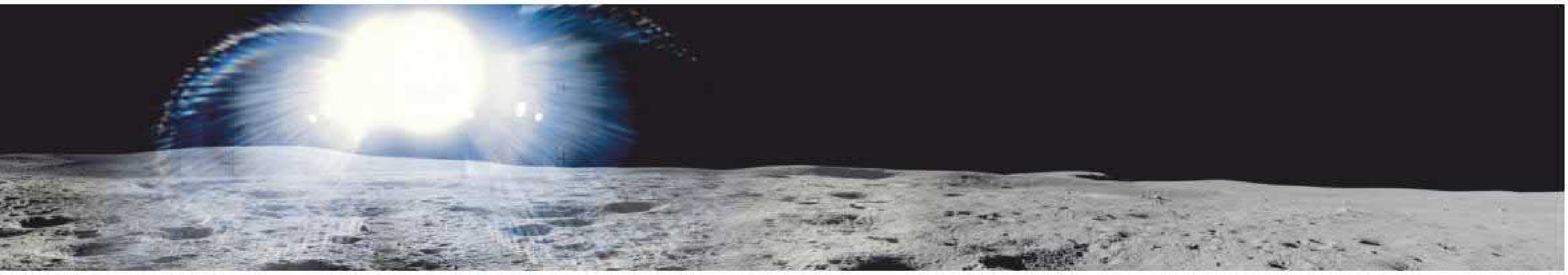
First Principles Logic

Regeneron Pharmaceuticals is renowned for developing new treatments at a small fraction of its competitors' costs. At the core of its innovation process is a "first principles" approach, which questions the status quo by reexamining the foundational principles about something and then redesigns it from the ground up. "We challenge everything—every concept, every scientific principle—and we argue about it amongst ourselves," says George Yancopoulos, Regeneron's president and chief science officer. For example, the firm questioned the dominant paradigm for testing new treatments—trying them first on mice and then on humans, which often leads to high failure rates because mice and people are so different. Yancopoulos and his team sought to reinvent the process by developing a mouse implanted with human genes to more closely simulate human reactions. The modified mouse has enabled Regeneron to develop new drugs for less than 20% of the average $4.3 billion cost of developing new therapies.

SpaceX's reusable rocket emerged from a similar first principles approach. Founder Elon Musk wanted to buy castoff rockets from the Russians but was rebuffed. As Ashlee Vance recounts in *Elon Musk: Tesla, SpaceX, and the Quest for a Fantastic Future,* Musk was furiously crunching numbers in a spreadsheet on a flight back from Russia when he turned to Mike Griffin, a future NASA administrator, and Jim Cantrell, a founding executive at SpaceX, and said, "I think we can build this rocket ourselves." Cantrell recalls, "We're thinking, 'Yeah, you and whose army?'" But after reading up on the fundamentals of propulsion, aerodynamics, thermodynamics, and gas turbines, Musk had broken rockets down to their basic principles in his spreadsheet. With that analysis, his team came up with a way to develop affordable, reusable rockets by using simpler commercial-grade, rather than space-grade, components in a smaller architecture. Today SpaceX has performed more than 60 successful flights and 29 successful landings and saved NASA, its major customer, hundreds of millions of dollars. "In most cases people solve problems by copying what other people do with slight variations," Musk told us. "I operate on the physics approach of analysis by first principles, where you boil things down to the most fundamental truths in a particular area and then you reason up from there."

Exploring Adjacencies Using Exaptation

As you search for breakthroughs, the set of available opportunities is always determined by the elements you begin with—a concept that the biologist Stuart Kauffman described in his theory of "the adjacent possible." But we tend to see only the uses or recombinations of those components that are obvious. The key is to discover completely different uses. In evolutionary biology, this happens in a process called *exaptation*—in which a characteristic that evolved for one purpose is adapted laterally for another use entirely. For example, feathers, whose initial function may have been to provide warmth or attract mates, became the key to flight. Similarly, the complex jawbones of early fish evolved as those creatures became land dwellers, developing into ears. If exaptation works in the biological world without any human agency, then in a world of choice and imagination, its possibilities are infinite.



How can would-be innovators tap the power of exaptation? They can begin by asking why we use something for one purpose and not another. For example, after Van Phillips lost his leg in a waterskiing accident, he studied biomedical engineering to learn how to design prosthetics. He was surprised to discover that prosthetic design had changed little since World War II. When he explored why, he learned that designers focused on aesthetics—making the prosthesis look like a foot. But Phillips asked, Why does it have to look like a foot? What if instead it *acted* like a foot? Drawing ideas from pole vaulting, diving boards, and the feet of cheetahs, he created the Flex-Foot, a prosthetic that looks nothing like a foot but gives wearers far greater freedom of movement. (Most Paralympians use versions of it.) By reexamining the purpose of artificial limbs, Phillips revolutionized the field of prosthetics.

Jeff Bezos applies a similar kind of thinking at Amazon, where he encourages teams to look broadly for new uses of their existing capabilities or new ways to solve the problems of existing customers. "If you're talking about how do you decide what adjacencies to move into, we do it two ways," he says. "We do it customer-needs-backwards, and we do it skills-forward." Amazon Web Services (AWS), one of the company's most profitable businesses, emerged from the skills-forward method. "With AWS we had to recruit a new set of customers, but we had extraordinary skills inside the company on distributed computing," says Bezos. The Kindle was the product of the other method. "With Kindle we had no hardware experience, so we didn't have the skills," says Bezos. "But we had a customer need."

THE POINT OF THESE four innovation approaches is to shake up our thinking and get us past our natural inclination to stick with what we know—to sidestep our cognitive biases. There are certainly other techniques. Amazon, for instance, asks employees to write press releases that introduce an imaginary new product to the market; this encourages them to envision what new offerings could be in a few years. That tactic can even help you with your career. In the month of January, you can write Christmas cards describing what you'll have accomplished by December. There are also tools to help you make progress. For example, you can create an "artifact trail"—a set of small wins leading up to your vision, which you can begin acting on immediately—or apply experimental design processes to see whether you're heading in the right direction.

Whatever frameworks or approaches you use, the goal is to focus on what could be. Too often would-be innovators get bogged down in details of what happens to exist today and tone down ideas to make them sound more palatable. But to achieve 10x thinking we have to break free of incrementalism and face down the fear of failure. You need to dream big.

Consider Einstein. While racing against David Hilbert, a brilliant mathematician, to articulate a general theory of relativity, Einstein struggled to frame up the specific mathematics to describe his theory. He presented his thinking every week, and every week the calculations were different. As Carlo Rovelli recounts it, Hilbert was struck by Einstein's difficulties with the details, noting: "Every boy on the streets of Göttingen understands more about four-dimensional geometry than Einstein." Yet, as Hilbert himself pointed out, Einstein solved the problem first. Why? In Rovelli's opinion: "Because Einstein had a unique capacity to imagine how the world might be constructed, to 'see' it in his mind."

We don't claim to have identified all the ways to generate 10x insights. But we do believe that firms need new approaches to reach such discoveries more effectively, and we've described several of them here. We also believe it's time for a behavioral revolution in the field of innovation. By taking the cognitive sciences seriously, we can become better at breaking the bonds that limit our vision. Why is that so important? Because there is no objective future out there that we will arrive at one day. There is only the future that we create.

HBR Reprint R1901H

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strategy

Why Some Platforms *Thrive*… and Others *Don’t*

Feng Zhu
Professor, Harvard Business School

Marco Iansiti
Professor, Harvard Business School

What Alibaba, Tencent, and Uber teach us about networks that flourish. The five characteristics that make the difference.

Illustrations by **SHOUT**

Idea in Brief

THE CHALLENGE
It's easier for digital platforms to achieve scale than to maintain it.

THE REASON
Five basic network properties shape their scalability, profitability, and ultimately their sustainability.

THE INSIGHT
Analysis of these properties will help entrepreneurs and investors understand platforms' prospects for long-term success.

In 2016, Didi became the world's largest ride-sharing company, reaching 25 million trips a day in China and surpassing the combined daily trips of all other ride-sharing companies across the globe. It had arrived at this milestone by merging in 2015 with its domestic rival, Kuaidi, and pushing Uber out of the Chinese market after a fierce, expensive battle. With its competition gutted, Didi gradually began to improve its margins by reducing subsidies to drivers and passengers.

Video game consoles exhibit weak network effects. The total number of game titles available isn't as important as having a few of the right games. So an entrant with only a small technical advantage can steal significant market share.

But just as the company began to reach profitability, in early 2018, Meituan, a giant player in online-to-offline services such as food delivery, movie ticketing, and travel booking, launched its own ride-hailing business in Shanghai. Meituan didn't charge drivers to use its platform for the first three months and afterward took only 8% of their revenues, while Didi took 20%. Drivers and passengers flocked to the new service. In April, Didi struck back by entering the food delivery market in Wuxi, a city close to Shanghai. What followed was a costly price war, with many meals being sold for next to nothing because of heavy subsidies from both companies. So much for Didi's profitability.

Didi was taking other hits too. In March 2018, Alibaba's mapping unit—Gaode Map, the largest navigation service in China—had started a carpooling business in Chengdu and Wuhan. It didn't charge drivers at all, and in July it began offering passengers the option of ordering from several ride-hailing services. Meanwhile, Ctrip, China's largest online travel service, had announced in April that it had been granted a license to provide car-hailing services across the country.

Why hadn't Didi's immense scale shut down its competition for ride services in China? Why wasn't this a winner-take-all market, as many analysts had predicted? Moreover, why do some platform businesses—such as Alibaba, Facebook, and Airbnb—flourish, while Uber, Didi, and Meituan, among others, hemorrhage cash? What enables digital platforms to fight off competition and grow profits?

To answer those questions, you need to understand the networks a platform is embedded in. The factors affecting the growth and sustainability of platform firms (and digital operating models generally) differ from those of traditional firms. Let's start with the fact that on many digital networks the cost of serving an additional user is negligible, which makes a business inherently easier to scale up. And because much of a network-based firm's operational complexity is outsourced to the service providers on the platform or handled by software, bottlenecks to value creation and growth usually aren't tied to human or organizational factors—another important departure from traditional models. Ultimately, in a digital network business, the employees don't deliver the product or service—they just design and oversee an automated, algorithm-driven operation. Lasting competitive advantage hinges more on the interplay between the platform and the network it orchestrates and less on internal, firm-level factors. In other words, in the digitally connected economy the long-term success of a product or service depends heavily on the health, defensibility, and dominance of the ecosystem in which it operates.

And as Didi is learning, it's often easier for a digital platform to achieve scale than to sustain it. After all, the advantages that allow the platform to expand quickly work for its competitors and anyone else who wants to get into the market. The reason that some platforms thrive while others struggle really lies in their ability to manage five fundamental properties of networks: network effects, clustering, risk of disintermediation, vulnerability to multi-homing, and bridging to multiple networks.

Strength of Network Effects

The importance of network effects is well known. Economists have long understood that digital platforms like Facebook enjoy same-side ("direct") network effects: The more Facebook friends you have in your network, the more likely you are to attract additional friends through your friends' connections. Facebook also leverages cross-side ("indirect") network effects, in which two different groups of participants—users and app developers—attract each other. Uber can similarly mine cross-side effects, because more drivers attract more riders, and vice versa.

Less well acknowledged is the fact that the *strength* of network effects can vary dramatically and can shape both value creation and capture. When network effects are strong, the value provided by a platform continues to rise sharply with the number of participants. For example, as the number of users on Facebook increases, so does the amount and variety of interesting and relevant content. Video game consoles, however, exhibit only weak network effects, as we discovered in a research study. This is because video games are a hit-driven business, and a platform needs relatively few hits to be successful. The total number of game titles available isn't as important in console sales as having a few of the right games. Indeed, even an entrant with only a small technical advantage (and a good business development team) can steal significant market share from incumbents. That explains why in 2001 Microsoft's new Xbox posed such a threat to Sony's then-dominant PlayStation 2, and why each console has gone up and down in market share, alternately taking the lead, over the years.

Even more critically, the strength of network effects can change over time. Windows is a classic example. During the heyday of personal computers in the 1990s, most PC applications were "client based," meaning they actually lived on the computers. Back then, the software's network effects were strong: The value of Windows increased dramatically as the number of developers writing apps for it climbed, topping 6 million at the peak of its popularity. By the late 1990s Windows seemed entrenched as the leading platform. However, as internet-based apps, which worked across different operating systems, took off, the network effects of Windows diminished and barriers to entry fell, allowing Android, Chrome, and iOS operating systems to gain strength on PCs and tablets. Mac shipments had also begun to rise in the mid-2000s, increasing more than five-fold by the end of the decade. This turn of events illustrates that when an incumbent's network effects weaken, so does its market position.

It is possible for firms to design features that strengthen network effects, however. Amazon, for example, has built multiple types of effects into its business model over the years. In the beginning, Amazon's review systems generated same-side effects: As the number of product reviews on the site increased, users became more likely to visit Amazon to read the reviews as well as write them. Later, Amazon's marketplace, which allows third parties to sell products to Amazon users, generated cross-side network effects, in which buyers and third-party sellers attracted each other. Meanwhile, Amazon's recommendation system, which suggests products on the basis of past purchase behavior, amplified the impact of the company's scale by continually learning about consumers' preferences. The more consumers used the site, the more accurate the recommendations Amazon could provide them. While not usually recognized as a network effect per se, learning effects operate a lot like same-side effects and can increase barriers to entry.

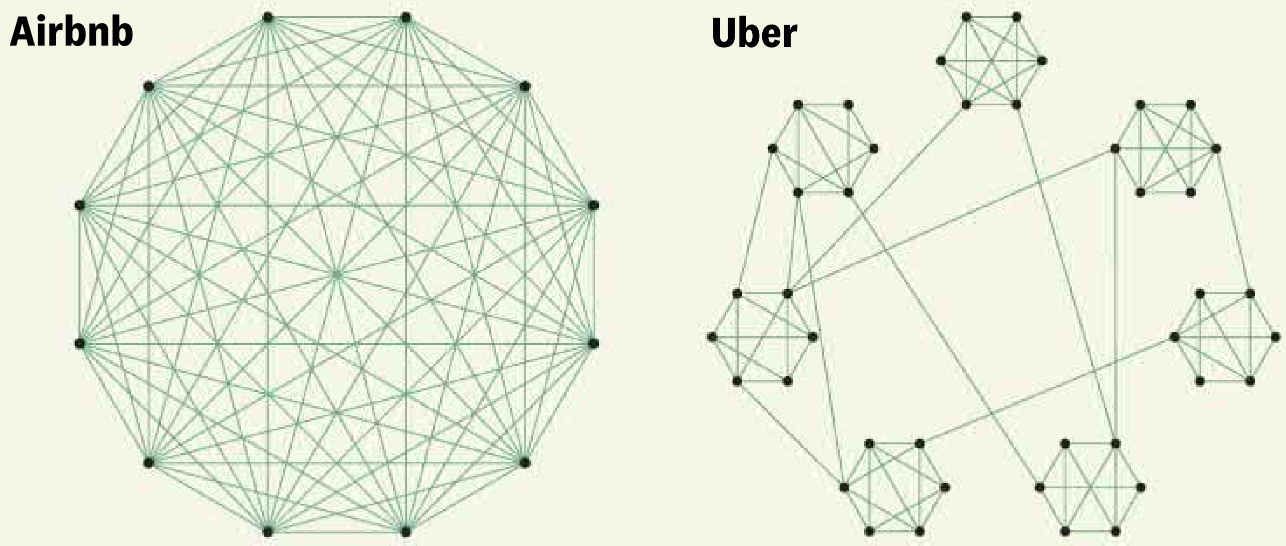
Network Clustering

In a research project with Xinxin Li of the University of Connecticut and Ehsan Valavi, a doctoral student at Harvard Business School, we found that the structure of a network influences a platform business's ability to sustain its scale. The more a network is fragmented into local clusters—and the more isolated those clusters are from one another—the more vulnerable a business is to challenges. Consider Uber. Drivers in Boston care mostly about the number of riders in Boston, and riders in Boston care mostly about drivers in Boston. Except for frequent travelers, no one in Boston cares much about the number of drivers and riders in, say, San Francisco. This makes it easy for another ride-sharing service to reach critical mass in a local market and take off through a differentiated offer such as a lower price. Indeed, in addition to its rival Lyft at the national level, Uber confronts a number of local threats. For example, in New York City, Juno and Via, as well as local taxi companies, are giving it competition. Didi likewise faces a number of strong contenders in multiple cities.

Now let's compare Uber's market with Airbnb's. Travelers don't care much about the number of Airbnb hosts in their home cities; instead, they care about how many there are in the cities they plan to visit. Hence, the network more or less is one large cluster. Any real challenger to Airbnb would have to enter the market on a global scale—building brand awareness around the world to attract critical masses of travelers and hosts. So breaking into Airbnb's market becomes much more costly.

It's possible to strengthen a network by building global clusters on top of local clusters. While Craigslist, a classified ad site, primarily connects users and providers of goods and services in local markets, its housing and job listings attract users from other markets. Facebook's social games (like FarmVille) established new connections among players who were strangers, creating a denser, more global, more integrated network, which is easier to defend from competition. Both Facebook and WeChat, a popular social-networking app in China, have been enhancing their networks by getting popular brands and celebrities—those with national and often international appeal—to create public accounts and post and interact with users.

Which Network Structure Is More Defensible?



Some digital networks are fragmented into local clusters of users. In Uber's network, riders and drivers interact with network members outside their home cities only occasionally. But other digital networks are global; on Airbnb, visitors regularly connect with hosts around the world.

Platforms on global networks are much less vulnerable to challenges, because it's difficult for new rivals to enter a market on a global scale.

Risk of Disintermediation

Disintermediation, wherein network members bypass a hub and connect directly, can be a big problem for any platform that captures value directly from matching or by facilitating transactions. Imagine that you hire a house cleaner from a platform like Homejoy and are satisfied with the service. Would you really go back to Homejoy to hire the same person again? If a user has found the right match, there's little incentive to return to the platform. Additionally, after obtaining enough clients from a platform to fill his or her schedule, the house cleaner won't need that platform anymore. This was exactly the problem that doomed Homejoy, which shut down in 2015, five years after it was founded.

Platforms have used various mechanisms to deter disintermediation, such as creating terms of service that prohibit users from conducting transactions off the platform, and blocking users from exchanging contact information. Airbnb, for example, withholds hosts' exact locations and phone numbers until payments are made. Such strategies aren't always effective, though. Anything that makes a platform more cumbersome to use can make it vulnerable to a competitor offering a streamlined experience.

Some platforms try to avoid disintermediation by enhancing the value of conducting business on them. They may facilitate transactions by providing insurance, payment escrow, or communication tools; resolve disputes; or monitor activities. But those services become less valuable once trust develops among platform users—and the strategies can backfire as the need for the platform decreases. One of us, Feng, and Grace Gu, a doctoral student at Harvard Business School, saw this effect in a study of an online freelance marketplace. As the platform improved its reputation-rating system, trust between clients and freelancers grew stronger, and disintermediation became more frequent, offsetting the revenue gains from better matching.

Some platforms address disintermediation risks by introducing different strategies for capturing value—with varying results. Thumbtack, a marketplace connecting consumers with local service providers such as electricians and guitar teachers, charges for lead generation: Customers post requests on the site, and service providers send them quotes and pay Thumbtack fees if those customers respond. That model captures value before the two sides even agree to work together and has helped save the company from withering like Homejoy. Thumbtack today is handling over $1 billion worth of transactions annually. The downside of its revenue model is that it doesn't prevent the two sides from building a long-term relationship outside the platform after a match.

Alibaba took a different approach with its Taobao e-commerce platform. When Taobao entered the market, in 2003, eBay's EachNet had more than 85% of the Chinese consumer-to-consumer market. However, Taobao didn't charge listing or transaction fees and even set up an instant-messaging service, Wangwang, that allowed buyers to ask questions directly of sellers and haggle with them in real time. In contrast, EachNet charged sellers transaction fees and, because it was concerned about disintermediation, didn't allow direct interactions between buyers and sellers until a sale had been confirmed. Not surprisingly, Taobao quickly took over leadership of the market, and at the end of 2006, eBay shut down its Chinese site. Taobao today continues to strategy

offer its C2C marketplace services free of charge and captures value through advertising revenues and sales of storefront software that helps merchants manage their online businesses.

After estimating that it could lose as much as 90% of its business to disintermediation, the Chinese outsourcing marketplace ZBJ, which launched in 2006 with a model of charging a 20% commission, began looking for new revenue sources. In 2014 it discovered that many new business owners used its site to get help with logo design. Typically, the next job those clients would need done was business and trademark registration, which the platform started to offer. Today ZBJ is the largest provider of trademark registration in China—a service that generates more than $70 million in annual revenue for the firm. The company has also significantly reduced its transaction fees and focused its resources on growing its user base instead of fighting disintermediation. As the experience of ZBJ, which is now valued at more than $1.5 billion, shows, when disintermediation is a threat, providing complementary services can work a lot better than charging transaction fees.

Vulnerability to Multi-Homing

Multi-homing happens when users or service providers (network "nodes") form ties with multiple platforms (or "hubs") at the same time. This generally occurs when the cost of adopting an additional platform is low. In the ride-hailing industry, many drivers and riders use both, say, Lyft and Uber—riders to compare prices and wait times, and drivers to reduce their idle time. Similarly, merchants often work with multiple group-buying sites, and restaurants with multiple food-delivery platforms. And even app developers, whose costs are not trivial, still find it makes sense to develop products for both iOS and Android systems.

When multi-homing is pervasive on each side of a platform, as it is in ride hailing, it becomes very difficult for a platform to generate a profit from its core business. Uber and Lyft are constantly undercutting each other as they compete for riders and drivers.

Incumbent platform owners can reduce multi-homing by locking in one side of the market (or even both sides). To encourage exclusivity, both Uber and Lyft gave bonuses in many markets to people who completed a certain number of trips in a row without rejecting or canceling any or going offline during peak hours. And while rides are in progress, both platforms provide drivers new requests for pickups very close to current passengers' drop-off locations, reducing the drivers' idle time and hence the temptation to use other platforms. Yet because of the inherently low cost of adopting multiple platforms, multi-homing is still rampant in ride sharing.

Attempts to prevent multi-homing can also have unintended side effects. In one research project, Feng and Hui Li of Carnegie Mellon University examined what happened in 2011 when Groupon retooled its deal counter—which tracks the amount of people who have signed up for a specific offer on its site—to show ambiguous ranges, rather than precise numbers. It then became more difficult for LivingSocial to identify and poach the popular merchants on Groupon. As a result, LivingSocial started to source more exclusive deals. While Groupon was able to reduce merchant-side multi-homing, the research found, consumers became more likely to visit both sites, because there were fewer overlapping deals on them, and it cost little to multi-home. That

FURTHER READING

"Managing Our Hub Economy"
Marco Iansiti and
Karim R. Lakhani
HBR, September–October 2017

"Alibaba and the Future of Business"
Ming Zeng
HBR, September–October 2018

finding points to a key challenge platform firms face: Reducing multi-homing on one side of the market may increase multi-homing on the opposite side.

Other approaches seem to work better. Let's look again at the video game industry: Console makers often sign exclusive contracts with game publishers. On the platforms' user side, the high prices of consoles and subscription services, such as Xbox Live and PlayStation Plus, reduce players' incentives to multi-home. Lowering multi-homing on both sides of the market decreased competitive intensity and allowed the console makers to be profitable. Amazon, which provides fulfillment services to third-party sellers, charges them higher fees when their orders are not from Amazon's marketplace, incentivizing them to sell exclusively on it. Amazon Prime, which gives subscribers free two-day shipping on many products, helps the company reduce online shoppers' tendency to multi-home.

Network Bridging

In many situations the best growth strategy for a platform may be to connect different networks to one another. In any platform business, success hinges on acquiring a high number of users and amassing data on their interactions. Such assets can almost invariably be valuable in multiple scenarios and markets. By leveraging them, firms that have succeeded in one industry vertical often diversify into different lines of business and improve their economics. This is a fundamental reason why Amazon and Alibaba have moved into so many markets.

When platform owners connect with multiple networks, they can build important synergies. Alibaba successfully bridged its payment platform, Alipay, with its e-commerce platforms Taobao and Tmall, providing a much-needed service to both buyers and sellers and fostering trust between them. Alibaba has also taken advantage of transaction and user data from Taobao and Tmall to launch new offerings through its financial services arm, Ant Financial—including a credit-rating system for merchants and consumers. And information from that rating system allowed Ant Financial to issue short-term consumer and merchant loans with very low default rates. With those loans, consumers can purchase more products on Alibaba's e-commerce platforms, and Alibaba's merchants can fund more inventory. These networks mutually reinforce one another's market positions, helping each network sustain its scale. Indeed, even after the rival platform Tencent offered a competing digital wallet service, WeChat Pay, through its app WeChat, Alipay remained attractive to consumers and merchants because of its tight bridging with Alibaba and Ant Financial's other services.

As the most successful platforms connect across more and more markets, they're becoming increasingly effective at tying together industries. Just as the Alibaba Group moved from commerce to financial services, Amazon has moved beyond retail to entertainment and consumer electronics. Platforms are thus becoming crucial hubs in the global economy.

WHEN EVALUATING AN opportunity involving a platform, entrepreneurs (and investors) should analyze the basic properties of the networks it will use and consider ways to strengthen network effects. It's also critical to evaluate the feasibility of minimizing multi-homing, building global network structures, and using network bridging to increase scale while mitigating the risk of disintermediation. That exercise will illuminate the key challenges of growing and sustaining the platform and help businesspeople develop more-realistic assessments of the platform's potential to capture value.

As for Didi and Uber, our analysis doesn't hold out much hope. Their networks consist of many highly local clusters. They both face rampant multi-homing, which may worsen as more rivals enter the markets. Network-bridging opportunities—their best hope—so far have had only limited success. They've been able to establish bridges just with other highly competitive businesses, like food delivery and snack vending. (In 2018 Uber struck a deal to place Cargo's snack vending machines in its vehicles, for instance.) And the inevitable rise of self-driving taxis will probably make it challenging for Didi and Uber to sustain their market capitalization. Network properties are trumping platform scale.

HBR Reprint R1901J

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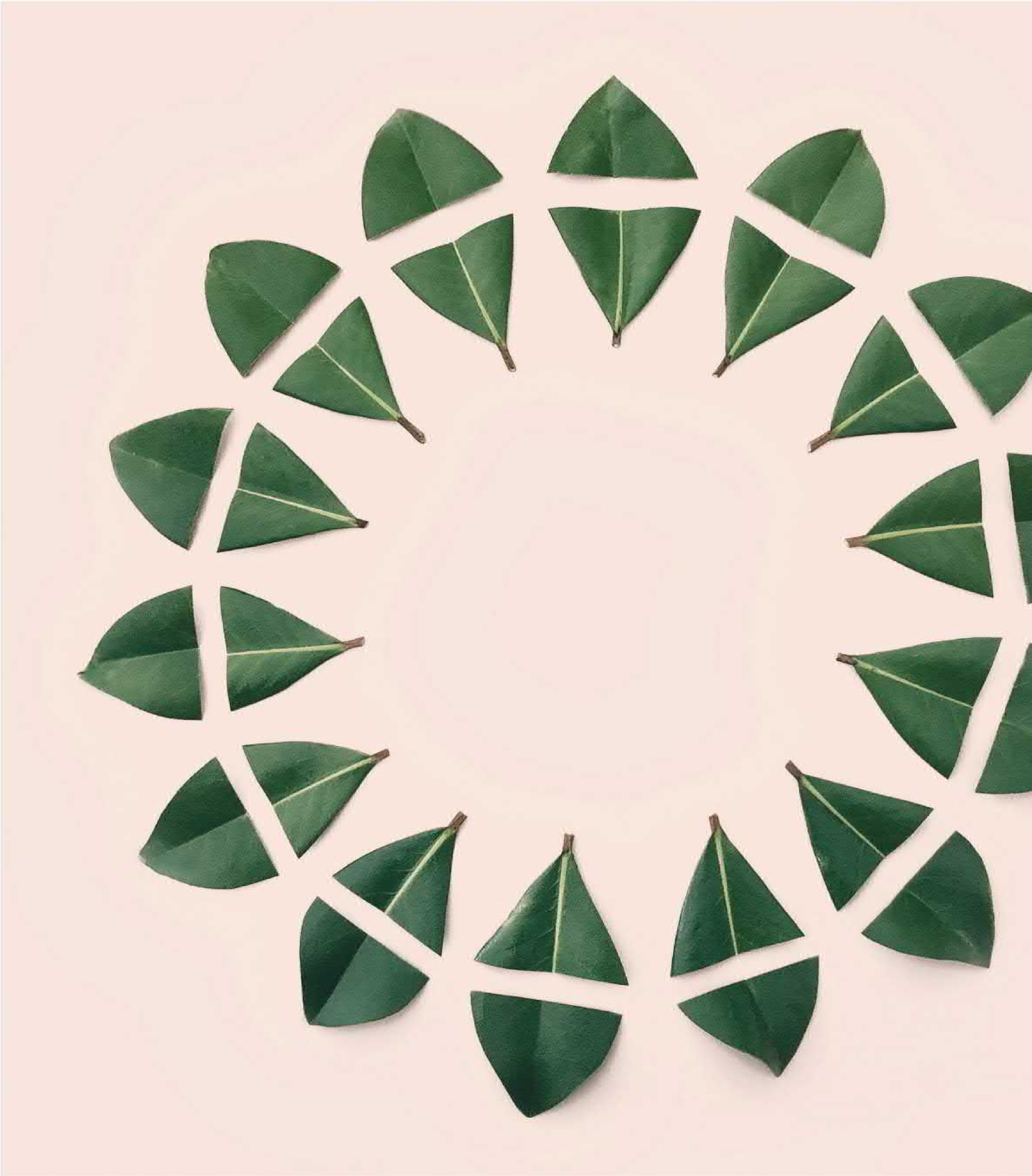


Scott Berinato
HBR senior editor

analytics

Data Science & the Art of Persuasion

Organizations struggle to communicate the insights in all the information they've amassed. Here's why, and how to fix it.

Illustrations by KRISTEN MEYER

analytics

Idea in Brief

THE PROBLEM

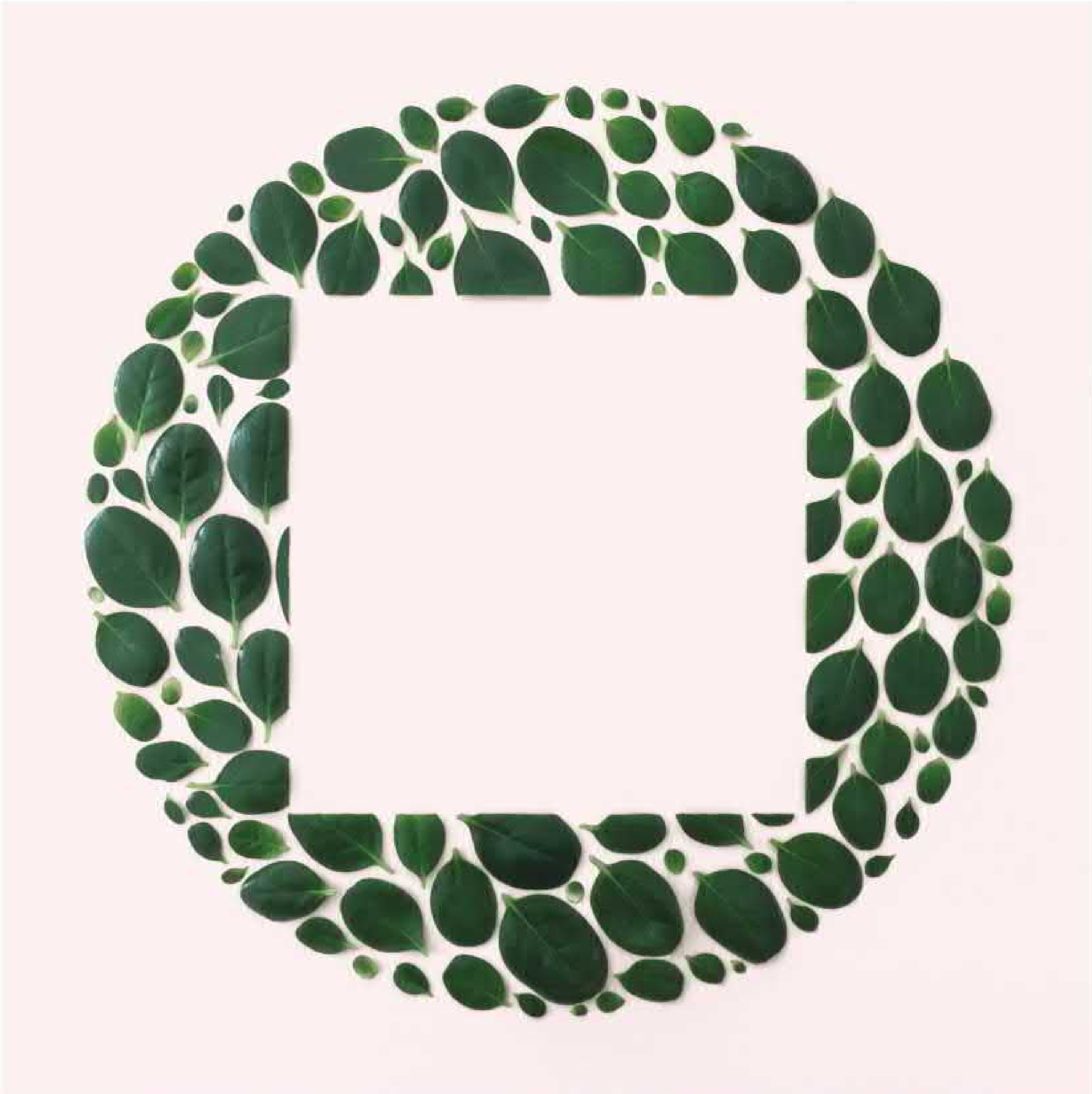
Companies responded to the analytics boom by hiring the best data scientists they could find—but many of them haven't gotten the value they expected from their data science initiatives.

THE ROOT CAUSE

For an analytics project to create value, the team must first ask smart questions, wrangle the relevant data, and uncover insights. Second, it must figure out—and communicate—what those insights mean for the business. The ability to do both is extremely rare—and most data scientists are trained to do the first, not the second.

THE SOLUTION

A good data science team needs six talents: project management, data wrangling, data analysis, subject expertise, design, and storytelling. The right mix will deliver on the promise of a company's analytics.



Data science is growing up fast. Over the past five years companies have invested billions to get the most-talented data scientists to set up shop, amass zettabytes of material, and run it through their deduction machines to find signals in the unfathomable volume of noise. It's working—to a point. Data has begun to change our relationship to fields as varied as language translation, retail, health care, and basketball.

Executives complain about how much money they invest in data science operations that don't provide the guidance they hoped for. They don't see tangible results because the results aren't communicated in their language.

But despite the success stories, many companies aren't getting the value they could from data science. Even well-run operations that generate strong analysis fail to capitalize on their insights. Efforts fall short in the last mile, when it comes time to explain the stuff to decision makers.

In a question on Kaggle's 2017 survey of data scientists, to which more than 7,000 people responded, four of the top seven "barriers faced at work" were related to last-mile issues, not technical ones: "lack of management/financial support," "lack of clear questions to answer," "results not used by decision makers," and "explaining data science to others." Those results are consistent with what the data scientist Hugo Bowne-Anderson found interviewing 35 data scientists for his podcast; as he wrote in a 2018 HBR.org article, "The vast majority of my guests tell [me] that the key skills for data scientists are....the abilities to learn on the fly and to communicate well in order to answer business questions, explaining complex results to nontechnical stakeholders."

In my work lecturing and consulting with large organizations on data visualization (dataviz) and persuasive presentations, I hear both data scientists and executives vent their frustration. Data teams know they're sitting on valuable insights but can't sell them. They say decision makers misunderstand or oversimplify their analysis and expect them to do magic, to provide the right answers to all their questions. Executives, meanwhile, complain about how much money they invest in data science operations that don't provide the guidance they hoped for. They don't see tangible results because the results aren't communicated in their language.

Gaps between business and technology types aren't new, but this divide runs deeper. Consider that 105 years ago, before coding and computers, Willard Brinton began his landmark book *Graphic Methods for Presenting Facts* by describing the last-mile problem: "Time after time it happens that some ignorant or presumptuous member of a committee or a board of directors will upset the carefully-thought-out plan of a man who knows the facts, simply because the man with the facts cannot present his facts readily enough to overcome the opposition....As the cathedral is to its foundation so is an effective presentation of facts to the data."

How could this song remain the same for more than a century? Like anything else this deeply rooted, the last-mile problem's origins are multiple. For one, the tools used to do the science include visualization functionality. This encourages the notion that it's the responsibility of the data person to be the communicator. The default output of these tools can't match well-conceived, fully designed dataviz; their visualization often isn't as well developed as their data manipulation, and the people using the tools often don't want to do the communicating. Many data scientists have told me they're wary of visualization because it can dumb down their work and spur executives to draw conclusions that belie the nuance and uncertainty inherent in any scientific analysis. But in the rush to grab in-demand data scientists, organizations have been hiring the most technically oriented people they can find, ignoring their ability or desire (or lack thereof) to communicate with a lay audience.

That would be fine if those organizations also hired other people to close the gap—but they don't. They still expect data scientists to wrangle data, analyze it in the context of knowing the business and its strategy, make charts, and present them to a lay audience. That's unreasonable. That's unicorn stuff.

To begin solving the last-mile problem, companies must stop looking for unicorns and rethink what kind of talent makes up a data science operation. This article proposes a way for those that aren't getting the most out of their operations to free data scientists from unreasonable expectations and introduce new types of workers to the mix. It relies on cross-disciplinary teams composed of members with varying talents who work in close proximity. Empathy, developed through exposure to others' work, facilitates collaboration among the types of talent. Work is no longer passed between groups; it's shared among them.

A team approach—hardly new, but newly applied—can get data science operations over the last mile, delivering the value they've created for the organization.

Why Are Things Like This?

In the early 20th century, pioneers of modern management ran sophisticated operations for turning data into decisions through visual communication, and they did it with teams. It was a cross-disciplinary effort that included gang punch operators, card sorters, managers, and draftsmen (they were nearly always men). Examples of the results of this

How Communication Fails

I've learned in my work that most leaders recognize the value data science can deliver, and few are satisfied with how it's being delivered. Some data scientists complain that bosses don't understand what they do and underutilize them. Some managers complain that the scientists can't make their work intelligible to a lay audience.

In general, the stories I hear follow one of these scenarios. See if you recognize any of them.

The Statistician's Curse

A data scientist with vanguard algorithms and great data develops a suite of insights and presents them to decision makers in great detail. She believes that her analysis is objective and unassailable. Her charts are "click and viz" with some text added to the slides—in her view, design isn't something that serious statisticians spend time on. The language she uses in her presentation is unfamiliar to her listeners, who become confused and frustrated. Her analysis is dead-on, but her recommendation is not adopted.

The Factory and the Foreman

A business stakeholder wants to push through a pet project but has no data to back up his hypothesis. He asks the data science team to produce the analysis and charts for his presentation. The team knows that his hypothesis is ill formed, and it offers helpful ideas about a better way to approach the analysis, but he wants only charts and speaking notes. One of two things will happen: His meeting will be upended when someone asks about the data analysis and he can't provide answers, or his project will go through and then fail because the analysis was unsound.

The Convenient Truth

A top-notch information designer is inspired by some analysis from company data scientists and offers to help them create a beautiful presentation for the board, with on-brand colors and typography and engaging, easily accessible stories. But the scientists get nervous when the executives start to extract wrong ideas from the analysis. The clear, simple charts make certain relationships look like direct cause and effect when they're not, and they remove any uncertainty that's inherent in the analysis. The scientists are in a quandary: Finally, top decision makers are excited about their work, but what they're excited about isn't a good representation of it.

collaboration are legion in Brinton's book. Railroad companies and large manufacturers were especially adept, learning the most efficient routes to send materials through factories, achieving targets for regional sales performances, and even optimizing vacation schedules.

The team approach persisted through most of the century. In her 1969 book *Practical Charting Techniques,* Mary Eleanor Spear details the ideal team—a communicator, a graphic analyst, and a draftsman (still mostly men)—and its responsibilities. "It is advisable," Spear writes, "that [all three] collaborate."

In the 1970s things started to split. Scientists flocked to new technology that allowed them to visualize data in the same space (a computer program) where they manipulated it. Visuals were crude but available fast and required no help from anyone else. A crack opened in the dataviz world between computer-driven visualization and the more classic design-driven visualization produced by draftspeople (finally).

Chart Wizard, Microsoft's innovation in Excel, introduced "click and viz" for the rest of us, fully cleaving the two worlds. Suddenly anyone could instantly create a chart along with overwrought variations on it that made bars three-dimensional or turned a pie into a doughnut. The profoundness of this shift can't be overstated. It helped make charts a lingua franca for business. It fueled the use of data in operations and eventually allowed data science to exist, because it overcame the low limit on how much data human designers can process into visual communication. Most crucially, it changed the structure of work. Designers—draftspeople—were devalued and eventually fell out of data analysis. Visualization became the job of those who managed data, most of whom were neither trained to visualize nor inclined to learn. The speed and convenience of pasting a Chart Wizard graphic into a presentation prevailed over slower, more resource-intensive, design-driven visuals, even if the latter were demonstrably more effective.

With the advent of data science, the expectations put on data scientists have remained the same—do the work and communicate it—even as the requisite skills have broadened to include coding, statistics, and algorithmic modeling. Indeed, in HBR's landmark 2012 article on data scientist as the sexiest job of the 21st century, the role is described in explicitly unicornish terms: "What abilities make a data scientist successful? Think of him or her as a hybrid of data hacker, analyst, communicator, and trusted adviser. The combination is extremely powerful—and rare."

A rare combination of skills for the most sought-after jobs means that many organizations will be unable to recruit the talent they need. They will have to look for another way to succeed. The best way is to change the skill set they expect data scientists to have and rebuild teams with a combination of talents.

Building a Better Data Science Operation

An effective data operation based on teamwork can borrow from Brinton and Spear but will account for the modern context, including the volume of data being processed, the automation of systems, and advances in visualization techniques. It will also account for a wide range of project types, from the reasonably simple reporting of standard analytics data (say, financial results) to the most sophisticated big data efforts that use cutting-edge machine learning algorithms.

Here are four steps to creating one:

1 **Define talents, not team members.** It might seem natural that the first step toward dismantling unicorn thinking is to assign various people to the roles the "perfect" data scientist now fills: data manipulator, data analyst, designer, and communicator.

Not quite. Rather than assign people to roles, define the talents you need to be successful. A talent is not a person; it's a skill that one or more people possess. One person may have several talents; three people may be able to handle five talents. It's a subtle distinction but an important one for keeping teams nimble enough to configure and reconfigure during various stages of a project. (We'll come back to this.)

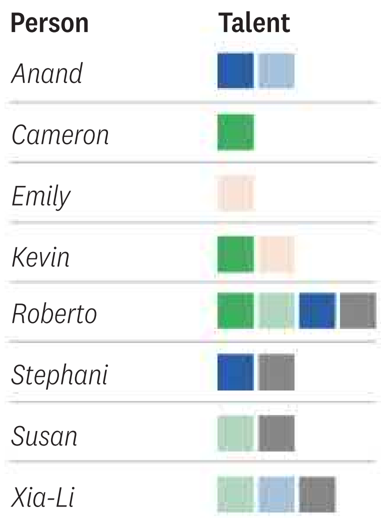
Any company's list of talents will vary, but a good core set includes these six:

Project management. Because your team is going to be agile and will shift according to the type of project and how far along it is, strong PM employing some scrumlike methodology will run under every facet of the operation. A good project manager will have great organizational abilities and strong diplomacy skills, helping to bridge cultural gaps by bringing

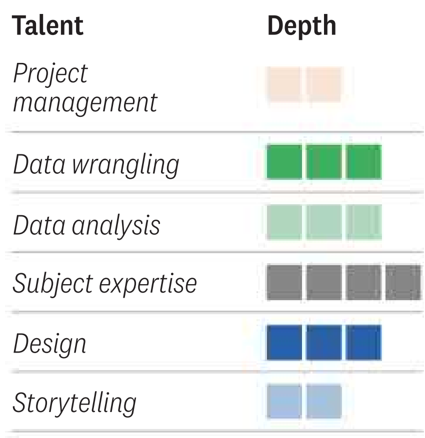
Build a Talent Dashboard

*Performing a talent audit helps managers do a better job of planning for projects and configuring teams. **First**, identify the talents you need to have access to:*

__Next__, map talents to team members:



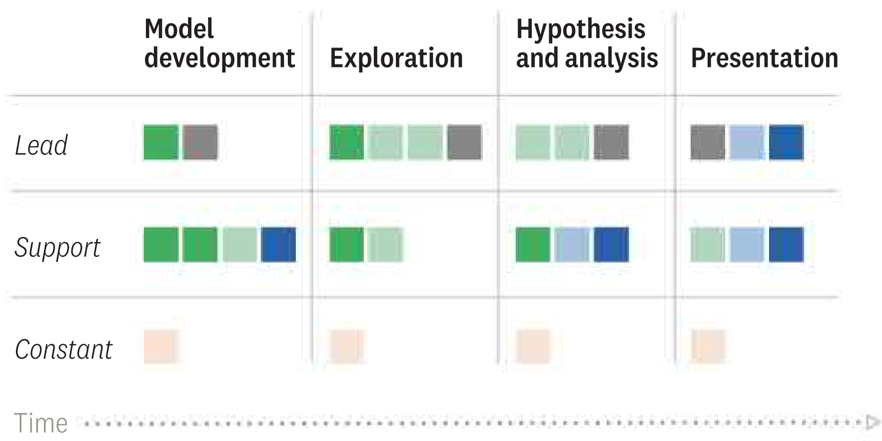
__Finally__, assess how much depth you have for each type of talent:



Put It to Use

Knowing what talents are available, managers can now assign units of talent to a project according to when it's needed. Typically, one cluster of talents will take the lead early in a project, and different clusters will do so in the later stages. Project management usually plays a big role throughout.

Upcoming project plan



disparate talents together at meetings and getting all team members to speak the same language.

Data wrangling. Skills that compose this talent include building systems; finding, cleaning, and structuring data; and creating and maintaining algorithms and other statistical engines. People with wrangling talent will look for opportunities to streamline operations—for example, by building repeatable processes for multiple projects and templates for solid, predictable visual output that will jump-start the information-design process.

Data analysis. The ability to set hypotheses and test them, find meaning in data, and apply that to a specific business context is crucial—and, surprisingly, not as well represented in many data science operations as one might think. Some organizations are heavy on wranglers and rely on them to do the analysis as well. But good data analysis is separate from coding and math. Often this talent emerges not from computer science but from the liberal arts. The software company Tableau ranked the infusion of liberal arts into data analysis as one of the biggest trends in analytics in 2018. Critical thinking, context setting, and other aspects of learning in the humanities also happen to be core skills for analysis, data or otherwise. In an online lecture about the topic, the Tableau research scientist Michael Correll explained why he thinks infusing data science with liberal arts is crucial. "It's impossible to consider data divorced from people," he says. "Liberal arts is good at helping us step in and see context. It makes people visible in a way they maybe aren't in the technology."

Subject expertise. It's time to retire the trope that data science teams are stuck in the basement to do their arcane work and surface only when the business needs something from them. Data science shouldn't be thought of as a service unit; it should have management talent on the team. People with knowledge of the business and the strategy will inform project design and data analysis and keep the team focused on business outcomes, not just on building the best statistical models. Joaquin Candela, who runs applied machine learning at Facebook, has worked hard to focus his team on business outcomes and to reward decisions that favor those outcomes over improving data science.

Design. This talent is widely misunderstood. Good design isn't just choosing colors and fonts or coming up with an aesthetic for charts. That's styling—part of design, but by no means the most important part. Rather, people with design talent develop and execute systems for effective visual communication. In our context, they understand how to create and edit visuals to focus an audience and distill ideas. Information-design talent—which emphasizes understanding and manipulating data visualization—is ideal for a data science team.

Storytelling. Narrative is an extremely powerful human contrivance and one of the most underutilized in data science. The ability to present data insights as a story will, more than anything else, help close the communication gap between algorithms and executives. "Storytelling with data," a tired buzz phrase, is widely misunderstood, though. It is decidedly not about turning presenters into Stephen Kings or Tom Clancys. Rather, it's about understanding the structure and mechanics of narrative and applying them to dataviz and presentations.

2 **Hire to create a portfolio of necessary talents.** Once you've identified the talents you need, free your recruiting from the idea that these are roles you should hire people to fill. Instead focus on making sure these talents are available on the team. Some of them naturally tend to go together: Design and storytelling, for example, or data wrangling and data analysis, may exist in one person.

Sometimes the talent will be found not in employees but in contractors. For my work, I keep a kitchen cabinet of people who have talents in areas where I'm weak. You may want to engage an information-design firm, or contract with some data wranglers to clean and structure new data streams.

Thinking of talents as separate from people will help companies address the last-mile problem, because it will free them from trying to find the person who can both do data science and communicate it. Nabbing some people who have superior design skills will free data scientists to focus on their strengths. It will also open the door to people who might previously have been ignored. An average coder who also has good design skills, for example, might be very useful.

Randal Olson, the lead data scientist at Life Epigenetics and curator of the Reddit channel Data Is Beautiful (devoted to sharing and discussing good dataviz), used to focus solely on how well someone did the technical part of data science. "I know, when I started, I had zero appreciation for the communication part of it," he says. "I think that's

Core Talents for Communicating Data

Here are the ways that various talents are involved as a data science project proceeds from gathering data to developing insight to presenting to stakeholders.

TALENT	TASKS	SKILLS	LEADS	SUPPORTS
Project management	• Manage creation of team, timeline, and schedules • Marshal resources • Troubleshoot	• Organization • Methodology (such as scrum) • People management	• During creation of a data science operation • During creation and execution of a project	• Ongoing data science operations
Data wrangling	• Find, clean, and structure data • Develop and implement data and visualization systems, algorithms, and models • Develop templates and systems for repeatable processes	• Coding • Statistics • Systems architecture	• Early in a data team's existence • Early in a project's development	• During routine data analysis, hypothesis testing, and visual exploration of data
Data analysis	• Develop and test hypotheses on data and data models • Find patterns and useful trends to inform business decisions	• Statistics • Scientific method • Critical thinking • Technical and nontechnical communication	• During routine data analysis, project design, hypothesis testing, and visual exploration of data	• Early in a data team's existence • Early in project development • During visual communication development and presentations to lay audiences
Subject expertise	• Define business goals • Develop and test hypotheses • Develop nontechnical communication	• Functional knowledge • Critical thinking • Strategy development • Nontechnical communication	• During project design, hypothesis testing, and visual exploration of data • During communication to nontechnical audiences	• Early in a data team's existence • During visualization and design process
Design	• Develop visual communication and presentations • Create templates and styles for repeatable visualization	• Information design • Presentation design • Design thinking • Persuasive communication	• During data visualization and the creation of presentations and visual systems (templating)	• During visual iteration and prototyping
Storytelling	• Develop stories from data and visuals • Help construct presentations in story format • Present to nontechnical audiences	• Information design • Writing and editing • Presenting • Persuasive communication	• During creation of data visualization and presentations • During presentation to nontechnical audiences	• During visual iteration and prototyping

common." Now, in some cases, he has changed the hiring process. "You know, they come in and we immediately start white-boarding models and math," he says. "It's data scientists talking to data scientists. Now I will sometimes bring in a nontechnical person and say to the candidate, 'Explain this model to this person.'"

3 **Expose team members to talents they don't have.** Overcoming culture clashes begins with understanding others' experiences. Design talent often has no exposure to statistics or algorithms. Its focus is on aesthetic refinement, simplicity, clarity, and narrative. The depth and complexity of data work is hard for designers to reconcile. Hard-core data scientists, in contrast, value objectivity, statistical rigor, and comprehensiveness; the communication part is not only foreign to them but distracting. "It goes against their ethos," says one manager of a data science operation at a large tech company. "I was the same way, working in data science for 10 years, but it was eye-opening for me when I had to build a team. I saw that if we just learned a little more about the communication part of it, we could champion so much more for the business."

There are many ways to expose team members to the value of others' talents. Designers should learn some basic statistics—take an introductory course, for example—while data scientists learn basic design principles. Neither must become experts in their counterparts' field—they just need to learn enough to appreciate each other.

Stand-ups and other meetings should always include a mix of talents. A scrum stand-up geared mostly to updating on tech progress can still include a marketer who makes presentations, as happens at Olson's company. Subject-matter experts should bring data wrangling and analysis talent to strategy meetings. Special sessions at which stakeholders answer questions from the data team and vice versa also help to bridge the gap. The chief algorithms officer at Stitch Fix, Eric Colson (who is something close to a unicorn, having both statistical and communication talents at a company where data science is intrinsic), asks his team members to make one-minute presentations to nontechnical audiences, forcing them to frame problems in smart ways that everyone can understand. "To this day," Colson says, "if you say 'coconuts' here, people will know that was part of a metaphor one person used to describe a particular statistical problem he was tackling. We focus on framing it in ways everyone understands because the business won't do what it doesn't understand." Another manager of a data science team created a glossary of terms used by technical talent and design talent to help employees become familiar with one another's language.

If your organization contains some of those rare people who, like Colson, have both data talents and communication and design talents, it helps to have them mentor one another. People who express interest in developing talents that they don't have but that you need should be encouraged, even if those strengths (design skills, say) are far afield from the ones they already have (data wrangling). Indeed, in my workshops I hear from data scientists who would love to develop their design or storytelling talent but don't have time to commit to it. Others would love to see that talent added to their teams, but their project management focuses primarily on technical outcomes, not business ones.

All this exposure is meant to create empathy among team members with differing talents. Empathy in turn creates trust, a necessary basis for effective teamwork. Colson recalls a time he used storytelling talent to help explain something coming out of data analysis: "I remember doing a presentation on a merchandising problem, where I thought we were approaching it the wrong way. I had to get merchandising and sales to buy in." Instead of explaining beta-binomial distribution and other statistical concepts to bolster his point of view, he told a story about someone pulling balls from an urn and what happened over time to the number and type of balls in the urn. "People loved it," he says. "You watched the room and how it clicked with them and gave them confidence so that at that point the math behind it wasn't even necessary to explain. They trusted us."

4 **Structure projects around talents.** With a portfolio of talents in place, it's time to use it to accomplish your goals. The shifting nature of what talents are needed and when can make projects unwieldy. Strong project management skills and experience in agile methodologies will help in planning the configuration and reconfiguration of talents, marshaling resources as needed, and keeping schedules from overwhelming any part of the process.

The depth and complexity of data work is hard for designers to reconcile, while hard-core data scientists find the communication part not only foreign but distracting.

analytics

Putting It All Together

You'll want to take other steps to make your projects successful:

Assign a single, empowered stakeholder. It's possible, or even likely, that not all the people whose talents you need will report to the data science team manager. Design talent may report to marketing; subject-matter experts may be executives reporting to the CEO. Nevertheless, it's important to give the team as much decision-making power as possible. Stakeholders will most often be people with business expertise who are closely connected to or responsible for business goals; the aim of the work, after all, is better business outcomes. Those people can create shared goals and incentives for the team. Ideally you can avoid the responsibility-without-authority trap, in which the team is dealing with several stakeholders who may not all be aligned.

Assign leading talent and support talent. Who leads and who supports will depend on what kind of project it is and what phase it's in. For example, in a deeply exploratory project, in which large volumes of data are being processed and visualized just to find patterns, data wrangling and analysis take the lead, with support from subject expertise; design talent may not participate at all, since no external communication is required. Conversely, to prepare a report for the board on evidence for a recommended strategy adjustment, storytelling and design lead with support from data talent.

Colocate. Have all team members work in the same physical space during a project. Also set up a shared virtual space for communication and collaboration. It would be undesirable to have those with design and storytelling talent using a Slack channel while the tech team is using GitHub and the business experts are collaborating over e-mail. Use "paired analysis" techniques, whereby team members literally sit next to each other and work on one screen in a scrumlike iterative process. They may be people with data wrangling and analysis talent refining data models and testing hypotheses, or a pair with both subject expertise and storytelling ability who are working together to polish a presentation, calling in design when they have to adapt a chart.

Make it a real team. The crucial conceit in colocation is that it's one empowered team. At Stitch Fix "our rule is no handoffs," Colson says. "We don't want to have to coordinate three people across departments." To this end he has made it a priority to ensure that his teams have all the skills they need to accomplish their goals with limited external support. He also tries to hire people many would consider generalists who cross the tech-communication gap. He augments this model with regular feedback for, say, a data person who needs help with storytelling, or a subject expert who needs to understand some statistical principle.

Reuse and template. Colson also created an "algo UI team." Think of this as a group of people who combine their design talents and data wrangling talents to create reusable code sets for producing good dataviz for the project teams. Such templates are invaluable for getting a team operating efficiently. Conversations that an information designer, say, would have with a data analyst about best practices in visualization become hard-coded in the tools. Graham MacDonald, the chief data scientist at the Urban Institute, has successfully fostered this kind of cooperation on templating. His group produces data by county for many U.S. counties. By getting data wrangling and subject expertise together to understand the communication needs, the group built a reusable template that could customize the output for any particular county. Such an outcome would have been difficult without the integration of those talents on the team.

THE PRESENTATION OF data science to lay audiences—the last mile—hasn't evolved as rapidly or as fully as the science's technical part. It must catch up, and that means rethinking how data science teams are put together, how they're managed, and who's involved at every point in the process, from the first data stream to the final chart shown to the board. Until companies can successfully traverse that last mile, data science teams will underdeliver. They will provide, in Willard Brinton's words, foundations without cathedrals.

HBR Reprint R1901K

SCOTT BERINATO *is a senior editor at HBR and the author of* Good Charts Workbook: Tips, Tools, and Exercises for Making Better Data Visualizations *(Harvard Business Review Press, 2019) and* Good Charts: The HBR Guide to Making Smarter, More Persuasive Data Visualizations *(Harvard Business Review Press, 2016).*

Harvard Business Review

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WHY YOUR MEETINGS STINK— AND WHAT TO DO ABOUT IT 140

Strategies for engagement

Illustrations by JASON SCHNEIDER

MANAGING YOURSELF

WHY YOUR MEETINGS STINK—AND WHAT TO DO ABOUT IT

by Steven G. Rogelberg

DAVE, A SENIOR VP at a large U.S. bank, was a strong one-on-one manager. However, 360-degree feedback revealed that he struggled in one critical area: leading effective meetings. Multiple employees described his meetings as "a time suck." They complained that he asked them to meet too often, allowed a few people to dominate conversations, and failed to create an environment where attendees really wrestled with ideas and engaged in critical thinking. These comments took Dave by complete surprise. He'd thought he was doing a good job with meetings—better than most of his peers, anyway.

Dave is not the first manager to overestimate his abilities in this area. Research suggests that of the 23 hours that executives spend in meetings each week, on average, eight are unproductive. Some 90% of people report daydreaming in meetings, and 73% admit that they use meeting time to do other work. And yet research by myself and others shows that leaders consistently rate their own meetings very favorably—and much more positively than attendees do. For instance, a telephone survey of more than 1,300 managers found that while 79% of them said that meetings they initiated were extremely or very productive, only 56% said the same about meetings initiated by others—clear evidence of an "I'm not the problem" attitude. Additional research provides insight into why: In a study with Jiajin Tong of Peking University, I found that the attendees who are the most active are the ones who feel that meetings are the most effective and satisfying. And who typically talks the most? The leader.

When leaders assume that their meetings are going well, they are less apt to solicit feedback and seek opportunities to improve. As a result, frustrations that attendees commonly cite in surveys (such as irrelevant agenda items, overly long duration, lack of focus) persist, leaving them disgruntled and disengaged. And the associated costs are significant. Apart from the actual time wasted—estimated to be more than $30 billion a year in the United States alone—there are opportunity costs of employees' not working on more important, inspiring, or revenue-generating tasks. Reduced engagement has been shown to diminish everything from performance and innovation to service delivery, helping others, and teamwork. One recent study found that the effects of a bad meeting can linger for hours in the form of attendee grousing and complaining—a phenomenon dubbed "meeting recovery syndrome." Finally, leaders who continue to run ineffective meetings, thereby failing to make the best use of the talent around them, might eventually see attrition on their teams and an erosion of their power and influence.

When consequences such as these are pointed out, a common impulse is to decree that all meetings should be eliminated. However, although most organizations have meetings that could easily be cut, a no-meetings policy is unrealistic and counterproductive. Meetings can efficiently bring together ideas and opinions and allow people to do their jobs in a more coordinated and cooperative manner. They help individuals form a coherent whole that is more adaptive, resilient, and self-directing, especially in

times of crisis. Perhaps most important, meetings help establish and promote consensus, thus serving as a focal point for collective drive and energy.

So the goal should be not to kill all meetings but to eliminate the ineffective or unnecessary ones and improve the quality of those that remain. To do this, leaders need to understand what they do well and not so well in meetings, but most organizations do little to promote self-awareness in this area. While presenting at a large HR conference, I asked the executives in attendance (many of them from *Fortune* 500 companies) how many included questions about meeting effectiveness in their employee engagement surveys or gathered 360-degree feedback about meeting leadership. Not one hand went up. In examining onboarding, leadership development, and high-potential programs across many top organizations, I've found little content on meeting best practices beyond the banal advice you'd see in any "how to" book (for example, don't forget to have an agenda). One study found that despite the prevalence of meetings today, 75% of those surveyed had received no formal training in how to conduct or participate in them.

It's therefore up managers to make positive changes by objectively assessing and improving their own meeting skills. Here's how.

ASSESSMENT

Better meeting leadership requires better self-observation. Take a few minutes after each meeting you run to reflect. Think about attendee behavior, conversational dynamics, and the content that was covered. Ask yourself: Were people distracted? Conducting side conversations? Consider who did most of the talking. Was it you? One or two other people? Did the discussion stray to irrelevant topics? Were all the opinions and ideas that were expressed fairly similar? If you answer yes to some or all of these questions, there's a problem. It's also important to note the positive aspects of your meetings, such as full participation and healthy debate. What seemed to energize people? What could you do in future meetings to encourage that kind of engagement?

In addition to these routine scans, check in periodically with people who attend your meetings. You can do this face-to-face, making sure to emphasize that you truly want candid feedback, or you can use technology to gauge participants' attitudes. For instance, as a follow-up to his 360, Dave conducted a three-question online survey to ask his peers and direct reports what was working well in his meetings, what needed improvement, and what suggestions folks had.

Once you've reflected on your own and solicited feedback from others, identify your key strengths and weaknesses and create a plan for improvement. In my consulting, I've found it useful to focus on two areas: preparation and facilitation.

PREPARATION

Few of us would question the notion that presentations, client work, and many other business activities require thought and planning, even if it's just a few minutes' worth. But people routinely ignore this best practice when it comes to meetings. Especially with regularly scheduled ones, it's easy to simply show up and default to the usual way of doing things. But when you're a steward of others' time, you owe it to them to make some modest upfront investment.

Before you hold a meeting, force yourself to make deliberate choices. First, know exactly why you're convening and define your goals to set the stage for achieving them. This process may include asking others to suggest agenda items, which not only promotes relevance but also increases ownership and engagement. If you don't have a clear mission or a list of agenda items, you should probably cancel.

Once you know why you're meeting, decide who needs to be there to help you. Too many attendees can lead to a

cacophony of voices or social loafing (whereby individuals scale back their efforts under the protection of a "crowd"), not to mention logistical challenges. That said, you don't want to pare the invite list down so much that necessary people aren't there or others end up feeling slighted. To find the right balance, think carefully about key decision makers, influencers, and stakeholders. Make sure that those outside the circle feel included, by asking for their input before the meeting and promising to share it and keep them in the loop. You might also consider a timed agenda, in which attendees join only the portions of the meeting pertinent to them.

Next, focus on time and place. It's human nature to stick to the same room, same hour, and same general setup. But those routines can cause people to glaze over. Instead, find ways to introduce variety: Move to a different venue, meet in the morning instead of the afternoon, experiment with nontraditional time blocks (such as 50 minutes instead of an hour), or change the seating arrangements so that everyone is next to and across from different colleagues. For groups of two to four people, you might suggest a walking meeting. For larger groups, try standing, which has been shown to boost meeting efficiency and attendee satisfaction— provided the sessions are kept short (15 minutes or so) to prevent discomfort.

For high-stakes meetings, your preparation should go even further. Try having a "premortem" (also known as prospective hindsight), which involves imagining that the meeting has failed and working backward to ascertain why. Then plan the meeting in a way that avoids or mitigates those problems.

Dave's big issue was that he held too many recurring weekly meetings that happened whether he had a compelling agenda or not. He held them out of habit rather than necessity. So he changed the cadence to every other week, and in the off weeks created something he called "magic time"—a slot that everyone on the team agreed to keep empty for either heads-down work or an impromptu meeting should an urgent issue surface. This significantly reduced the quantity of meetings, while also improving the quality of those that were held. Still, Dave had more work to do: improving his meeting facilitation.

FACILITATION

Facilitation starts the moment attendees walk into the room. Because people often experience meetings as interruptions—taking them away from their "real work"—the leader's first task is to promote a sense of presence among attendees. There are several ways to do this: by greeting people at the door, expressing gratitude for their time, offering snacks, playing music, and asking folks to turn off their phones and laptops. It is also important to start with a purposeful opening statement explaining why everyone is gathered. Consider recognizing group or individual accomplishments or reminding attendees of "meeting values"—previously agreed-upon rules of engagement, such as keeping comments succinct. All these tactics help people feel welcome and primed to tackle the task at hand.

As the conversation gets started, try to adopt a stewardship mindset, asking questions, engaging others, modeling active listening, drawing out concerns, and managing conflicts. Of course, leaders at times will need to offer their own opinions and directives to move the discussion forward, but the key to successful facilitation is understanding that you're primarily playing a supportive role. This ensures that there is genuine give-and-take, attendees feel safe speaking up, and they leave feeling committed to the outcomes.

What are some techniques for getting attendees to actively participate? Try using time allotments for each agenda item to see whether that helps ensure equitable "air time." To gauge interest in an idea, ask for a show of hands or,

Because people often experience meetings as interruptions—taking them away from their "real work"—the leader's first task is to promote a sense of presence among attendees.

if you think anonymity might help, use a quick-survey app or website to poll people using their cell phones. Then share and discuss the aggregate results. To prevent groupthink, consider incorporating periods of silence throughout the meeting to let people to come up with ideas or form opinions without hearing others' thoughts. "Brainwriting," for instance, involves having individuals quietly reflect and write down their ideas before sharing them out loud; research shows that this approach yields more creative thinking than brainstorming does. Silent reading can also be useful. Asking attendees in a meeting to read a proposal to themselves before discussing it can increase their understanding and retention of the new idea—and thus their engagement with it.

Dave had two facilitation issues to address: He needed to get more people talking, and he wanted them to engage in real dialogue and debate. To address the participation problem, he began to periodically remind attendees that he wanted everyone to be involved and expected teammates to encourage one another to speak up. He solicited people's ideas and opinions in advance to make sure he highlighted their concerns, or he would call on people to share if they were comfortable doing so. He made a point of asking quieter attendees to contribute thoughts or lead particular agenda items. He used body language to signal when someone was starting to dominate the conversation—for example, by shifting his gaze and turning his shoulders toward others to indicate that he wanted their reactions. And when he began to see better dynamics, he reinforced the behavior by offering comments such as "I'm loving this discussion and really appreciate everyone's engagement and participation. Thank you." To push his team toward more robust and in-depth conversation, he sometimes appointed people to play devil's advocate in meetings. If the goal was to address a specific issue, he would create PowerPoint slides listing all the potential options privately suggested to him by team members (without using their names) and open each one to group discussion. He also sometimes separated the evaluation of an issue from the decision making, to ensure that debate wasn't hampered by the pressure of having to make a choice on the spot—a strategy favored by companies including Cadbury Schweppes and Boeing.

REASSESSMENT

Even when managers proactively diagnose their meeting problems and learn to better prepare for and facilitate the gatherings they lead, there will undoubtedly be room for improvement. And so the process begins again. In Dave's case, after a few months of experimenting with the tactics I've described, he asked his team for another frank assessment. The good news is that everyone thought his meetings had vastly improved. But a new issue emerged. Some attendees felt that meetings were still longer than justified by their agendas; discussions sometimes rambled. So Dave decided to shave five or 10 minutes off his schedules to create a bit more urgency and focus.

Interestingly, people also offered suggestions that had nothing to do with meetings but were designed to address process issues in the department. At first, Dave was taken aback. But then he realized that in changing the way he ran his meetings, he'd shifted the culture on his team. He'd shown that he was a leader who valued reflection, learning, flexibility, taking reasonable risks, not being complacent, and trying new things, and his employees were rewarding him with proactive problem-solving.

Leading meetings might seem like a small part of a manager's job. But positive change in this one arena can lead to real gains for companies and their employees. If your organization isn't training you in this key skill, it's time for you to develop it on your own using these strategies.

HBR Reprint R1901L

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TIME OR MONEY?

BY ASHLEY WHILLANS

We work fewer hours than we used to, but we've never felt more pressed for time. Why? A growing body of research shows that we base our decisions on money—a bad metric for managing time. Jobs and rewards are structured to reinforce the time stress we all live with. The result: $12 billion in lost productivity plus health care and other costs. Whillans lays out the many ways that workers—and their companies—can take back their time, by making decisions that may seem counterintuitive but will ultimately result in greater happiness and productivity.

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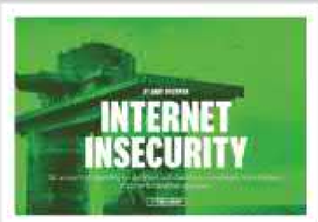

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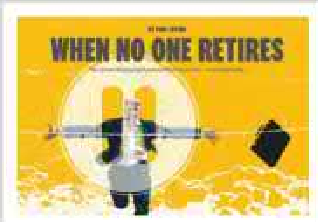

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BAD BLOOD ON THE SENIOR TEAM

HOW SHOULD A CEO ADDRESS FRICTION BETWEEN HIS CFO AND THE SALES CHIEF?

BY BORIS GROYSBERG AND KATHERINE CONNOLLY BADEN

The feedback in the 360-degree reviews was supposed to be anonymous.

But it was crystal clear who'd made the negative comments in the assessment of one executive.

Lance Best, the CEO of Barker Sports Apparel, was meeting with Nina Kelk, the company's general counsel, who also oversaw human resources. It had been a long day at the company's Birmingham, England, headquarters, and in the early evening the two were going over the evaluations of each of Lance's direct reports. Lance was struck by what he saw in CFO Damon Ewen's file. Most of the input was neutral, which was to be expected. Though brilliant and well respected, Damon wasn't the warmest of colleagues. But one person had given him the lowest ratings possible, and from the written remarks, Lance could tell that it was Ahmed Lund, Barker's head of sales. One read: "I've never worked with a bigger control freak in my life."

"These comments are pretty vicious," Lance said.

"You're surprised?" Nina asked.

"I guess not," Lance acknowledged.

His CFO and his sales chief had been at loggerheads for a while. Ahmed's 360 also contained a few pointed complaints about his working style[1]—no doubt from Damon.

Lance sighed. Five years earlier, when he'd stepped into his role, he'd been focused on growing the company that his father, Eric—the previous CEO—had founded. Barker licensed the rights to put sports leagues' logos on merchandise and partnered with large brands to produce it for retail markets, and when Lance took the company over, its revenues were about £100 million. Soon after, he'd landed the firm's biggest partner, Howell. Negotiating the deal with the global brand had been a challenge, but it increased business so much that Lance and his direct reports still felt they didn't have enough hours in the day to get everything done. They certainly didn't have time for infighting like this.[2]

"So what do we do with this info?" Lance asked.

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HBR's fictionalized case studies present problems faced by leaders in real companies and offer solutions from experts. This one is based on the HBS Case Study "Blake Sports Apparel and Switch Activewear: Bringing the Executive Team Together," by Boris Groysberg and Katherine Connolly Baden (case no. 417048-PDF-ENG), which is available at **HBR.org**.

Nina shrugged. “This is the first time I’ve been through this process myself.”

“Right. Clearly I’ve got to do something, though. I know that Ahmed and Damon aren’t mates, but I do expect them to be civil.”

Nina nodded, but Lance sensed she was biting her tongue. “You can be honest with me, Nina. I need your counsel.”

“Well,” she said tentatively, “I think that’s part of the problem. The expectation is that we’re civil, but that doesn’t translate to collaboration. We all trust you, but there isn’t a whole lot of trust between the team members.”[3]

“So does everyone think Damon is awful?” he asked, pointing to the report.

Nina shook her head. “It’s not just about him. You can see from the feedback that Ahmed isn’t a saint either. He picks fights with Damon, and the tension between them—and their teams—has been having a ripple effect on the rest of us. You see the finger-pointing. It seems like everyone is out for themselves.”

Although Lance hated hearing this, it wasn’t news. He’d just tried to convince himself that the problems were growing pains and would sort themselves out. After all, sales and finance were often at odds in organizations, and the conflict hadn’t had a big impact on Barker’s revenues. They’d grown 22% the previous year and 28% the year before that.

Of course, none of that growth had come easily, and opportunities had certainly been missed. Barker had dropped the ball on inquiries from several retailers interested in its products by failing to coordinate getting them into the company’s system quickly. Now, Lance realized that might be a sign of more fallout to come. He needed to fix this. “My dad always wanted to do one of those team-building retreats,”[4] he said, smiling. This had been a running joke among Barker’s executives for years. Whenever Eric had sensed tension, he would mention the idea, but he never followed through.

Nina laughed. “Unfortunately, I think we’re beyond that.”

THIS MESS

The next morning, Lance was in his office when he got a text from Jhumpa Bhandari, the head of product and merchandising: *Can you talk?*

Knowing this couldn’t be good, Lance called her immediately.

Skipping the formalities, she launched in: “You need to get them on the same page.” Lance didn’t have to ask who “them” was. “Ahmed has promised samples for the new line on the Clarkson account, but his order exceeds the limits accounting set, so we need Damon’s sign-off, and he won’t give it.”

This was a recurring fight. Ahmed accused Damon of throwing up roadblocks and using his power to undermine the sales department. Damon retorted that Ahmed was driving Barker into the ground by essentially giving products away. Lance went back and forth on whose side he took, depending on which of them was behaving worse. But he didn’t want to intervene again. Why couldn’t they just find a compromise?

Practically reading his mind, Jhumpa said, “They’ll stay in this standoff forever if you let them. It’s as if they’re in their own little fiefdoms; they act like they’re not even part of the same team.”

“Have you talked to them about this?”

“The holdup with Clarkson? Of course I have. But it doesn’t help. This situation is a mess.”

The last comment stung. The team wasn’t perfect, but it was still operating at a pretty high level.

“It would really help if you talked to them,” Jhumpa gently pleaded.

Lance thought back to the last time he’d sat down with Ahmed and Damon. Each had brought a binder filled with printouts of the e-mails they’d exchanged about a missed sale. Lance had marveled at how long it had probably taken each of them to prepare—never mind the wasted paper.

“Let me look into it,” Lance said. This had become his default response.

“Can I tell you what I’d do if I were in your shoes?” Jhumpa said. “Fire them both.”[5]

Though Lance had always appreciated her straightforwardness, he was taken aback. “Just kidding,” she added hastily. “What about having them work with a coach? I mean, we could all benefit from having someone to help us talk through how we handle conflicts and from establishing some new norms.”

Lance wondered if the firing comment had really been a joke, but he let it pass. “I did talk to that leadership development firm last year,” he said. “They had some coaching packages that seemed appealing, but we all agreed we were too busy with the new accounts.”

“Well, maybe we should make time now,” Jhumpa replied.

After they hung up, Lance was still thinking about the idea of letting

CASE STUDY CLASSROOM NOTES

1. *Many Fortune 500 companies do 360-degree reviews, but researchers have raised concerns about the usefulness of the data they generate.*

2. *According to a study from CPP Global, 36% of U.S. employees say they always or frequently deal with conflict at work.*

3. *How critical is trust on teams? A Mars Inc. study showed that individual motivation drove collaboration more often than trust and relationships did.*

4. *Do team activities actually result in better collaboration? Or are they mostly feel-good exercises with little lasting effect?*

5. *Research from RHR International found that CEOs who replaced members of their senior teams actually wished they had done so sooner.*

Ahmed and Damon go. Terrifying as the thought was, it might also be a relief. He'd heard of CEOs who'd cleaned house and replaced several top execs at once. He could keep Jhumpa, Nina, and a few others and bring in some fresh blood. It would be one surefire way to reset the team dynamics.

DOING JUST FINE

Later that afternoon, at the end of a regular meeting with the finance team, Lance asked Damon to stay behind.

"I heard there's a holdup on the Clarkson samples," he said.

"The usual. Sales needs to pare back the order. As soon as Ahmed does that, I can sign off," Damon said calmly.

"It doesn't sound like Ahmed's budging."

"He will."

Lance decided to wade in. "Is everything OK with you guys?"

"Same as usual. Why? What's going on? The numbers look great this quarter. We're doing just fine."

"I agree on one level, but I have concerns on another. It's taking six months to onboard new customers at a time when everyone is fighting for them."

"Is this about those 360 reviews? I tried to be fair in my feedback," Damon said a bit defensively.

"The input is anonymous, so I don't know who said what, but the tension between you and Ahmed is obvious."

"Of course it is. I'm the CFO and he's in charge of sales. If we're both doing our jobs well, there's going to be conflict.[6] And that's what I'm doing: my job. I'm the keeper of the bottom line, and that means I'm going to butt heads with a few people." Lance had heard him say this before, but Damon took it one step further this time. "Your discomfort with conflict doesn't make this any easier."[7]

They both sat quietly for a minute. Lance knew that as part of this process he'd need to examine his own leadership. Indeed, his 360 had been eye-opening. His people had described him as a passionate entrepreneur and a visionary, but they'd also commented on his preference for managing one-on-one instead of shepherding the team and on his tendency to favor big-picture thinking over a focus on details.

"OK. I hear you on that," Lance finally said. "That's on me. But you also need to think about what you can do to improve this situation. There's a difference between productive and unhealthy conflict, and right now it feels like we've got too much of the latter."[8]

OUR VISION MIGHT CRUMBLE

"Have you considered one of those team-building retreats?" Lance's father asked when they spoke that night. "I know you all never took me seriously—"

Lance chuckled. "Because you never booked it!"

"—but I still think it's a good idea," Eric continued. "No one really knows how to have a productive fight at work. It's not a skill you're born with. You have to learn it."

"I'm considering it, Dad. But I'm not sure it would be enough at this point."

"What about the comp?" This was another thing Eric had brought up routinely. During his tenure as CEO he'd realized that the C-suite compensation wasn't structured to encourage collaboration. Bonuses were based on individual, functional-unit, and company performance at respective weightings of 25%, 70%, and 5%.

"Maybe it's time to bump up that 5% to at least 10% or even 20%," Eric said.

"I'd like to make those changes, but I need Damon's help to do it, and he's swamped," Lance said. "Besides, lots of experts say that too many people view comp as a hammer and every problem as a nail. CEOs expect comp to fix anything, but usually you need other tools. I may have to do something more drastic."

"You're not considering firing anyone, are you?" Eric had personally hired all the senior executives now on Lance's team and was almost as loyal to them as he was to his own family.

"To be honest, it's been on my mind. I'm not sure what I would do without Ahmed or Damon. They're an important part of why we make our numbers each year. They help us win. But I look back and wonder how we did it playing the game this way. I need a team that's going to work together to reach our longer-term goals."[9] When Eric had retired, he and Lance had set a target of reaching revenues of £500 million by 2022. "This group feels as if it could disintegrate at any moment. And our vision might crumble along with it."[10]

"I'm sorry," Eric said. "Do you feel like you inherited a pile of problems from your old dad?"

"No, I feel like I've somehow created this one—or at least made it worse."

"Well, one thing is certain: You're the boss now. So you'll have to decide what to do."

6. *Should sales and finance departments be at odds? Can the resulting tension be productive for an organization?*

7. *Can you be an effective CEO if you're uncomfortable dealing with conflict?*

8. *Conflict over how to perform a task can produce constructive debate and improve decisions. But conflict over personal issues can erode trust on a team.*

9. *A study at Google found five keys to team effectiveness: psychological safety, dependability, structure and clarity, meaning, and impact.*

10. *Would this conflict have played out differently if Barker weren't a family business?*

HOW SHOULD LANCE HANDLE THE CONFLICT BETWEEN DAMON AND AHMED?
THE EXPERTS RESPOND

LANCE'S PROBLEM ISN'T personnel; it's culture. He should focus less on the specific conflict between Ahmed and Damon and more on the silos that his executives are operating in—silos that he has enabled and perhaps even encouraged. Aligned incentives, outside coaching, and team-building exercises are all helpful, but they won't work unless Lance is clear about the kind of collaboration he wants to see.

Teamwork happens when people understand that their goals are intricately linked with their colleagues'. The CFO alone can't ensure an organization's success; he or she needs to agree with the sales chief about the best type of growth, with the head of HR about talent needs, and with the general counsel about contract terms. It may sound clichéd, but the C-suite is an ecosystem, not a fiefdom.

LANCE NEEDS TO FOCUS ON THE SILOS HIS EXECUTIVES ARE OPERATING IN.

Four years ago, when I took over as CEO of ABM, one of the largest facility-services providers in the United States, the company was pretty siloed. So I created a rule that no decision could be made without at least three people in the room. When the CFO came to me with a recommendation, I'd say, "Let's bring in the CHRO and see what he thinks." My belief was—and still is—that greater input from more people yields better decisions. I'll admit that it was awkward at the start; people thought I didn't trust them to do their jobs. But within six months they had embraced the change. The CFO would show up at my office with the CHRO and the general counsel. Now it's very rare for someone to come to me without having first bounced things off at least a few colleagues.

The idea isn't to create extra work. By all means Lance should be careful with his team's time. But I'm not advocating for extensive consultations or long meetings to hash out every detail. I'm just arguing for more open conversation—between Ahmed and Damon and everyone else—so that the group can avoid conflict and make higher-quality decisions together.

Lance can start by holding biweekly staff meetings where the group members talk candidly about organizational goals and how to collectively accomplish them. He might even ask them all to work on a project—perhaps revamping the compensation system—so that they have a concrete business reason to collaborate.

Soon after I took over ABM, we reorganized the business from service lines to customer verticals and moved to a shared-service-center model. To help us through the process, I formed a steering committee of the firm's senior leaders. I told them I expected them to debate and argue, but that when we made a decision, there would be no eye rolling or second-guessing. Most were able to abide by that. A few who continued to stir up conflict and undermine our efforts were eventually let go.

Lance may need to do the same with Ahmed and Damon if they can't work through their tensions. But first he must explicitly encourage more C-suite teamwork. "Fresh blood" won't solve the problem if the culture is still dysfunctional.

Scott Salmirs is the president and CEO of ABM Industries.

Illustrations by JOEL KIMMEL

Dale Winston is the chairwoman and CEO of Battalia Winston, an executive search firm.

I AGREE WITH Jhumpa: What a mess! Has Lance really turned a blind eye to this problem since he took over as chief executive, five years ago? He's lucky that Barker has maintained its growth, because this kind of turf war can be crippling to an organization. And I suspect that if he doesn't address the tension between Ahmed and Damon soon, his luck will run out.

At this point, outside help seems warranted. Lance should hire an organizational consultant and coach to objectively analyze and diagnose the situation and make neutral recommendations on how to fix it.

It may be that Damon needs coaching on how he communicates or that he and Ahmed need to talk through their conflicting approaches. In the 27 years that I've run Battalia Winston, one of the largest woman-owned executive search firms in the United States, I've hired many coaches to help executives understand how their work styles may be affecting those around them.

I've also had success with the team-building exercises that Eric suggests. Retreats are a great opportunity to step away from day-to-day issues and gripes and discuss work styles and how people want to collaborate and generally put everyone on the same page. With the right facilitator, which is always critical, Lance can get his team rowing in the right direction, and the exercise will benefit all members even if some people need it more than others do.

I certainly would not recommend that Lance fire either Ahmed or Damon now. When two senior managers don't play well together in the sandbox, employees inevitably start to take sides. If Lance sacks one or both of them simply because they bicker with each other, he looks weak and incapable of managing healthy debate on his team.

There are conflicts in every organization. Damon is right that sales departments often prioritize revenues over profitability and that it's the job of a CFO to push back. Most of the conflicts I've seen among our senior staff throughout the years have been over territory, clients, and claiming credit for other people's work. But we've always been able to address those issues—and ensure that they don't devolve into destructive personal battles—by emphasizing our team ethos and showing our consultants how everyone's work contributes to our collective success.

IF LANCE SACKS ONE OR BOTH OF THEM, HE LOOKS WEAK AND INCAPABLE.

Lance has made the mistake of letting this fester. As a newly minted CEO, he should have headed this problem off at the pass. But it's not too late. With a renewed commitment to top-level collaboration and help from an expert, I believe, he can ease the tensions between Damon and Ahmed and, I hope as a result, meet Barker's revenue goal.

HBR Reprint R1901M

Reprint Case only R1901X

Reprint Commentary only R1901Z

“ COMMENTS FROM THE HBR.ORG COMMUNITY

Play Mediator
Lance needs to bring Ahmed and Damon together to talk about mutual respect and get them to open up about the frustrations they each have and why. With that information, they should be able to come up with a new way to communicate.
Sara Koenig, vice president, Advantage Home Health Services

Make It About Customers
I'd bring in some customers affected by the inefficiencies this rivalry has created and, in a focus group, have them relay their concerns. The hope is that Damon and Ahmed will understand the threats to the business as a whole and assess how their actions could erode customer confidence.
Lanre Adigun, senior management consultant, Verizon

Focus Them on the Big Picture
Lance should meet with both men face-to-face and ask them if there's a higher goal they can both get behind. If either one refuses to get on board, Lance should fire him.
Jessica Liu, technical project manager, IGT

JANICE BRYANT HOWROYD

Founder and CEO, Act-1 Group, the workforce management company

WHAT I'M READING

My siblings and I grew up in a segregated Southern community, with no library on our side of town. But my parents made sure we had books. We'd sit at the dining room table and share stories and information—my mother said that books were the best diet—and, to earn our allowance, we had to give reports on them to our dad.

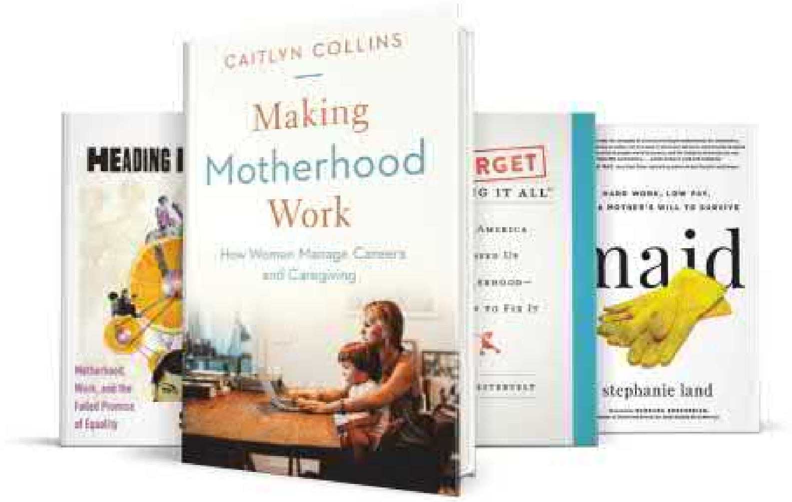
I'm still an avid reader and move between a few titles at a time. Currently, these include *The Money Masters,* by John Train, an older book on wealth management; *Before the Mayflower,* by Lerone Bennett Jr., a history of black America that I'm rereading; and *Collapse: How Societies Choose to Fail or Succeed,* by Jared Diamond. For fiction, I enjoy series by black authors like Walter Mosley. Since I travel often, I read on my Kindle, but when I love a book, I'll buy a print copy for one of my home libraries. I now have more than 6,000 books.

SYNTHESIS

IDEAL WORKER OR PERFECT MOM?

YOU CAN'T BE BOTH. STOP TRYING.

BY ALISON BEARD



I'M A WORKING MOM. Often, that feels like the whole of my identity. I work—as an editor at HBR. And I mother—two children, now aged 9 and 10. Yes, I have a husband and friends and outside interests. But the vast majority of my time, energy, and focus is spent on two things: job, kids. And if I'm honest, trying to excel in both realms is a constant, draining, exasperating struggle. Can I be a star employee and a sterling parent at the same time? Should I balance or integrate? Lie low or lean in? Aim to "have it all" or settle for "good enough"?

Millions of women ask themselves similar questions daily, and there are no easy answers. Yet analyses of and advice on working motherhood (or, rather, of moms who work outside the home, since mothering is, of course, its own job) continue to pour in.

The latest books on the subject piqued my interest, however, because my peers and I aren't their only target audience. They're not telling us how to better manage our mornings or be more mindful at bedtime. They offer no tips on chore charts or carpool schedules, e-mail triage or task delegation to make both home and office run more smoothly.

No, these new releases take a wider view, more in the vein of Anne-Marie Slaughter's *Unfinished Business* than Sheryl Sandberg's *Lean In*. They consider how cultural norms and government policy have shaped the lives of working mothers over time and across geographies. They offer deep insights into the challenges we face and, in some cases, recommendations on how we, collectively, can improve the situation.

Making Motherhood Work, by the sociologist Caitlyn Collins, surveys the state of affairs in Sweden (long heralded as a bastion of gender equality and a paradise for working moms); the former East Germany (where you see vestiges of a communist system that encouraged mothers to work); western Germany (where culture hasn't caught up with pro-mom policies); Italy (where women seem supported by family and the state but don't feel that way) and the United States (where because we get the least organizational and governmental help, we are "drowning in stress").

Collins interviewed 135 women—most of them white and middle class, a limitation she acknowledges—and her tone is decidedly academic. But she captures poignant moments. For example, Samantha, a Washington, DC, lawyer, says: "Before I had children, the message...was... 'You can do everything....You can be at the top.'...Load of crap....I *can't* do everything. If I keep all the balls in the air, I'm broken."

Donnetta, a professor in Rome, recalls how her PhD adviser told her not to get pregnant, or her career would be through. So "at work," she explains, "you don't even mention your family....You are pretending you don't have anything to do at home." From Munich, Stuttgart, and Heilbronn interviewees, Collins learns the terms "career whore" and *rabenmutter,* or "raven mother," which refers to a woman who abandons her

chrisdorney/iStock; sharply_done/iStock

Illustration *by* JOEL KIMMEL

WHAT I'M WATCHING

Live television isn't a luxury I allow myself unless I'm in an airport lounge. At home or between office meetings, I catch up on the news—CNN, CNBC, Fox Business News—using my iPad or phone; my team sends me relevant links. I stay connected to black media online, too. It's always a treat to leaf through the pages of a magazine, but all the publications I read when I was young—*Jet, Ebony, Essence*—are multimedia platforms now.

I WRITE IN MY BOOKS. MY DAUGHTER SAYS IT'S LIKE I'M TALKING BACK TO THE AUTHORS.

WHERE I'M GOING

I'm a passionate supporter of events for female and minority leaders, especially those run by the Women's Business Enterprise National Council, WEConnect, the Women Presidents' Organization, and the National Minority Supplier Development Council. Although I live in California, I visit the East Coast to serve on White House and FCC advisory committees and the Women's Leadership Board at Harvard. My teams help me be strategic about matching my travel with visits to our U.S. and European offices.

young in the nest. Even a Stockholm engineer who benefits from ample parental leave, part-time work options, and a culture that promotes work-family balance admits to "internal pressure," noting: "I think [I'll] do...well enough for everyone around me. But, to convince myself of it, that's going to be the tricky part."

Collins's theme is that, while progressive policies can improve the lives of working mothers, cultural beliefs and narratives must move in tandem. And lawmakers and organizations must beware of unintended consequences; for example, long maternity leaves are nice but also reinforce the idea that women should be primary caregivers.

Shani Orgad, a professor at the London School of Economics, echoes this view in her new book, *Heading Home,* an in-depth study of 35 women in the United Kingdom who left promising careers to become stay-at-home moms and now quietly regret it. Orgad thinks they represent "broader crises of gender, work, and family in contemporary capitalism." While that's a lot to hang on a few ladies, her argument—which juxtaposes media representations of working and nonworking mothers against their real lives—is persuasive. "Rather than seeing their situation as...determined by the sheer incompatibility of family life and...work cultures," Orgad concludes, "the women I spoke to experienced it as personal failure." They simply couldn't figure out how to do it all and—worse—felt it was entirely their fault.

Two more U.S.-focused additions to this feminist chorus are *Forget "Having It All,"* by the journalist Amy Westervelt, and *Maid,* by Stephanie Land, who turned her experience as a low-paid house cleaner raising a young daughter into a heartfelt memoir. In some ways the books could not be more different. Westervelt presents the full (and sometimes dry) history of American female employment to show how we arrived at today's problems and usefully broadens her scope to include minority and LGBT parents and mothers from various income levels. Land's story is an intimate account of "working jobs no one else wanted to do" and still needing "seven different kinds of government assistance to survive." Yet the two authors have the same message: Working mothers (especially poor ones) simply can't manage without a lot of help. Like Collins and Orgad, Westervelt calls for policy and cultural change and then gets into serious, helpful specifics—from government-subsidized, gender-agnostic family leave and corporate day care to encouraging boys to babysit and men to assume more household tasks.

Together, these books paint a bleak picture but also offer a weird kind of comfort. They assure me that the tension and guilt I feel as a working mother isn't something I can relieve on my own or even with support from my family-focused husband, fabulous nanny, dear circle of sister-moms, and deeply empathetic boss and colleagues. It will take an entire society (perhaps one a little more like Sweden's) to truly ease the burden.

While I and most other working moms I know would love to give 100% to both our jobs and our kids, we can't accomplish the impossible.

"It felt like we barely got by. Always late for something. Always in the car. Always in a rush to finish meals and clean up. Always moving, barely pausing to take a breath."
Stephanie Land, *Maid*

Making Motherhood Work
Caitlyn Collins
Princeton University Press, 2019

Heading Home
Shani Orgad
Columbia University Press, 2019

Forget "Having It All"
Amy Westervelt
Seal Press, 2018

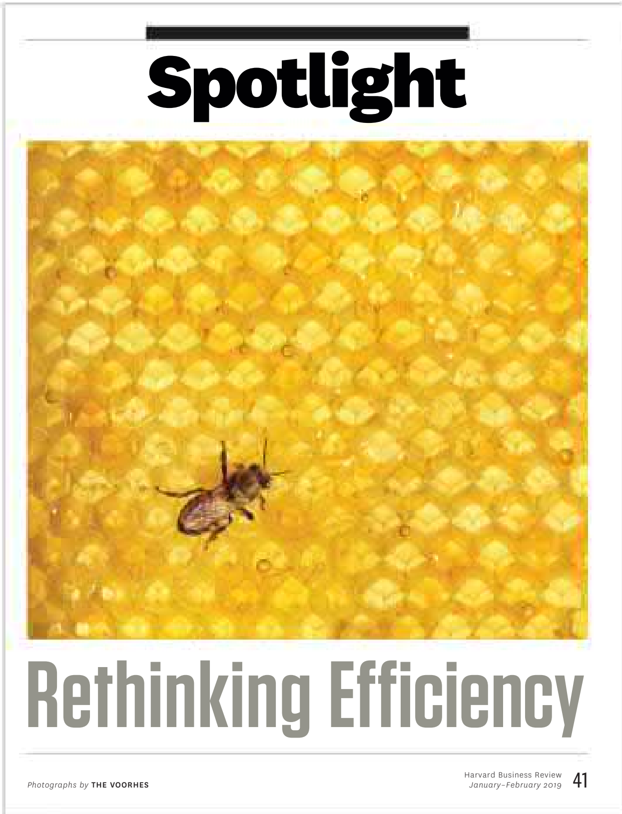
Maid
Stephanie Land
Hachette Books, 2019

ALISON BEARD *is a senior editor at HBR.*

EXECUTIVE SUMMARIES JANUARY–FEBRUARY 2019

SPOTLIGHT
RETHINKING EFFICIENCY

Beginning with Adam Smith, business thinkers have steadfastly regarded the elimination of waste as management's holy grail. But what if the negative effects from the pursuit of efficiency eclipse the rewards?
page 41


Spotlight

Rethinking Efficiency

Photographs by THE VOORHES

Harvard Business Review January–February 2019 41

THE HIGH PRICE OF EFFICIENCY

The managerial belief in the unalloyed virtue of efficiency is as strong as ever. It is embodied in multilateral organizations aimed at making trade more efficient; ensconced in foreign direct-investment liberalization, deregulation, privatization, and waste-fighting governments; and promoted in the classrooms of every business school on the planet. But, argues Roger Martin, director of the Martin Prosperity Institute, an excessive focus on efficiency produces startlingly negative effects and creates the potential for social disorder, as rewards go to an increasingly limited number of efficient competitors. The remedy, he says, is a stronger focus on a less immediate source of competitive advantage: resilience. To this end, organizations can limit scale, introduce productive friction, promote patient capital, create good jobs, and change the way we teach.

SUCCESS BREEDS INEQUALITY: WHAT THE DATA SHOWS

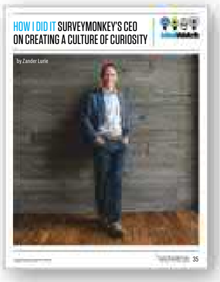
Graphical depictions of the state of play since the Great Recession, showing that the wealthiest individuals and companies are pulling further and further away from the rest

"THE COSTS OF COMPLEXITY ARE HARD TO SEE"

Jim Hackett, CEO of Ford Motor Company, talks with HBR about what he calls *corporate fitness* and how he has applied it at Ford and, previously, at the office furniture company Steelcase.

THE COMPLETE SPOTLIGHT PACKAGE IS AVAILABLE IN A SINGLE REPRINT.
HBR Reprint R1901B

HOW I DID IT



SURVEYMONKEY'S CEO ON CREATING A CULTURE OF CURIOSITY

Zander Lurie | page 35

Lurie took the helm at SurveyMonkey in the aftermath of tragedy: Dave Goldberg, the previous CEO and his longtime friend, had died suddenly at the age of 47. As a member of the company's board, Lurie first aided in the search for a replacement and then, after that person didn't work out, assumed the role himself. His employees were still in the grip of grief, fear, and anxiety. While continuing to provide them with emotional support, Lurie set about defining the company culture. When customers were asked what they valued most about the company's offerings, and employees what excited them about coming to work every day, the word that came up most often was "curiosity." Lurie and his team started encouraging and rewarding curiosity across the organization: celebrating the "question of the week" at town halls; using a peer recognition program to reward people for their candor; hosting the Goldie Speaker Series (named for the deceased CEO) to learn about success in other fields. They believe that when curiosity ebbs, people lapse into routine and complacency, exposing a company to disruption. **HBR Reprint** R1901A

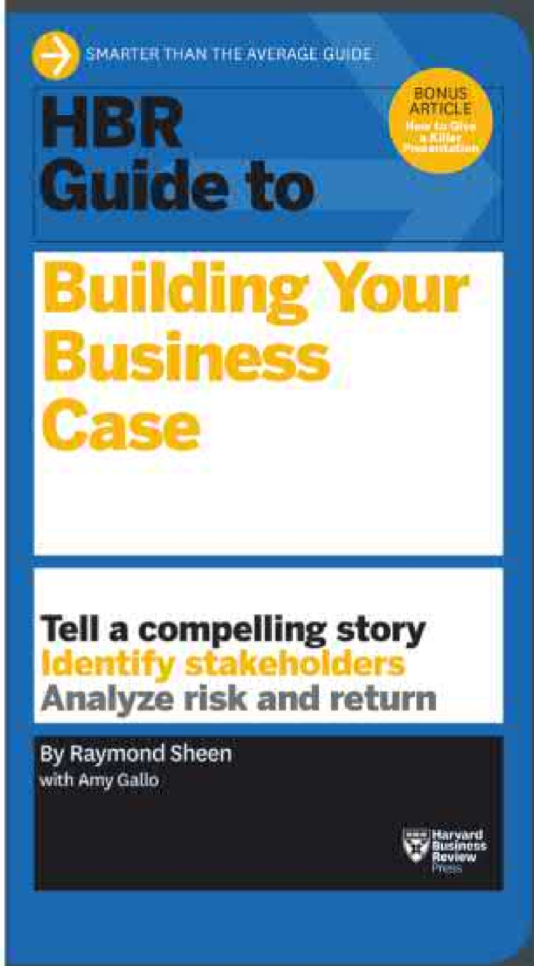
MANAGING YOURSELF

WHY YOUR MEETINGS STINK– AND WHAT TO DO ABOUT IT

Steven G. Rogelberg | page 140

Research shows that leaders consistently rate their own meetings very favorably—and much more positively than attendees do. When managers assume that their meetings are going well, they are less apt to solicit feedback and seek opportunities to improve. As a result, frustrations that attendees commonly cite (such as irrelevant agenda items, overly long duration, lack of focus) persist, leaving people disgruntled and disengaged.

This article helps managers learn to diagnose their meeting problems, better prepare for and facilitate the gatherings they lead, and seek feedback to further hone their skills.
HBR Reprint R1901L



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FEATURES

CULTURE

THE HARD TRUTH ABOUT INNOVATIVE CULTURES

Gary P. Pisano | page 62

Innovative cultures are generally depicted as pretty fun. They're characterized by a tolerance for failure and a willingness to experiment. They're seen as being psychologically safe, highly collaborative, and nonhierarchical. And research suggests that these behaviors translate into better innovative performance. But despite the fact that innovative cultures are desirable, and that most leaders claim to understand what they entail, they are hard to create and sustain.

That's because the easy-to-like behaviors that get so much attention are only one side of the coin. They must be counterbalanced by some tougher and frankly less fun behaviors: an intolerance for incompetence, rigorous discipline, brutal candor, a high level of individual accountability, and strong leadership.

Unless the tensions created by this paradox are carefully managed, attempts to create an innovative culture will fail.

HBR Reprint R1901C

OPERATIONS

RETAILERS ARE SQUANDERING THEIR MOST POTENT WEAPONS

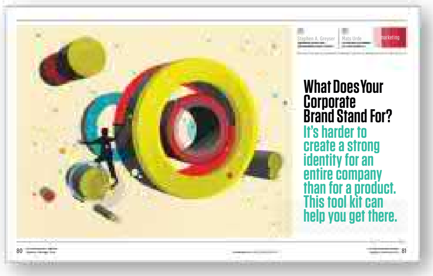
Marshall Fisher, Santiago Gallino, and Serguei Netessine | page 72

As they fight for survival in the era of online shopping, brick-and-mortar retailers are cutting costs by slashing head counts and budgets for training. But that erodes their biggest edge over e-tailers: a live person customers can talk to face-to-face. For every dollar a retailer saves on staffing, it may be losing several dollars in revenues and gross profits if customers leave stores empty-handed because they can't find a knowledgeable salesperson to help them.

The solution lies in optimizing staffing and training for each store, but most retailers don't know how to do that. This article offers them a step-by-step approach. It involves analyzing historical data, conducting experiments, and assessing the results, and when applied systematically can add as much as 20% to the revenues of existing stores. Even better, if staffing increases at some stores are offset by cuts at others, and vendors fund product training, those higher sales will cost retailers little or nothing to generate.

HBR Reprint R1901D

MARKETING



WHAT DOES YOUR CORPORATE BRAND STAND FOR?

Stephen A. Greyser and Mats Urde | page 80

While most firms are adept at defining product brands, they're less sure-footed with their corporate brands. What exactly does a parent company's name represent, and how is it perceived in the marketplace?

A strong corporate identity provides direction and purpose, boosts the standing of products, aids in recruiting, and shores up a firm's reputation. To help organizations define theirs, the authors have devised a tool called the *corporate brand identity matrix*. It guides teams through an examination of the nine components of corporate identity, which include mission, culture, relationships, and core values and promises. Often that exercise reveals broken links between the elements that executives need to align and strengthen.

This article describes how companies have used the matrix to clarify their relationships with daughter brands, retool their identities to support new businesses, revamp their overall image, evaluate targets for acquisition, and more.

HBR Reprint R1901E

INNOVATION

CRACKING FRONTIER MARKETS

Clayton Christensen, Efosa Ojomo, and Karen Dillon
page 90

With emerging-market giants such as Brazil, Russia, India, and China experiencing slowdowns, investors, entrepreneurs, and multinationals are looking elsewhere. They've been eyeing frontier economies such as Nigeria and Pakistan with great interest—and enormous trepidation. Can one find serious growth opportunities amid extreme poverty and a lack of infrastructure and institutions?

The answer, the authors argue, is yes. The key lies in *market-creating innovations:* products and services that speak to unmet local needs, create local jobs, and scale up quickly. Examples include MicroEnsure, which has made insurance affordable for 56 million people in emerging economies, and Galanz, which has brought microwave ovens to millions of Chinese consumers previously considered too poor to buy such an appliance.

What's more, the essentials of development can be "pulled in" by market-creating innovators—and over time, governments and financial institutions tend to offer their support.

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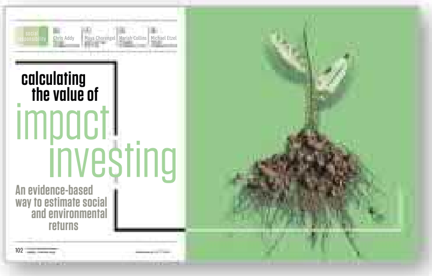
SOCIAL RESPONSIBILITY



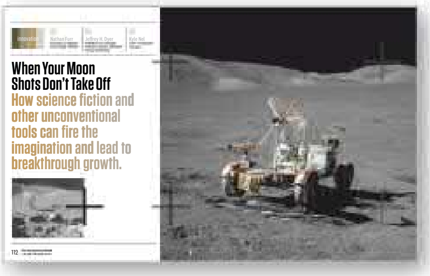
CALCULATING THE VALUE OF IMPACT INVESTING

Chris Addy et al. | page 102

Impact investing—directing capital to ventures that are expected to yield social and environmental benefits as well as profits—provides investors with a way to "do well by doing good." But whereas the business world has tools for estimating a potential investment's financial yield, it lacks them for estimating social rewards in dollar terms. Now the Rise Fund and the Bridgespan Group have developed what they call the *impact multiple of money* (IMM) to demonstrate the value of putting impact underwriting on the same footing as financial underwriting. In this article they explain their six-step process for calculating it: (1) Assess the relevance and scale of a potential product, service, or project. (2) Identify target social or environmental outcomes. (3) Estimate the economic value of those outcomes to society. (4) Adjust for risks. (5) Estimate terminal value. (6) Calculate the social return on every dollar spent. The IMM, they write, "offers a rigorous methodology to advance the art of allocating capital to achieve social benefit."

HBR Reprint R1901G

INNOVATION



WHEN YOUR MOON SHOTS DON'T TAKE OFF

Nathan Furr, Jeffrey H. Dyer, and Kyle Nel | page 112

Many companies looking for breakthroughs struggle to move beyond incremental ideas, because cognitive biases trap people in the status quo and prevent them from seeing big opportunities. But four tactics can help firms overcome biases and think far more creatively:

Science fiction. Sci-fi writers have foreseen all kinds of innovations. When Lowe's invited some in to envision its future, it got ideas for augmented reality phones, service robots, 3-D printing, and other new technologies that boosted sales.

Analogies. These can help innovators make big leaps too. For instance, when Charlie Merrill applied the analogy of a supermarket to the brokerage business, he changed the industry.

First principles logic. Often it helps to reexamine foundational assumptions and rebuild from the ground up. That's how Regeneron cut drug development costs 80%.

Exaptation. Why do we use something for one purpose and not another? Asking that question led to the creation of the Flex-Foot, a revolutionary prosthetic that doesn't *look* anything like a foot but *acts* like one.

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STRATEGY

WHY SOME PLATFORMS THRIVE…AND OTHERS DON'T

Feng Zhu and Marco Iansiti
page 118

In the digital economy, scale is no guarantee of continued success. After all, the same factors that help an online platform expand quickly—such as the low cost of adding new customers—work for challengers too. What, then, allows platforms to fight off rivals and grow profits? Their ability to manage five aspects of the networks they're embedded in:

- network effects, in which users attract more users
- clustering, or fragmentation into many local markets
- the risk of disintermediation, wherein users bypass a hub and connect directly
- vulnerability to multi-homing, which happens when users form ties with two or more competing platforms
- network bridging, which allows platforms to leverage users and data from one network in another network

When entrepreneurs are evaluating a digital platform business, they should look at these dynamics—and the feasibility of improving them—to get a more realistic picture of its long-term prospects.

HBR Reprint R1901J

ANALYTICS

DATA SCIENCE AND THE ART OF PERSUASION

Scott Berinato | page 126

Despite heavy investments to acquire talented data scientists and take advantage of the analytics boom, many companies have been disappointed in the results. The problem is that those scientists are trained to ask smart questions, wrangle the relevant data, and uncover insights—but not to communicate what those insights mean for the business. To be successful, the author writes, a data science team needs six talents: project management, data wrangling, data analysis, subject expertise, design, and storytelling. He outlines four steps for achieving that success: (1) Define talents, not team members. (2) Hire to create a portfolio of necessary talents. (3) Expose team members to talents they don't have. (4) Structure projects around talents.

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Printed in the U.S.A. *Harvard Business Review* (ISSN 0017-8012; USPS 0236-520), published every other month for professional managers, is an education program of Harvard Business School, Harvard University; Nitin Nohria, dean.

Published by Harvard Business School Publishing Corporation, 60 Harvard Way, Boston, MA 02163.

"We were the ones who got stuff done, and that meant we sometimes ran a little rough over people."

MICHAEL OVITZ

As a cofounder of Creative Artists Agency, Ovitz revolutionized how big deals in film, TV, music, and corporate media were done from the 1970s through the 1990s. Following brief stints at Disney and his own mobile content start-up, he reset his career as an adviser in Silicon Valley.

Interviewed by Alison Beard

HBR: When launching CAA, how did you get clients to join you?
Ovitz: It was an uphill fight. We were young, so we had to differentiate. We could not perform like traditional agents—fielding calls and trying to sell clients on jobs. Our thesis from day one was that we would take clients' dreams and put the projects together.

How did you know whether people would collaborate well? In the Valley now, I deal with men and women who believe they're unstoppable. In the entertainment business, people were just as spirited. But you could tell if they'd be collaborative by how they accepted suggestions. Look at Mark Zuckerberg. He's not afraid to have brilliant people working for him who tell him what they think. When we put *Ghostbusters* together, Dan Aykroyd wrote it, but Bill Murray put his imprimatur on it, and [the director and producer] Ivan Reitman and [the late actor] Harold Ramis—may he rest in peace—added theirs. Understanding the creative process, doing our homework on the participants in a package—that gave us a sense of whether they could relate.

I have to ask: Did you know about all the sexual harassment and abuse in Hollywood? We didn't know what we know now. We did deal with Harvey Weinstein, and we had no idea. And we didn't have a lot of clients complaining about problems. When we did, we took care of them. But we didn't allow clients to have meetings at odd places, and most of the time—in particular, with female clients—agents accompanied them.

How did you get your agents to work together? We knew that you could manage by creating competition between employees. Or you could go a different way—a combination of American team sports and the Japanese philosophy of *nemawashi,* or management by consensus. So people are invested in and help one another. We kept notes on everything and shared information. You'd sit in a staff meeting and someone would say, "We have a singer who wants to do a film," and a literary agent would say, "I'll help." He had no reason to, but he did, and we'd get a movie made. That happened with Prince and *Purple Rain*. No one said the idea was stupid. Half a dozen agents said, "Let's try."

Why was your tenure at Disney so short? I don't think Michael Eisner liked having an equal or the thought of losing control. The funny thing is that there was ample work for both of us, but we never got it right in terms of splitting up responsibilities.

After that and watching your new start-up fail to take off, how did you regroup? Whenever I had a setback, Michael Crichton, a good friend, would tell me, "There's always another horse race. Just take some time off, then jump into something that interests you." In the mid-1990s I got interested in tech. In 1999 I was asked to be on a board. I got crazy infatuated with the Valley. My first year there I took 400 meetings just to get that frame of reference I used to have at CAA.

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Randall Slavin/Contour RA by Getty Images

For more from Michael Ovitz, go to **HBR.org**.

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