



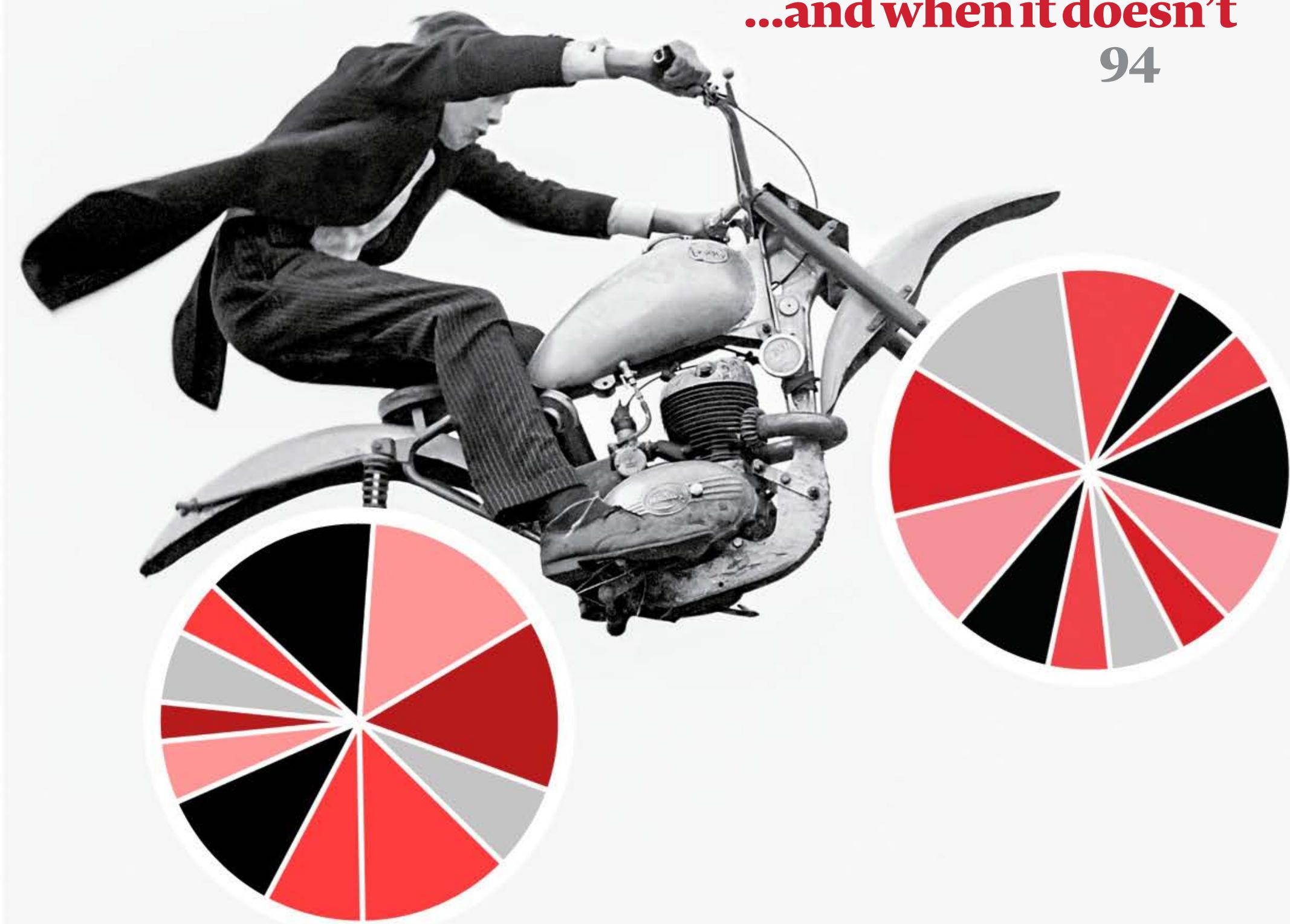
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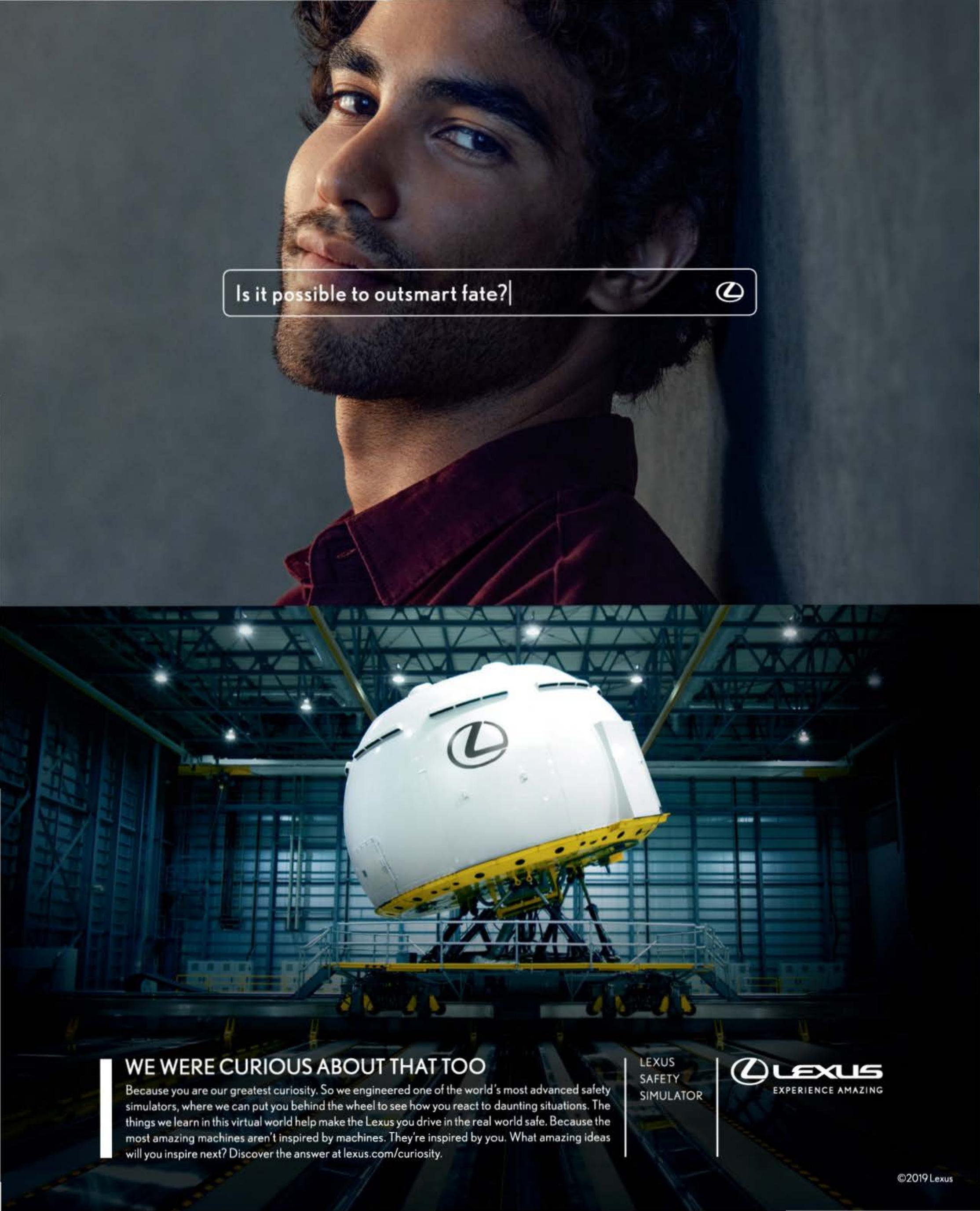
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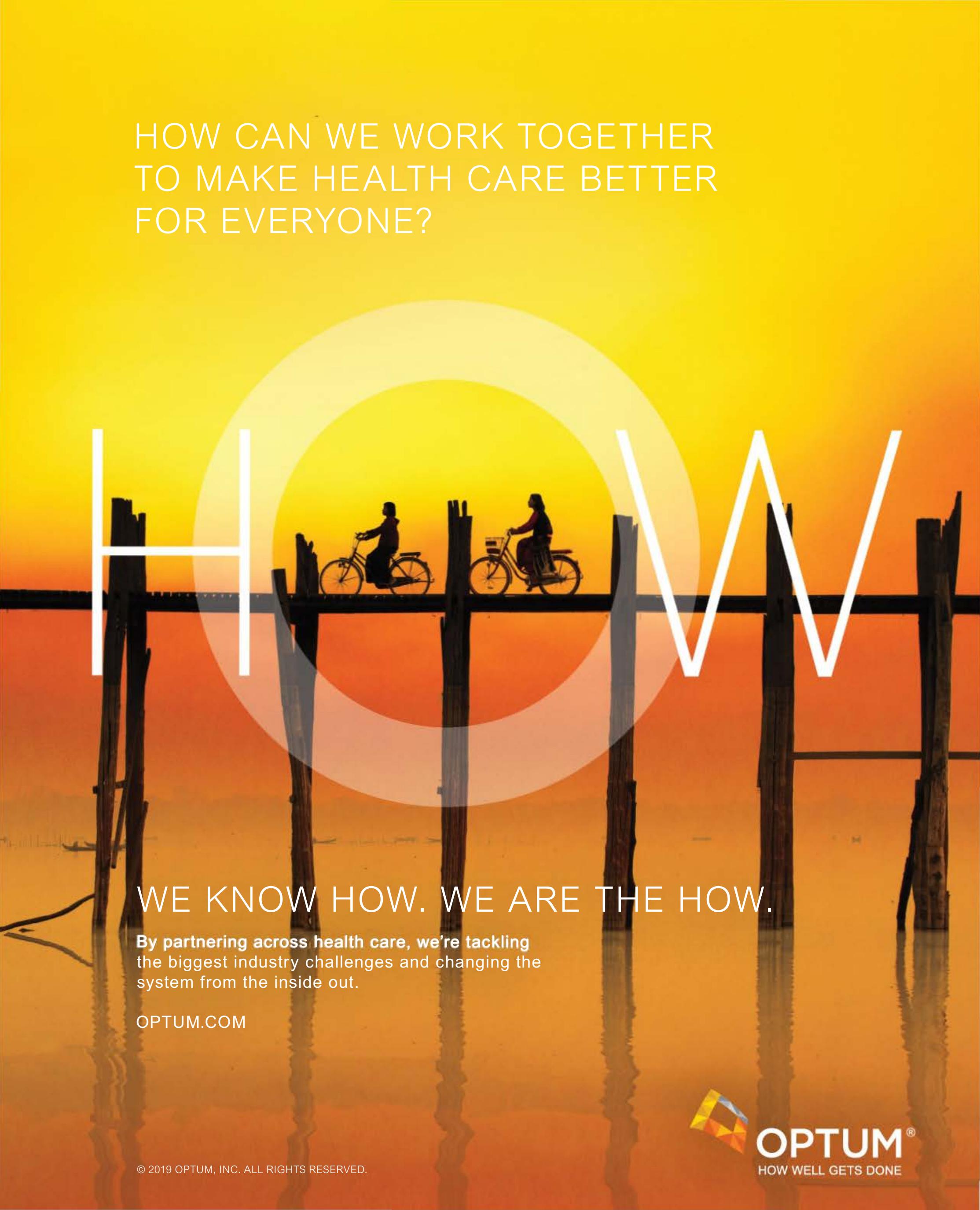
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Adi Ignatius with Emily Neville-O'Neill,
director of product management

The Real Deal on Data

CUSTOMER DATA AND analytics are an enormously potent combination. We all know the drill: The more customers you have, the more data you can collect and analyze to create ever better products that attract ever more customers. Conventional wisdom holds that this virtuous cycle confers a nearly unbeatable competitive advantage.

Not so fast, say Andrei Hagiu of the Questrom School of Business and Julian Wright of the National University of Singapore. They argue that it's a mistake to assume that the benefits of data-enabled learning are as powerful or as enduring as those of network effects, wherein the value of an offering—say, a social media platform—keeps rising as more people use it. "In most instances," they say, "people grossly overestimate the advantage that data confers." To attain the strongest competitive position, you need both data and network effects—a dual accomplishment that very few companies manage to pull off.

That doesn't mean that data alone won't help you. In fact, you can use data and analytics to build competitive defenses even without the reinforcement of network effects. Hagiu and Wright explain how in "When Data Creates Competitive Advantage...and When It Doesn't" (page 94). Indeed, the ability to improve offerings with customer data will be essential to compete. But to outperform rivals over the long haul, you need something more: You must know how to balance an organization's capabilities and use them to amplify one another.



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Contributors



Many were surprised when the United States banned exports to the Chinese tech giant Huawei, throwing the telecom sector into chaos. **Henry Farrell**, a political scientist at George Washington University, says the move shouldn't have been shocking. He believes that businesses have taken for granted the informational, logistical, and financial networks that make the international economy work. "It's a global system of connections that have been out of sight and out of mind," he says. In an article in this issue, Farrell and his coauthor seek to remedy that oversight by examining this new form of political risk.



Maryam Kouchaki was a physics major in Iran when she took a course in the social sciences. "I fell in love with the idea that you could study how people behave," she says. Now an associate professor at Northwest's Kellogg School of Management, Kouchaki studies ethics in organizational settings and is especially interested in "vicarious moral licensing," whereby people belonging to groups seen as moral feel entitled to act immorally. "I'm fascinated by how 'good' people so often do bad things," she says. In this issue she and her coauthor describe "ethical humility" and how to develop it.



Before serving as the dean of London Business School from 2009 to 2017, **Sir Andrew Likierman** held executive and nonexecutive roles in a variety of industries and in the British government. In those positions he saw at first hand the importance of judgment and observed that it is rarely identified, encouraged, and developed. "My interest in judgment stems from my experience making decisions and assisting decision makers in different environments," he says. His article in this issue draws on that experience.



Rob Markey began learning about customer lifetime value from his grandfather, who built a thriving meat-provisioning business by putting customer loyalty at the heart of every decision. A partner at Bain & Company, Markey has always been fascinated by the failure of large companies to do the same, and he has spent 30 years helping them learn to apply a small-business owner's mindset. In his article in this issue he describes new methods that managers and investors can use to better understand how customer value drives enterprise value.



As a psychologist in her early twenties, **Tatiana Plakhova** designed diagrams that charted children's social behaviors. "Just lines and dots," she explains. "Dots were kids, lines were connections." Her passion for infographics and abstractions emerged from this early work. Plakhova left psychology for a career in graphic design, in which she continues to explore the theme of social structures. "It's all about networks," she says of her art. Her illustrations in this issue are from the collection *Chaos and Structure*.

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IN THEORY

WHY BOARDS SHOULD WORRY ABOUT EXECUTIVES' OFF-THE-JOB BEHAVIOR

DUIs, traffic tickets, and other factors can raise on-the-job risks.

IN THE MID 2000S the United States was reeling from a wave of corporate scandals: Think of WorldCom, Enron, Tyco, and AIG. For Aiyesha Dey, then an assistant professor of accounting at the University of Chicago, those episodes fueled a question: Did leaders' lifestyles affect outcomes for their firms, and if so, how? "There were all these articles about how executives at those companies were throwing parties for millions of dollars," Dey recalls. So she and colleagues embarked on a series of studies linking leaders' off-the-job behavior with their actions at work.

In deciding what behaviors to focus on, the researchers drew on findings in psychology and

criminology. They settled on two: a propensity to break the law, which is tied to an overall lack of self-control and a disregard for rules, and materialism, which is associated with an insensitivity to how one's actions affect others and the environment.

Across four studies, Dey—now an associate professor at Harvard Business School—and her coauthors examined correlations between one or both of those behaviors and five on-the-job issues.

Insider trading. In their most recent paper, the researchers looked at whether executives' personal legal records—everything from traffic tickets to driving under the influence and assault—had any relation to their tendency to execute trades on the basis of confidential inside information. Using U.S. federal and state crime databases, criminal background checks, and private investigators, they identified firms that had simultaneously employed at least one executive with a record and at least one without a record during the period from 1986 to 2017. This yielded a sample of nearly 1,500 executives, including 503 CEOs. Examining executive trades of company stock, they found that those were more profitable for executives with a record than for others, suggesting that the former had made use of privileged information. The effect was greatest among executives with multiple offenses and those with serious violations (anything worse than a traffic ticket).

Could governance measures curb such activity? Many firms have “blackout” policies to deter improper trading. Because the existence of those policies is hard to determine (few companies publish data on them), the researchers used a common proxy: whether



the bulk of trades by a firm's officers occurred within 21 days after an earnings announcement (generally considered an allowable window). They compared the trades of executives with a record at companies with and without blackout policies, with sobering results: Although the policies mitigated abnormally profitable trades among traffic violators, they had no effect on the trades of serious offenders. The latter were likelier than others to trade during blackouts and to miss SEC reporting deadlines. They were also likelier to buy or sell before major announcements, such as of earnings or M&A, and in the three years before their companies went bankrupt—evidence similarly suggesting they had profited from inside information. “While strong governance can discipline minor offenders, it appears to be largely ineffective for executives with more-serious criminal infractions,” the researchers write.

All this led Dey and her coauthors to wonder: Why do boards hire—or fail to fire—executives who have broken

the law? To that end, they more closely analyzed the CEOs in their sample. It didn't appear that companies where the CEO had a record had fewer independent directors, or that the directors had legal records themselves. Nor did those CEOs generate superior returns. Noting that most committed their first offense *after* taking office, Dey says, “It could be they're not monitored as much if they came up from within the firm and are doing an OK job—not better than average, but not worse.” In informal conversations, some senior executives and directors told her, “I don't care what they did, especially if it was a long time ago.”

Fraudulent reporting. In an earlier study, Dey and her coauthors identified 109 firms that had submitted fraudulent financial statements to the SEC. Comparing those companies' CEOs with the heads of comparable firms that had clean reporting slates, they found that far more leaders in the fraud group had a legal record: 20.2%, versus just 4.6% of those in the control group.



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Firmwide reporting risk. The same study looked at whether executives other than the CEO submitted fraudulent financial statements or made unintentional reporting errors. It turned out that CEOs' legal histories had no effect on this measure—but their materialism did. Leaders with lavish personal consumption habits (the researchers used property and tax records to identify CEOs who, relative to their peers, owned unusually expensive homes, cars, or boats) ran lax operations in which reporting errors of both kinds were prevalent. This often worsened during their tenures, as they made cultural changes associated with higher fraud risk: appointing materialistic CFOs, increasing equity-based incentives, and relaxing board monitoring.

A propensity to take chances. In a study focused on banks, Dey and her coauthors found that materialistic CEOs took more risks: Their institutions had higher outstanding loans, more noninterest income (which could reflect greater trading activity), and more mortgage-backed securities (known for their riskiness) as a proportion of assets. Using a standard index composed of factors such as whether the firm had a chief risk officer, they found that banks helmed by materialistic CEOs had weaker risk management than others. And cultural indicators, such as whether other executives in the firm reaped abnormally high returns from trades during the Great Recession's bank bailouts, indicated that materialistic CEOs were likelier than others to run loose ships in this regard, too.

Corporate social responsibility. Psychologists have shown that people who prioritize material goods are less

concerned about others and less likely to engage in environmentally responsible behaviors. The researchers expected this to be true of materialistic CEOs, and they were right: Those leaders got lower overall CSR scores than other chief executives and had fewer CSR strengths and more weaknesses.

The researchers hope their findings will alert boards to the perils of ignoring red flags raised by executives' lifestyles—and of trusting that governance mechanisms will avert any potential problems. "Prior researchers have assumed that deterrence policies will have the same effect on all executives in a firm," Dey says, but this work shows that individuals have very different appetites for taking chances and breaking rules. "Simply having governance structures in place may not be enough. One size does not fit all, even within the same firm." She and her coauthors recognize that their work has looked only at downsides and that these executives might also bring unusual strengths to the table—a topic they are investigating in their current research. ☐

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 **ABOUT THE RESEARCH** "Executives' Legal Records and the Deterrent Effect of Corporate Governance" (*Contemporary Accounting Research*, forthcoming), "CEO Materialism and Corporate Social Responsibility" (*Accounting Review*, 2019), and "Executives' 'Off-the-Job' Behavior, Corporate Culture, and Financial Reporting Risk" (*Journal of Financial Economics*, 2015), all by Robert Davidson, Aiyesha Dey, and Abbie Smith; and "Bank CEO Materialism: Risk Controls, Culture and Tail Risk," by Robert M. Bushman et al. (*Journal of Accounting and Economics*, 2018)

IN PRACTICE

"Everything Is Scrutinized"

Justus O'Brien coleads Board and CEO Advisory Partners at Russell Reynolds Associates, a global leadership advisory and search firm. He recently spoke with HBR about how he and his clients assess CEO candidates' off-the-job behavior. Edited excerpts follow.

How do boards conduct due diligence on candidates' personal lives?

We urge companies to have a specialized third-party firm do a full legal background check. You need the candidate's consent, and it's not cheap—it averages \$10,000. About 85% of clients do this as a final step before making an offer; the others have an in-house process.

What typically comes up?

Past or pending legal matters. Issues with credit. Traffic violations. Restraining orders. Securities and Exchange Commission investigations. Everything is scrutinized. If you find an issue, you can ask the investigators to do a deep dive.

How do boards respond?

If something complicated or nuanced arises, we'll often put directors on a call with the investigators. Let's say the

background check on a candidate shows a DUI within the past few years. Those come up from time to time. During the ensuing board discussion, directors might discuss the DUI, determine whether there are other incidents that establish a pattern of risky behavior, and explore the candidate's judgment and truthfulness in explaining the situation.

Do boards really care about traffic violations?

Sometimes they do. A pattern of speeding violations suggests risky behavior. The investigators also pay attention to the circumstances. If someone gets several speeding tickets at 2 AM, that raises questions.

This research suggests that many violations occur after the CEO has been hired. Do companies have a way of tracking those?

Many require directors and officers to update a form each year in which they must note convictions. And when corporate executives get involved in anything criminal, it tends to become public pretty quickly.

What about #MeToo issues?

Those often aren't in the legal record, so we ask specific questions during reference checks—and we don't limit ourselves to the people whose names the candidate provides. At the end of every reference interview I ask, "Is there anything else that would cause concern?" In one case I talked with 10 references, all glowing—but when I asked that question of

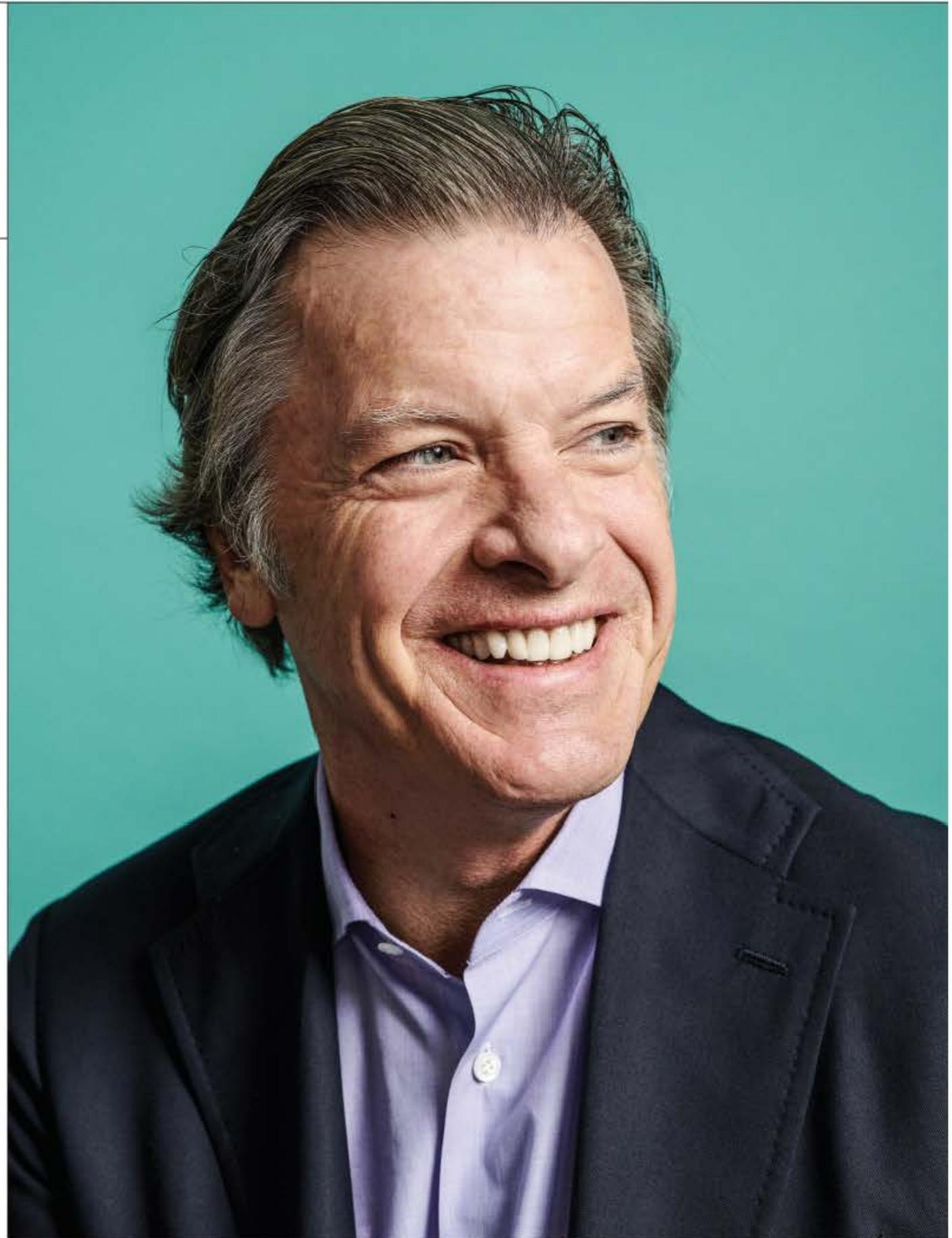
the 11th reference, what I heard was disturbing enough that I told the client, "I don't see how we can move forward with this candidate." And we didn't.

The researchers also looked at whether CEOs' ownership of fancy homes, cars, or boats affects risk-taking. Do you

worry about conspicuous consumption?

We certainly see that, but it's not necessarily a red flag. We're more concerned about egregious spending on the job—if someone spends a lot to redecorate the executive suite, say, or makes a habit of taking a large corporate aircraft even when traveling

alone. Those behaviors can be damaging to a company's culture and might give a board pause. I'll say this, though: More often than not, if executives have an extensive track record of value creation and no ethical issues come up in the background check, how they spend money probably isn't going to matter. ☺



CREATIVITY

Being Bored Can Lead to Better Results

The negative effects of boredom in the workplace have been well documented: For example, it can lead people to make mistakes, break rules, or spend company time surfing the web. A new study finds an upside: Being bored can make people more creative on subsequent tasks.

The researchers recruited 101 undergraduates and told them they'd be working on a color perception task for 30 minutes. Half were told to sort a bowl of beans by color, one at a time and using only one hand—conditions meant to maximize monotony. The other half, who served as a control group, were asked to create a piece of art. All the students were then given an idea generation task in which they were asked to list reasons someone could give for being late to a meeting. Those in the boredom group

produced more ideas, and more-creative ideas, on average, than those in the control group. A subsequent experiment involving a product-development task found that the effect isn't universal; only participants predisposed to divergent thinking (as measured by qualities such as openness to experience and orientation toward learning goals) benefited from their induced boredom by generating more-creative ideas.

Being bored can drive people to seek new stimuli and challenges, the researchers say. "Our findings suggest that boredom could potentially be an untapped source of human motivation," they write. "If bored employees' desire for variety and novelty can be enhanced and shaped by their managers, having bored employees may not be entirely negative."

 **ABOUT THE RESEARCH** "Why Being Bored Might Not Be a Bad Thing After All," by Guihyun Park, Beng-Chong Lim, and Hui Si Oh (Academy of Management Discoveries, 2019)



MARKETING

When Consumers Consider Dissimilar Options, They're Less Likely to Buy

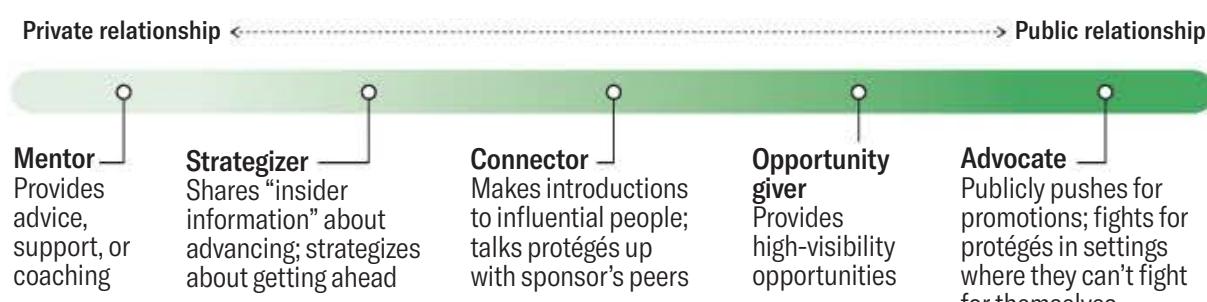
It's well-known that when people are contemplating a purchase, thinking about other ways they could spend their money decreases the chances they'll follow through. But most research has focused on alternatives that are similar to the target item. What about when the alternatives are different?

Across 10 studies involving items ranging from color printers to movie tickets and massages, considering dissimilar options (wireless speakers and button-down shirts, say) reduced purchase intent for the target item far more than considering similar options (wireless speakers and headphones) did. This held true for both utilitarian and hedonic items and regardless of whether the alternatives were generated by the consumer or suggested by the marketer.

RELATIONSHIPS

The Many Faces of Sponsorship

A sponsor can be critical to advancement, especially for women—yet many executives are wary of expending too much political capital in the role. Regarding sponsorship as a spectrum of activities can break through that wariness and help both parties clarify their goals for the relationship.



Source: Herminia Ibarra



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WHAT'S IN A NAME?

Eponymous start-ups grow more slowly than similarly profitable ventures that aren't named after the company's founder.

"Choosing Between Growth and Glory," by Sharon Belenzon, Aaron K. Chatterji, and Brendan Daley

It happens, the researchers say, because the decision to buy a given product rests in part on the importance of the goal that product would serve—and considering a dissimilar product activates a competing goal, which may win out. "Although calling any attention to other products is shown to reduce purchase intention for a target option, carefully selecting which products to draw attention to can help minimize negative effects," the researchers write. "Any alternatives present in the choice environment should serve the same goal as the target option."

 **ABOUT THE RESEARCH** "Apples, Oranges, and Erasers: The Effect of Considering Similar Versus Dissimilar Alternatives on Purchase Decisions," by Elizabeth M.S. Friedman, Jennifer Savary, and Ravi Dhar (*Journal of Consumer Research*, 2018)

DECISION MAKING

Experience Isn't Always an Asset

It stands to reason that experience boosts performance. But a new study finds an exception: When presented with negative information about a decision they've already made and acted on, more-experienced people are likelier than others to stick to their guns rather than pivot to a better approach.

The researchers examined the impact on cardiologists of an FDA warning about a particular kind of coronary stent. After the warning was issued, use of the stent dropped by 56% overall—but

the more experience a doctor had, the more likely he or she was to continue using the device. Subsequent lab experiments confirmed this effect. In one, for instance, participants played the role of an executive deciding which of two company divisions should receive \$5 million in R&D funds. After making their decisions, half the participants were primed to perceive themselves as experts, and all were given earnings data showing that the division they'd chosen had underperformed. The participants were then asked to allocate an additional \$10 million between the two divisions. Those who felt like experts reinvested more in the underperforming division than the others did.

When sharing information that should cause people to update their

beliefs, "managers must be prepared to address experienced individuals differently," the researchers write. "Interventions could include...engaging them in perspective-taking exercises to clarify how a less experienced person might understand the situation better. Experienced individuals may need to be encouraged to directly pursue additional disconfirming information. As a way to provide learning, managers could share stories of experienced individuals who changed their perspective."

 **ABOUT THE RESEARCH** "Maintaining Beliefs in the Face of Negative News: The Moderating Role of Experience," by Bradley R. Staats, Diwas S. KC, and Francesca Gino (*Management Science*, 2018)



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MOTIVATION

Hold That Award

Organizations commonly use awards to incentivize desired behaviors, sometimes announcing prizes *prospectively* for anyone who meets certain criteria going forward, other times bestowing them *retrospectively*, as a surprise. Researchers set out to compare the effectiveness of the two approaches—with sobering results.

The research team conducted a field experiment across 14 school districts in California. It identified 15,329 middle- and high-school students who had achieved perfect attendance in at least one month in the fall and divided them into three groups. The following January, students in the first group received a letter saying they would earn an award if they missed no days in February. Students in the second group got a letter saying they had earned an award for perfect attendance during a fall month. The third group served as a control. Attendance records for February showed that students in the prospective group had the same absentee rate as students in the control group—and students in the retrospective group missed 8% *more* days of school than everyone else.

A follow-up experiment provided an explanation for these findings, which took the researchers by surprise. The use of awards may have inadvertently indicated that the desired behavior—perfect attendance—was neither the norm nor really expected, and the retrospective awards signaled that recipients had already exceeded expectations, thus giving them license to miss



more school. “[Our results] provide an important cautionary note for the myriad organizations and leaders using awards,” the researchers write. “Awards are relatively cheap, easy to implement in institutions, and appear harmless. We find that [they] can have more complicated consequences than might be intuitively expected.”



ABOUT THE RESEARCH “*The Demotivating Effect (and Unintended Message) of Awards*,” by Carly D. Robinson et al. (*Organizational Behavior and Human Decision Processes*, forthcoming)

RETAIL

The Costs of Last-Minute Scheduling

Labor is a significant part of the cost structure of service businesses, and especially in retail and food services, having just enough (but not too many) employees on hand is key to balancing customer service and profitability. As companies try to strike that balance,

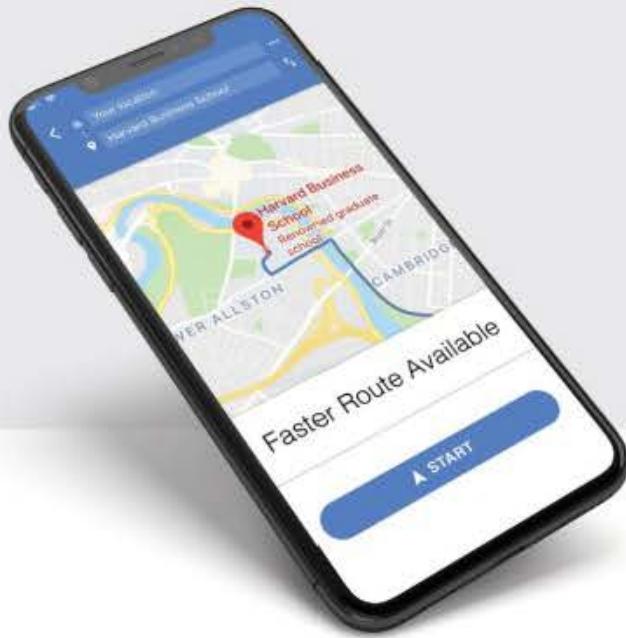
however, employees often suffer: Many firms use “just in time” staffing models that make schedules unpredictable, disrupting child care needs, commuting patterns, and personal lives. After critical media coverage of the practice, several cities and one state (Oregon) passed laws requiring firms to give workers advance notice of their schedules.

A new study finds another reason to avoid last-minute scheduling: It hurts the bottom line. Researchers studied 1.4 million transactions that took place at 25 locations of a casual restaurant chain during nine months in 2016. The data included information on which server handled each transaction and how much advance notice he or she had been given about the day’s schedule. The chain generally set schedules a week in advance, but it also used “short notice” scheduling (asking people a couple of days ahead of time to work different hours) and “real time” scheduling (changing people’s hours during the shift in question, typically by having them stay longer).

Short-notice changes had no effect on servers’ transactions, but real-time changes hurt revenue: Checks for parties handled by servers who’d been asked to

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THE BLOCKCHAIN BUBBLE

Investors react positively right after public firms disclose potential forays into blockchain technology—but the gains are mostly reversed over the subsequent 30 days.

“Riding the Blockchain Mania: Public Firms’ Speculative 8-K Disclosures,” by Stephanie F. Cheng et al.

stay later dropped by 4.4%, on average. The researchers believe that occurred because servers reduced the effort spent on upselling and cross-selling additional menu items (the research team controlled for worker fatigue). The drop was more pronounced on weekends, and lesser-skilled servers had the sharpest declines. “A shift away from the heavy use of real-time schedules...not only creates more predictable work schedules...but also can improve the expected profit by up to 1%,” the researchers estimate.

 **ABOUT THE RESEARCH** “Call to Duty: Just-in-Time Scheduling in a Restaurant Chain,” by Masoud Kamalahmadi, Qiuping Yu, and Yong-Pin Zhou (working paper)

COMMUNICATION

Nice Negotiators Finish Last

When entering into a bargaining situation, people must make a fundamental choice: whether to act friendly or tough, other things being equal. The existing body of research is of little help, offering conflicting advice and failing to isolate communication styles from economic bargaining behaviors—but now a series of experiments provides some guidance.

In a field experiment, the researchers sent emails from a fictitious gender-neutral buyer to 775 people looking to sell smartphones via Craigslist. In each, “Riley Johnson” offered to buy the phone for 80% of the asking price. Half the emails took a friendly tone

(for example, “Please let me know by tomorrow if the price is OK for you—and thank you so much for your time and consideration”), and half took a forceful one (“Let me know by tomorrow if the price is OK for you or else I’ll move on”). Sellers were more likely to accept the initial offer when the tone was firm and to counteroffer when the tone was friendly. The firm messages got more outright rejections, but the friendly ones were more likely to be ignored—the least-desirable outcome, because it leaves no room to try again. And among sellers willing to grant a discount, the amount was larger when “Riley’s” tone was firm than when it was friendly.

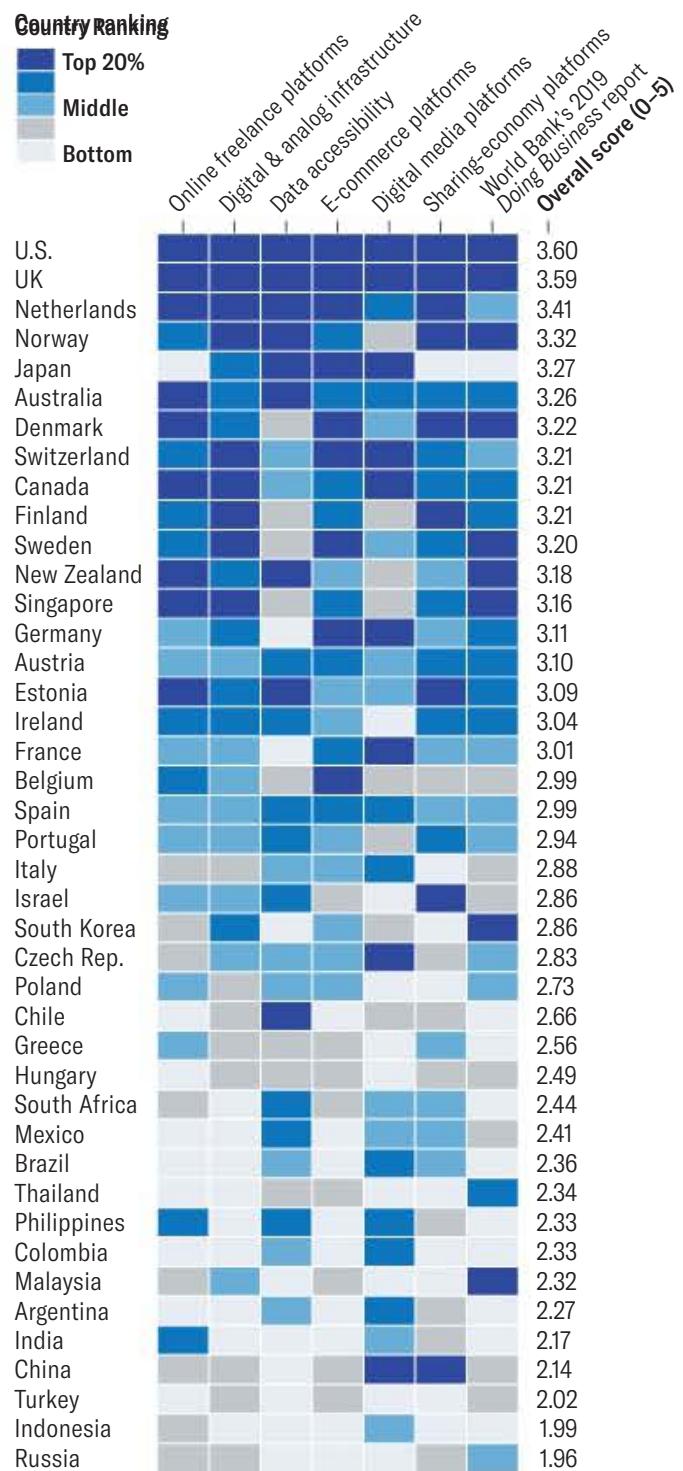
In a subsequent lab experiment involving 140 participants negotiating a purchase online, warm and friendly negotiators paid 15% more, on average, for the same item than tough and firm negotiators did. That happened because sellers made more-aggressive initial counteroffers to, and won more concessions from, friendly-sounding buyers, perhaps because they saw them as being low in dominance. And more time was needed to reach an agreement when the buyer’s tone was friendly. “The conflict between coming across as warm and friendly versus tough and firm is a common struggle,” the researchers write. “The evidence suggests that negotiators could save effort, achieve better economic outcomes, and experience greater satisfaction by toughening up.”

 **ABOUT THE RESEARCH** “Communicating with Warmth in Distributive Negotiations Is Surprisingly Counterproductive,” by Martha Jeong et al. (Management Science, forthcoming)

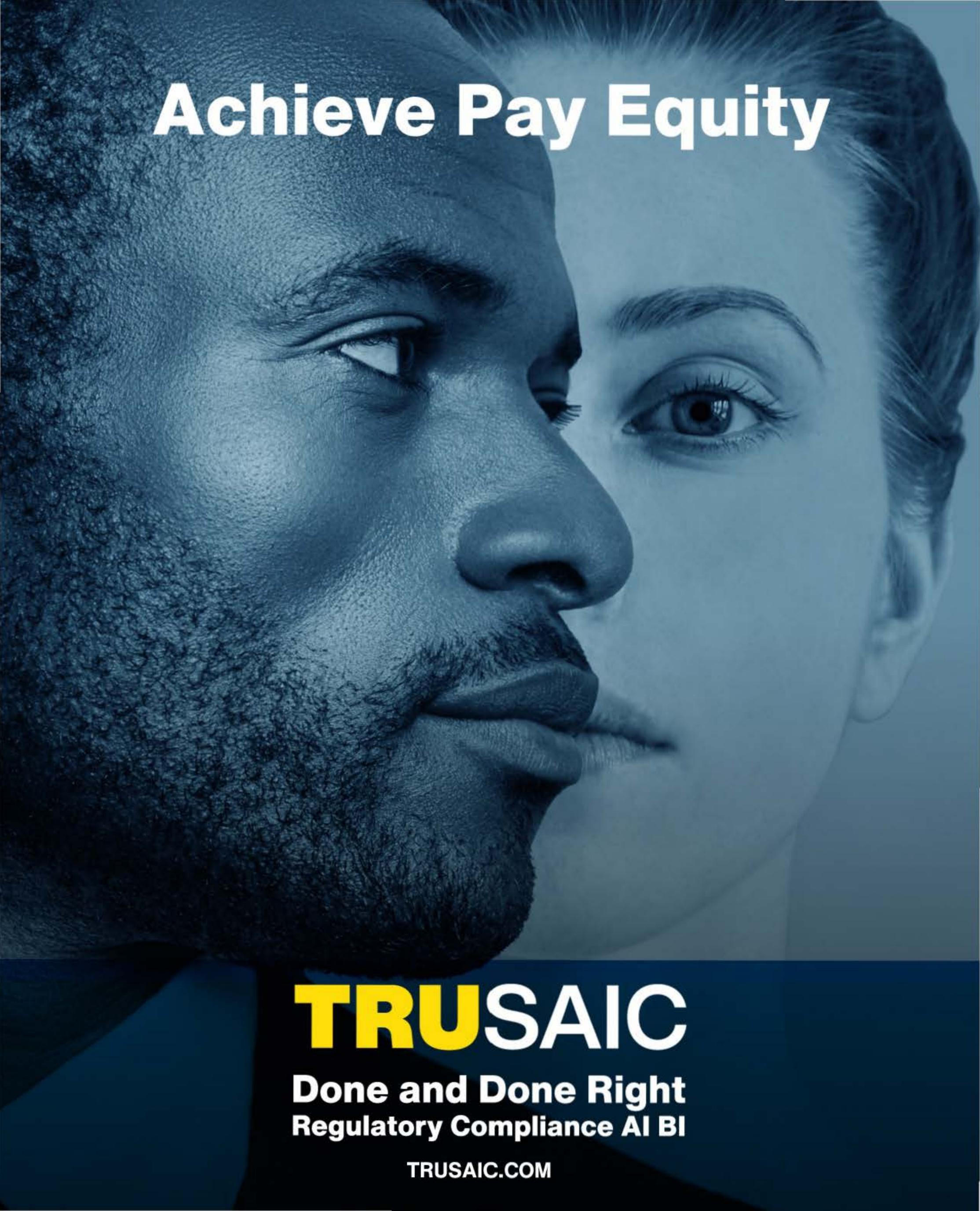
GLOBAL BUSINESS

Where Does Digital Thrive?

The scorecard below shows how 42 countries stack up on various indicators of the ease—or difficulty—of doing business for companies with digital platforms at their core.



Source: Digital Planet research initiative, The Fletcher School at Tufts University



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GIFT GIVING

Cash Is Still King

People increasingly exchange gifts in digital form, and it's easy to see why. Digital transactions are convenient—they can be conducted even among physically distant parties—and they lessen concerns that items will be damaged or lost. Money is exchanged digitally too, thanks to peer-to-peer payment platforms that allow users to "friend" one another and to personalize their transactions by including messages and emojis. But studies have shown that consumers who are buying items for themselves generally value physical goods over digital ones, leading a group of researchers to wonder: Is there a similar downside to digital exchanges?

Across several studies, results showed that the answer is yes. Recipients felt closer to givers after receiving physical goods than after receiving digital ones, because they perceived the givers as having greater psychological ownership of the physical items. This was true of undergraduate students recalling a time when they were given money by a friend, participants imagining that a colleague was repaying them for dinner, and subjects imagining that a friend was giving them either a hardcover book or a Kindle edition. There was an exception: When participants were told that their friend had borrowed the book (whether hardcover or Kindle) from the library, the form of the gift had no effect on how close the recipient felt to the giver. This finding aligns with prior research showing that when



people don't actually own or expect to own an item, recipients perceive no appreciable difference in the giver's psychological ownership of the physical and digital forms of it.

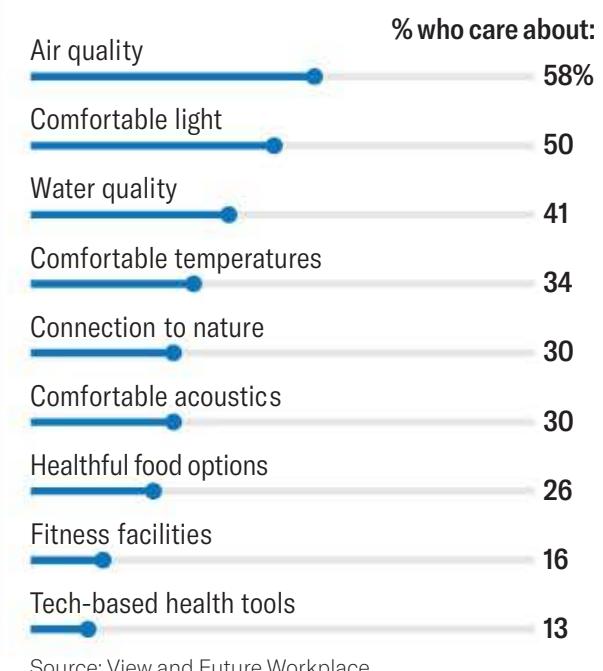
"This work has implications for marketers and consumers," the researchers write. "Organizations seeking to foster feelings of connectedness in order to encourage affiliation or generosity (e.g. universities sending acceptance letters with the hopes of matriculation or charitable organizations soliciting donations) could opt to send physical materials. At the same time, consumers can strategically choose to share physical or digital goods or money with other consumers or service providers depending on their interpersonal objectives."

 **ABOUT THE RESEARCH** "Disconnected in a Digital World: How Receiving Digital Versus Physical Goods Affects Interpersonal Closeness," by Anne Wilson, Shelle Santana, and Neeru Paharia (working paper)

WORKPLACE

The Wellness Factors Employees Actually Value

Some 80% of large U.S. firms offer some sort of wellness program—but are they providing what employees want? A survey of 1,600 North American workers shows that basic comfort matters more than on-site gyms or tech-based health tools.





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The University of Warwick's **Andrew Oswald** and his team compared survey data on the life satisfaction of more than 900,000 citizens of 27 European countries from 1980 to 2011 with data on annual advertising spending in those nations over the same period. The researchers found an inverse connection between the two. The higher a country's ad spend was in one year, the less satisfied its citizens were a year or two later. **Their conclusion:**

Advertising Makes Us Unhappy



Professor Oswald, DEFEND YOUR RESEARCH

OSWALD: We did find a significant negative relationship. When you look at changes in national happiness each year and changes in ad spending that year or a few years earlier—and you hold other factors like GDP and unemployment constant—there is a link. This suggests that when advertisers pour money into a country, the result is diminished well-being for the people living there.

HBR: What prompted you to investigate this? Colleagues and I have been studying human happiness for 30 years now, and recently my focus turned to national happiness. What are the characteristics of a happy country? What are the forces that mold one? What explains the ups and downs? I'd never looked at advertising before, but I met a researcher who was collecting data on it

for a different reason, and it seemed to me that we should combine forces. Like a lot of people in Western society, I can't help noticing the increasing amount of ads we're bombarded with. For me, it was natural to wonder whether it might create dissatisfaction in our culture: How is your happiness and mine shaped by what we see, hear, and read? I think it's rather intuitive that lots of ads would make us less happy. In a sense they're trying to generate dissatisfaction—stirring up your desires so that you spend more on goods and services to ease that feeling. I appreciate, of course, that the world's corporate advertisers and marketing firms won't like hearing me say that.

Yeah, I don't think they'd agree that that is the goal of advertising. Their line is that advertising is trying to expose the public to new and exciting things to buy, and their task is to simply provide information, and in that way they raise human well-being. But the alternative argument, which goes back to Thorstein Veblen and others, is that exposing people to a lot of advertising raises their aspirations—and makes them feel that their own lives, achievements, belongings, and experiences are inadequate. This study supports the negative view, not the positive one.

So ads make us want what we don't or can't have? The idea here is a very old one: Before I can decide how happy I am, I have to look over my shoulder, consciously or subconsciously, and see how other people are doing. Many of my feelings about my income, my car, and my house are molded by my next-door neighbor's income, car, and house. That's just part of being human: worrying about relative status. But we know from lots of research that making social comparisons can be harmful to us emotionally, and advertising prompts us to measure ourselves against others. If I see an ad for a fancy new car, it makes me think about

my ordinary one, which might make me feel bad. If I see this \$10,000 watch and then look at my watch, which I probably paid about \$150 for, I might think, "Maybe there's something wrong with me." And of course nations are just agglomerations of individuals. Now, in this paper we don't prove that the dissatisfaction is coming from relative comparisons, but we suspect that's what happening.

How do you know advertising is actually causing us to be unhappy? That this isn't correlational? First, we controlled for lots of other influences on happiness. Second, we looked at increases or drops in advertising in a given year and showed that they successfully predicted a rise or fall in national happiness in ensuing years. Third, we did lots of statistical checks to make sure the empirical linkages were strong. Fourth, people sometimes forget that causality always requires there to be a correlation somewhere. But your question is constantly in my mind as a researcher.

But doesn't this apply just to materialistic people? A lot of people understand that you can't buy happiness. Yes, some might see that watch ad and say, "Why are men buying \$10,000 watches when they carry a mobile phone with the time on it?" Or respond to a car ad by congratulating themselves for not buying a gas-guzzler that's expensive to service and destroys the environment. Our research shows that the really big influences on human happiness are things like health, intimate relationships, being employed, social safety nets, not being in midlife (there really is a crisis for many), and so on. Buying that watch or car can help make us feel slightly happier, but deep down it has a keeping-up-with-the-Joneses status effect. And when everybody buys the same thing the effect is nullified. That's partly why advertising hurts group happiness; there's only so much status to go around.

This reminds me of how social media makes us miserable because we compare ourselves with influencers. Yes. There is research bubbling up through the journals about this. For example, one longitudinal study from 2017 found that using Facebook was associated with compromised well-being. My hunch is that over the next few decades this will become a really serious policy issue.

Has any other research linked advertising with reduced well-being? The short answer is no. Although there's some interesting literature on how children are affected by advertising in terms of their eating and health, there is surprisingly little on this topic. We don't know of a paper close to ours. Perhaps there is one, but nobody's written to us about it.

How did you measure national advertising and national happiness? The advertising metric is straightforward accounting. We have data on the amount spent in different countries on different forms of ads: newspaper, radio, TV, and so on. Measuring happiness or life satisfaction is more complicated, but we now know how to do so reliably. In this study we have a large sample, close to a million people, and we decided to choose one of the most long-standing simple measures of human well-being, which is the survey question "How satisfied are you with your life?" People used a scale to answer it, and then we aggregated those answers for each country.

And you're sure the lower life satisfaction isn't due to the other things that you just mentioned affect it, like age and marital status? Those are among the things we controlled for in addition to the unemployment rate and GDP. We also controlled for the underlying starting levels of happiness and advertising in countries, because

we wanted to do a fair comparison with the same baseline. And year by year we controlled for what you might call shocks—think of oil-price shocks—that have a common set of consequences across the whole of Europe.

How big is the negative effect of ads? Our analysis shows that if you doubled advertising spending, it would result in a 3% drop in life satisfaction. That's about half the drop in life satisfaction you'd see in a person who had gotten divorced or about one-third the drop you'd see in someone who'd become unemployed. We have a lot of experience working out how people are affected by bad life events, and advertising has sizable consequences even when compared with them.

Is there anything we can do about this? It's worth wondering whether Western society has done the right thing by allowing large levels of advertising, almost unregulated, as though it were inevitable. Given these patterns, it seems like something we might want to think about. But we haven't got any political punch line in this paper. We don't recommend any policy.

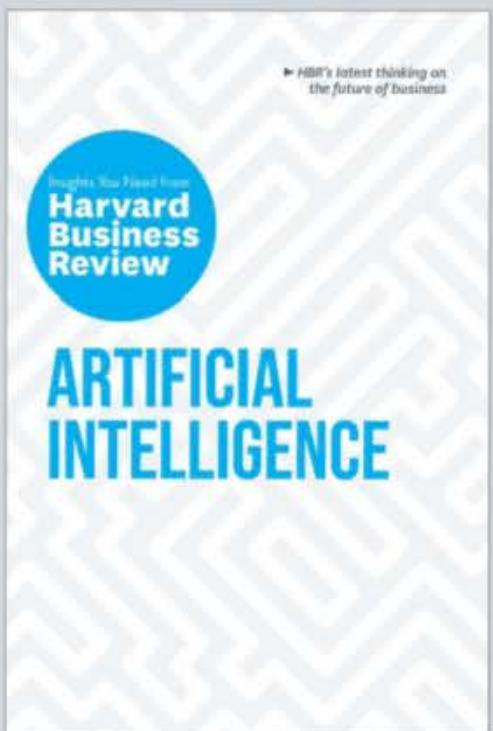
What if everyone just downloaded ad blockers for the web and fast-forwarded through commercials on TV? Would that help? I try to be an evenhanded statistical researcher, but I can see how you might look at our study and think, "Maybe it's sensible for me to opt out of some of these ads."

Interview by **Nicole Torres**
HBR Reprint F2001B



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HOW I DID IT



THE FOUNDER OF CHEWY.COM ON FINDING THE FINANCING TO ACHIEVE SCALE

by Ryan Cohen

MOST PEOPLE ASSUME that the high point of my professional career came on April 18, 2017, when the owners of PetSmart paid \$3.35 billion for Chewy.com, the pet retailer I had cofounded six years earlier. No doubt, that day was incredible. It represented the culmination of a dream and a tremendous amount of work. But believe it or not, another handshake—another deal—mattered even more to me.



We intended to build a best-in-class, customer-obsessed pet retailer—and to leave everyone who'd backed us a winner.

That one happened on September 26, 2013. I had launched Chewy two years earlier with Michael Day, using our own cash and small loans, but my vision was to build a large business, and I knew that significant capital would be required to finance the growth. We approached dozens of VC firms—I even flew out to Silicon Valley from our South Florida headquarters and went door-to-door on Sand Hill Road explaining how Chewy would succeed by delighting customers and running an ultra-efficient operation. But everyone turned us down.

Larry Cheng at Volition Capital was one of the people we pitched our company to. We first met him in 2012; he was en route to Disney World with his family and agreed to make a quick stop at our office. I remember that he asked me, “Who’s going to take this company to \$100 million in sales?” I was 26 and probably looked even younger, but I confidently answered, “I am.” He didn’t invest.

He followed up with us about six months later, though. We’d beaten the sales projections that we’d previously given him, and he was impressed. A few days later he signed off on a \$15 million investment in Chewy. The satisfaction of that victory was even greater than the pride I felt following the eventual multibillion-dollar sale. After two years of building Chewy—and more than 100 conversations with VCs that went nowhere—I’d finally found someone who believed in me and our business model. Larry had validated our idea.

From that point on, the mission was larger. I was even more committed to making Chewy an industry leader, because it was no longer just our own

money on the line. Larry had gone out on a limb for us. I felt that responsibility.

I approached every subsequent round of financing, including PetSmart’s acquisition, in a similar way—by under-promising and overdelivering on sales. Our mission was straightforward: to build a best-in-class, customer-obsessed pet retailer. We also wanted to leave everyone who’d backed us a winner.

AN EARLY PIVOT

I’ve been working since I was 13, when I started building websites for family members and local businesses. From there I moved into affiliate marketing. I met Michael in an online chat room discussing website design and computer programming. We hit it off immediately and started talking about collaborating on a business.

I’d always wanted to build an e-commerce company, so we settled on what we thought was a terrific idea in an industry ripe for disruption: online jewelry sales. We built the website, set up the delivery systems, bought the inventory, and even put a safe in the office to store it.

But about a week before our scheduled launch, I had a revelation. I was in a local pet store with my toy poodle, Tylee, asking the owner about the most healthful food I could buy for her. That’s when it hit me: I was getting into the wrong business. I didn’t care much about jewelry, but like many dog and cat parents I knew, I was passionate about what I bought for Tylee. The pet industry was big and growing, moving from mass market to premium. It was clear that the opportunity was huge.

So although we were only a week away from launching the jewelry business, we pivoted. We sold all the rings, necklaces, and bracelets—and the safe—and started learning everything we could about the pet industry. We built a new website. We found a local distributor and partnered with a third-party logistics company nearby. In June of 2011 we launched. In just three months we went from my epiphany at the pet store to running a pet-supplies business.

People sometimes ask if I worried about following in the footsteps of Pets.com, in 2000 one of the highest-profile failures of the dot-com bubble. I didn’t. For one thing, I was 15 when that company declared bankruptcy, so I wasn’t very familiar with the story. Second, Pets.com existed at a time when most people had dial-up internet and weren’t comfortable making purchases online. By the time we started, e-commerce was second nature for most consumers.

I also got questions about Amazon, and, of course, it was a real competitor. It had an incredible infrastructure, established relationships with customers and suppliers, and endless capital. But I knew that other companies, including Zappos (later acquired by Amazon) and Wayfair, had found success in specific product categories. Their secret was offering a differentiated customer experience. I thought we could do something similar in the pet space.

With limited resources, we served as our own C-suite. I was CEO, Michael was CTO, and my longtime friend Alan Attal was COO. We knew that superior customer service had to be one of our core competencies if we wanted to deliver the

Ryan Cohen with his toy poodle, Tylee, in Miami

same experience I'd had at the neighborhood pet store, so our first priority was building a team to work the phones, live chat, and emails in our call center so that we could stop doing all that ourselves.

From the outset we reinvested all our cash from operations in the business, but eventually we needed the larger pools of money that VC firms offered. After months of searching, we finally found Larry and Volition.

SCALING UP

We closed the series A financing round on October 24, 2013, and I'll never forget the moment the money hit our bank account. Although we had signed the term sheet, part of me was still skeptical that it was all going to work out. But when I saw the transfer confirmation, it became real.

With that money we could invest in developing the systems, technology, and teams needed to scale up. We could also bring stocking and shipping in-house. We already recognized that if we wanted to create a multibillion-dollar business, fulfillment had to become another core competency.

Consultants had told us that it would take a year and a half to build a warehouse from scratch. But with 300% growth year over year, we didn't have that much time. The logistics company handling fulfillment couldn't keep up, so the Chewy customer experience had begun to deteriorate. We needed more control, and fast. We knew we had to make the transition within a few months.

We started scouting potential sites in February of 2014, focusing on the northeastern United States because



so much of the country's population lives there. The location we chose—Mechanicsburg, Pennsylvania—would allow us to provide overnight delivery to customers in the densely populated tristate area of Connecticut, New York, and New Jersey. By that summer we'd opened a 400,000-square-foot facility full of bags and cans of dog and cat food, carriers and cages, leashes, litter boxes, toys, and treats.

Although we managed to get up and running in less than six months, it certainly wasn't easy. Everything that could go wrong did. We couldn't hire people to work in the warehouse fast enough. When we were finally staffed,

the scanner guns would stop working, or the Wi-Fi or warehouse management system would go out. We were tackling issue after issue 24/7 until we worked out all the kinks.

We also focused heavily on marketing. From day one, we invested almost exclusively in direct response ads, so every dollar spent could be tracked—no Pets.com-style Super Bowl commercials for us. We expanded by investing in the team and processes to effectively acquire the right customers at the right cost. Our governor of growth was free cash flow. Our sales more than doubled from \$205 million in 2014 to \$423 million in 2015.

Our new hires played a big role in scaling up the company. I realized early on that I'd need to use my time efficiently and focus on hiring. At first recruiting was a challenge. Alan and I spent countless hours reaching out to candidates on LinkedIn, explaining how quickly the company was growing and describing what we intended to build, but 98% of them didn't bother to respond.

Surprisingly, that turned out to be a useful filter. The 2% who did write back were true believers, team players, and business builders who were excited for the opportunity. They all had tremendous heart, fire in their bellies, and a will to win. We hired for passion. Many people quit stable jobs and relocated with their families from across the country to join us. It was a tremendous sacrifice that we never took lightly.

Ultimately we raised six rounds of financing totaling more than \$350 million from T. Rowe Price, BlackRock, Greenspring, Lone Pine, Verlinvest, and the investment bank Allen & Company.

THE NEXT LEVEL

Our revenue was \$901 million in 2016 and growing 100% year over year. That got us thinking about an IPO for our next round of financing. We had about 7,000 employees and six warehouses, with plans to add another two in the next 12 months. From an operational and strategic perspective, the company was strong.

As we prepped for the IPO, Petco, one of the biggest U.S. pet retailers, approached us about a merger. It

couldn't meet our terms, so we shook hands and parted ways.

In early 2017 PetSmart, Petco's primary brick-and-mortar rival, also reached out. I received an email from Raymond Svider, a partner and the chairman of BC Partners, the private equity group that had completed its acquisition of PetSmart in March of 2015. He said he was interested in buying Chewy and wanted to talk. We had met previously but didn't know each other well.

PetSmart was one of our top competitors, so we proceeded carefully. I explained that we were preparing for an IPO, so we expected a certain price in an all-cash, public-style deal. In view of the competitive dynamics, we weren't going to give away our proprietary information and start a lengthy due-diligence process. I told Svider that if he wanted to make the acquisition, he would need to do it quickly. To his credit, he did. In April of 2017 we signed an agreement to sell the company for \$3.35 billion. It was the largest e-commerce acquisition in history.

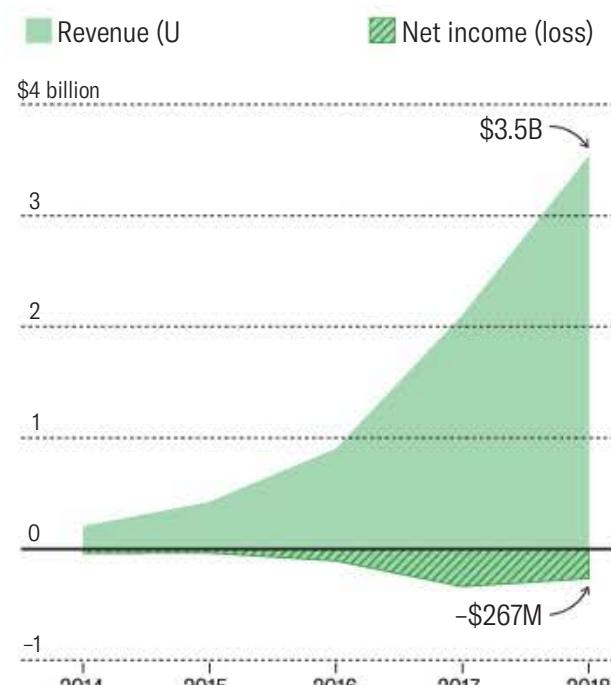
Our investors were happy too. The early-stage ones made huge gains, and the later-stage ones earned significant money. Investing in Chewy had made a lot of careers, and I'm proud of that. Those investors put their trust in me and my vision, and I repaid them with returns. The same would soon be true for BC Partners and PetSmart.

Chewy's revenues continued to rise post-acquisition, hitting \$3.5 billion in 2018, while its losses narrowed to \$267 million. In June of 2019 PetSmart spun Chewy off into a publicly traded company at a valuation near \$9 billion, close to three times the sale price only two years before.

FACTS & FINANCIALS

Chewy.com

Founded: 2011
Headquarters: Dania Beach, Florida
No. of employees: 9,833



Source: Chewy.com

I left the company in March of 2018. It wasn't an easy decision, but I felt I had done all I had set out to do. The company was sound, the foundation strong, and the vision set. But I was no longer in full control. And I didn't want a boss. I'm a business builder, not a manager. My work was complete.

When I think back to why raising the money to help grow the business was one of the best moments of my life, I realize it's because the journey was far more exciting than getting to the finish line. I relished the challenges of disrupting an entire industry and trying to delight customers to a degree that had never been achieved before. The excitement I felt from putting together a world-class team of employees and investors, succeeding against all odds, and building a multibillion-dollar retail leader from nothing was unequivocally the greatest of my career. ☺

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Spotlight

THE LOYALTY ECONOMY



The Sydney Morning Herald/Getty Images

Beatles fans,
Sydney, 1964

Beatles fans
outside
Buckingham
Palace, 1965





Spotlight



Rob Markey
Partner, Bain & Company

ARE YOU UNDERVALUING YOUR CUSTOMERS?

It's time to start measuring and managing their worth.



THE TRUE PURPOSE of a business, Peter Drucker said, is to create and keep customers. Most managers understand this, but few behave as if they do. Under relentless earnings pressure, they often feel cornered, obliged to produce quick profits by compromising product quality, trimming services, imposing onerous fees, and otherwise shortchanging their customers. This short-termism erodes loyalty, reducing the value customers create for the firm.

Spotlight

It should not be this way. Earning customer loyalty is firmly in the interest of both shareholders and management. My research shows that loyalty leaders—companies at the top of their industries in Net Promoter Scores or satisfaction rankings for three or more years—grow revenues roughly 2.5 times as fast as their industry peers and deliver two to five times the shareholder returns over the next 10 years. Yet companies and investors continue to prioritize quarterly earnings over customer relationships, for three main reasons: Public-company financial disclosure rules and corporate accounting practices require little to no reporting on customer value; most firms lack the capabilities needed for managing it; and organizations' traditional structure puts functional priorities ahead of customer needs.

The roots of the problem can be traced to the 1890s and the birth of modern financial accounting, but the situation worsened in 1970, when Milton Friedman introduced the age of shareholder primacy, which held that companies exist to maximize shareholder value. Since then, companies have perfected sophisticated systems and practices for delivering on that promise. A decade ago, Roger Martin, then dean

of the University of Toronto's Rotman School of Management, inverted this notion. He espoused a new “age of customer capitalism” in which companies that put customers first would create even greater value for shareholders. He was not taking issue with Friedman’s basic assertion but pointing out that its practical application had gone awry. The blind pursuit of shareholder value had devolved primarily into managing investor earnings expectations.

Few acted on Martin’s vision. Even if leaders agreed with his premise, they reasonably worried that prioritizing customers could threaten short-term earnings, causing investors to rebel. Further, the technologies, operational skills, and performance measurement systems needed were nascent at best. Pursuing such a strategy was generally a risky proposition a decade ago. The time was not right.

Now, though, the missing pieces are falling into place: the emergence of new accounting tools and technologies, a fundamental shift in the way companies organize work, and, perhaps most critically, the realization among at least some investors that customers are the ultimate source of corporate value. CEOs themselves are beginning to acknowledge this idea. In August 2019, the Business

Roundtable, representing many of the largest U.S. firms, issued a statement on the purpose of the corporation in which members put delivering value to customers, among other goals, on equal ground with creating shareholder value.

In working with hundreds of companies in a range of industries over 30 years, I have identified four broad strategies that loyalty leaders rely on for superior performance. Those leaders create systems for measuring customer value and invest in the necessary enabling technology, use design thinking methods to build customer loyalty, organize the business around customer needs, and engage the organization and stakeholders—employees, board members, investors—in the transformation. Before we examine each one, let’s take a closer look at customer value.

ACCOUNTING FOR CUSTOMERS

“Customer value” has several definitions. I use the term to mean the total lifetime value of a company’s customer base. Companies can increase this value by acquiring more customers, earning more business from existing ones, retaining them longer, making their experience simpler (and often less expensive to deliver) through digital improvements,

IDEA IN BRIEF

THE PROBLEM

Leaders recognize that they should manage their businesses to maximize the value of the customer base. But too often, earnings pressure results in cost-cutting measures that hurt customers.

THE APPROACH

Smart companies use new models, technologies, and marketing metrics to increase the number of profitable customers, boost retention, and maximize purchases.

A NEW STANDARD

Given the importance of customer value, leaders should track it as rigorously as they track other key assets. And they must report on it in formats that allow investors to make informed judgements.



Loyalty leaders grow revenues roughly 2.5 times as fast as their industry peers and deliver two to five times the shareholder returns over the next 10 years.

and so on. Visionary, customer-focused leaders such as Amazon's Jeff Bezos, Costco's Jim Sinegal, and Vanguard's Jack Brennan have long understood the importance of concentrating on customer value as an asset rather than pursuing short-term profits or quarterly earnings, and they've become enduring customer loyalty leaders in the process. It's worth noting that a disproportionate number of loyalty-leading companies are able to resist shareholder pressure, or avoid it altogether, because they are founder-led, customer-owned, or not publicly traded.

Companies can destroy customer value in a variety of ways: To boost revenue, enterprise software companies sometimes charge corporate customers change fees that can raise the total cost of ownership to as much as three times the original bid. To cut labor costs, call centers often give agents incentives to minimize call-handling times. To reduce operating costs, restaurant chains sometimes substitute frozen and precooked ingredients in place of fresh and made-to-order food. The resulting profits may look good on the income statement. Such tactics may even lead to short-term earnings growth. But they also scare off potential customers, encourage defection, and make the company vulnerable to poaching by customer-centric competitors.

Given the importance of customer value, leaders should track it as rigorously as they track other key assets, such as buildings, machinery, inventory, and marketable securities. They also should disclose it in their quarterly and annual earnings releases in consistent formats so that investors can make informed judgments about company

performance and how it compares with that of industry peers. But most companies wrongly believe that measuring customer value is too difficult or costly. They continue to rely on a centuries-old accounting tradition that emphasizes physical and financial assets, and neither income statements nor balance sheets offer much visibility into the value of a company's customers.

As investors wake up to the importance of customer value, however, many growth-stage companies preparing for an IPO—most so focused on acquiring customers that they're unprofitable—now explicitly direct investors' attention to success in growing the value of their customer base. My team at Bain examined the SEC S-1 registration filings of 309 companies that were preparing for public stock offerings in 2018. Nearly one-quarter of them included non-GAAP metrics such as active customer count, new customers acquired, purchases per customer, and revenue per new-customer cohort.

Some public companies, such as Costco, AMC Entertainment Holdings, Humana, and American Express, increasingly report various types of customer value metrics. Most telecommunications companies—including Verizon, AT&T, and T-Mobile—do as well. The utility company E.ON reports year-over-year customer counts in its audited financials. Its 2018 annual report noted a decline of 200,000 customers in the UK and an increase of 100,000 in Germany, while other regions were flat. "As a customer-focused company," E.ON noted, "we see our ability to acquire new customers and retain existing ones as crucial to our success." E.ON began

tracking loyalty metrics in 2013 and discloses its performance relative to competitors. Insurance giant Allianz has been doing that even longer.

This is a start, but because there are no customer-value reporting standards or requirements, investors still have an incomplete picture. The minority of companies that do provide customer value information decide for themselves what to disclose. Further, firms may calculate customer metrics differently or tweak them to tell a desired story, or simply stop reporting them if they fail to align with the company's preferred narrative.

We won't truly enter the age of customer capitalism until financial-accounting standards bodies enact rules that require reliable, auditable disclosure of customer-relationship health. This has long been a topic of debate in the accounting world. Over the years the Financial Accounting Standards Board, the International Accounting Standards Board, and others have attempted to improve reporting on intangible assets including customer value. Those efforts have consistently run into challenges related to valuation methodology, differences in industry practices, and the cost of compliance.

I propose a straightforward approach to disclosure that simplifies the accounting task for companies and places the burden of valuation onto investors.

WHAT INVESTORS NEED TO KNOW

While we await clear standards and rules, companies should take the lead, disclosing reliable and consistent information about the progress they are making growing customer value as part

Spotlight

Top: Outside of an Elvis Presley concert, Florida 1956; Bottom: Elvis Presley signing autographs, 1956

of their earnings releases. Only then can investors systematically reward those investments. Three new, auditable metrics would suffice in most instances:

- number of gross new customers acquired during the reporting period and number of net new customers remaining at period end
- number of existing (or tenured) active customers (existing customers are those who have been customers for a year or more; active customers have made a purchase in the past year)
- revenue per new and existing customer

Using just these metrics, investors could readily estimate the changing value of a company's customer assets. (See the exhibit "An Investor's View of Customer Value.")

Gathering the data shouldn't be difficult; nearly every company already tracks these metrics. Methods for calculating customer value will differ slightly between subscription-based businesses (think retail banking, cable companies, and software-as-a-service providers) and nonsubscription ones (grocery stores, for example, or parts suppliers), but the basic principles are the same. For subscription businesses in which customers also make discretionary purchases, one additional metric is required: the number of orders placed by new and existing customers during the period.

To help investors develop more-nuanced valuations, companies could disclose what it costs them to acquire and serve customers in various segments, and provide a breakdown of customer counts and revenue by cohort. Likewise, disclosing the volume of purchases and retention rates among the top



Top: Charles Trainor/Getty Images; Bottom: Bettmann/Getty Images



New accounting tools and technologies enable managers to model customer value and report on the impact of their actions.

20% of customers relative to the remaining 80% would materially improve investors' ability to value a company's customer base. Many companies may consider this information proprietary, but it is so important to corporate valuation that I believe investors should have it. (For more on customer cohorts, see Daniel McCarthy and Peter Fader's article "How to Value a Company by Analyzing Its Customers," on page 51.)

Qualitative measures such as Net Promoter and customer satisfaction scores are also of use to investors in assessing customer loyalty. Companies should source such measures from independent third parties that publish their methodology and present them in consistent formats. Short of that, firms should provide auditable evidence that their metrics are accurate and can be reliably compared with metrics reported by other companies.

MANAGING FOR CUSTOMER VALUE

Disclosure is an essential element in bringing customer value to center stage, but what generates the outcomes to be reported on? Let's turn now to the four strategies used inside a company to achieve consistent and sustained growth in customer value.

1

Develop robust customer-value management processes and tools.

To engage employees in the work ahead and to sell investors on the necessary investments, leadership first needs a clear understanding of the size of the prize: the current total lifetime value of the customer base and the potential

financial value that lies in increasing customer loyalty. New accounting tools and technologies enable managers to model customer value and report regularly on the impact of their actions. (Providing tools will typically be the responsibility of the finance organization.)

For example, to improve the loyalty and profitability of new customers, managers need periodic reports on the performance of each new-customer cohort. How much did it cost to acquire new customers in each cohort? What percent of customers in each remains active? How frequent are their purchases? How much does it cost to serve them? What is the revenue per customer? By comparing the performance of different cohorts, managers can monitor real-time improvements or declines in lifetime value.

Managers can also use analytics and reporting to track how experiments and changes in products, pricing, customer policies, processes, promotions, and services affect each cohort's performance over time. Using time-series analytics, for example, they can monitor customers who have been exposed to specific initiatives—say, a service personalization effort—to determine how that experience will affect lifetime value. Operational measures, such as the number of abandoned calls or the first-time success rate in a digital self-service experience, can be combined with qualitative data, such as customer feedback scores and comments, to sharpen the picture.

This just scratches the surface, of course, but it conveys the type of robust analytics and reporting managers could have at their disposal to compete for customer loyalty.

2

Combine design thinking with loyalty-earning technologies.

Companies earn loyalty when they anticipate and meet fundamental, often unexpressed, customer needs. Doing this depends on two sets of capabilities: design thinking and careful application of cutting-edge technologies.

Design thinking is about seeing the world through customers' eyes and learning through direct observation. Managers, frontline employees, and even C-level executives should engage in the exploration and design process. Design thinking combined with a constant flow of customer feedback helps product groups create highly personalized offerings. It also informs loyalty-driven sales and marketing efforts. Messaging can be tailored and targeted to put the right offering in front of the right customer in the right way at the right moment. The goal is not simply to induce customers to buy. It is to improve their lives so effectively that the company earns their trust and continued business.

Data, analytics, and AI capabilities are key to human-centered design. Consider how an insurance company might use AI to enrich service interactions. A customer, Mary, calls with a question related to a recent claim. Before she even speaks to a live rep, the AI-enhanced routing system predicts what her need is on the basis of her profile data, latest mobile and web interactions, and recent purchases. The system uses this context to route Mary not to the next available agent but to the one whose interaction style and technical proficiency are best suited to the issue at hand. Once the call



Each department aggressively managed its own metrics and celebrated its wins. It seemed that only the customers lost.

is connected, an AI-enabled coaching system analyzes Mary's tone of voice and rate of speech during the call and provides guidance to the agent in real time about ways to improve her experience. Instead of trying to prevent customers from ever reaching a live human—so often the default cost-cutting strategy—such systems focus on speeding calls to the right human.

Examples of such intelligent personalization are growing in number and variety. The best of them share a focus on using technology to enhance the customer experience, which often also reduces the company's delivery cost. Beginning in the early 2000s, companies such as Amazon, Netflix, and Google have given us a taste of what the future could bring. The question today is not whether to make investments in data and technology but how best to leverage those that have been made. Big companies often face complex legacy IT system and data challenges that digital-native firms do not, but they also have a significant advantage: They typically have amassed vast customer databases over decades and have the resources to take full advantage of them, including by conducting many simultaneous customer experiments that can speed innovation.

3 **Organize around customer needs.** Rich customer-value data and design-thinking practices will remain locked in silos unless companies embrace new operating models that push decision-making down to frontline employees, reduce cross-functional friction, and focus the organization on customers.

Since the early 1900s, large companies have employed operating models built around functional and product expertise and accountability. Finance, legal, marketing, sales, operations, compliance, and other functional departments or product teams form the “strong arms” of the company matrix, generally controlling resource allocation, goal setting, and decision-making. This structure fosters localized accountability, expertise, and efficiency, all of which are critical for competitive performance. However, the model also gives rise to silos, each of which seeks to optimize its own performance. Even when functional goals are more or less aligned, in-group bias—the tendency to favor one's own group and view others with suspicion—leads to conflicts among silos and even among members of a team drawn from different silos.

Consider how this played out at one large logistics company, where a cross-functional initiative to tackle the problem of shipping damage—a big cost for the company and perhaps the largest frustration for customers—foundered in a sea of misalignment and noncooperation. The issue appeared to be simple: Large, heavy packages often crushed smaller ones in the company's trucks. But the sales department, with an eye toward meeting or exceeding its targets, refused to stop accepting orders for large packages or to charge more for them. The shipping department, mindful of its cost goals, resisted setting up a separate handling process for large items. Customer service, to minimize costly time on the phone taking claims, made it more difficult to reach reps to file a complaint. And risk

managers did their best to cut payouts by rejecting most claims and reducing payment on claims that were accepted. Each department aggressively managed its own metrics. The results were impressive: Shipping costs were kept in line, revenue grew, phone center costs held steady, and damage payouts went down. Each functional team celebrated its wins. It seemed that only the customers lost.

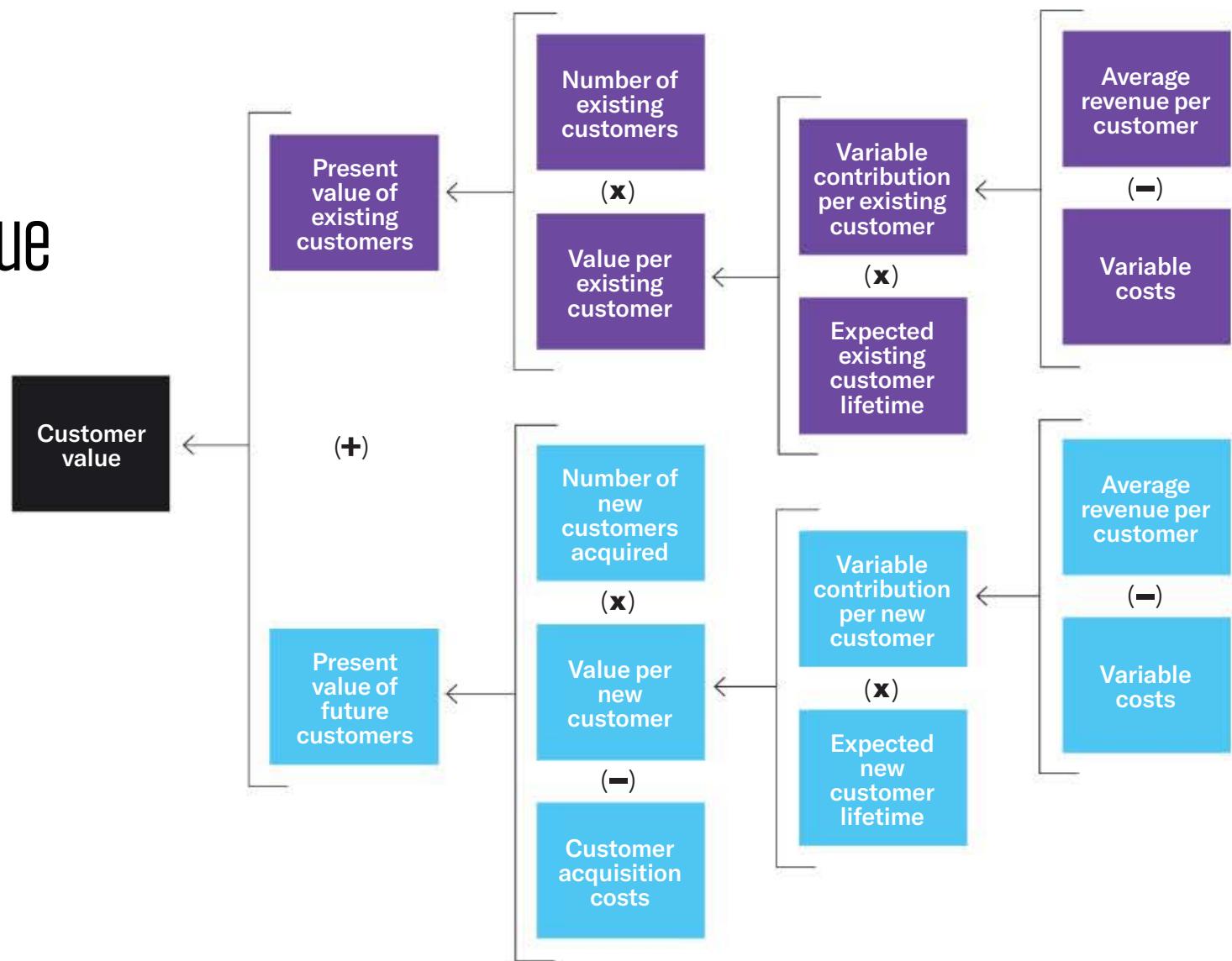
Instead of fighting or ignoring in-group bias, some companies now harness it for the benefit of customers by aligning cross-functional teams around a specific customer need. Although members are drawn from different functions, they are fully dedicated to the team, with authority for decision-making and accountability for outcomes. Many digital-native firms, such as Warby Parker and Stitch Fix, are organized around teams whose “products” are better described as customer experiences, including try-on programs in which eyeglass frame options or personalized clothing selections are shipped to customers' homes for consideration. No purchase is required, and easy returns are guaranteed. The teams are composed of representatives from each discipline necessary to deliver the experience—IT, marketing, fulfillment, and finance, for example—and each team focuses on meeting a defined need. Team members, whatever their functional provenance, view addressing the customer need as their primary goal, with individual performance measured and rewarded through their contributions to the team's results.

Legacy businesses are now following suit. Consider the insurer and bank

An Investor's View of Customer Value

The value of a firm's customer base is the sum of the value of existing and future customers.

In practice, some investors now incorporate the components of customer value—along with their assumptions and projections about the future competitive and regulatory environment—into their traditional valuation models. For an interactive look at how to calculate customer value, go to bain.com/customer-value.



USAA. It historically assigned separate product groups to manage its various offerings. For example, when a customer purchased a car, one group would help secure financing while another helped with insurance. The process worked, but USAA's leaders believed the company could do a lot better. Following the digital natives' lead, USAA now organizes around customers, with employees from different product lines and functional groups working as a team to address an overarching customer need. People seeking to buy a car can choose and locate the best model, negotiate its purchase, and finance and insure it as a seamless experience. Customer-needs-based objectives sit alongside product and operational goals; success is measured across key outcomes such as customer satisfaction, loyalty, and product sales.

When teams are organized around the customer, the functional and

product expertise that often worked at cross-purposes when employees were locked inside silos can act as powerful accelerants to innovation and competitiveness, particularly when backed by huge storehouses of data and the capabilities required to mine it.

Reorganizing around customer needs requires rewiring the organization and its decision-making pathways. Agile ways of working can dramatically speed up team processes, but leaders must accept that this involves letting go and allowing the frontline employees closest to the customer to make decisions that once came from the top. That can make traditional leaders uncomfortable, because it depends on experimentation, struggle, occasional failure—and relinquishing some control. But the shift is inevitable. At the current rate of transformation, I estimate that within 20 years more

companies will organize around customer needs than around traditional functional models.

4

Lead for loyalty. The job of leadership in any major organizational shift is to articulate an inspiring vision, lay out a path, and engage every employee in the work ahead. The first thing leaders must do is get everybody on board. Building the case for customer value should be easy: When a company focuses on loyalty, it makes customers' lives so much better that they keep coming back, and they bring their friends. Employees become inspired by the satisfaction that comes from making customers' lives better. And don't forget the superior performance of the companies that lead their industries in Net Promoter Score or satisfaction. Their revenue growth and shareholder



It would be irresponsible for any leader to ignore customer value as a proven source of profitable growth.

returns far surpass those of their peers. Companies that don't pursue customer value risk being put out of business by those that do.

Loyalty leadership demands persistent attention. Although the new customer focus is in part about pushing decision-making down the ranks, that doesn't mean that leadership focus can be fleeting or insincere. Look at the case of Telstra, an Australian telecommunications company. CEO David Thodey recognized that providing a far better customer experience was necessary for achieving and sustaining growth. He set out a clear vision for the company and its employees: Telstra would lead its industry in customer advocacy as gauged by Net Promoter Scores. He declared that customers would be his top priority. He demonstrated his commitment by beginning every business-unit review meeting with a discussion of progress on customer advocacy. He regularly made calls to customers. He insisted that his own leadership team devote time in standing meetings to knocking down barriers to delivering a great customer experience. He supported changes in policies and pricing to improve the customer experience, often at the expense of short-term business performance.

Thodey couldn't have done this without support from Telstra's investors. He worked hard from day one to educate them about the company's efforts to strengthen customer relationships, and they supported him. During his six years leading Telstra, the company improved customer loyalty in every major product, customer segment, service process, and point of contact with customers. It

gained 10 points of market share in the lucrative mobile business, and its stock price increased by more than 70%. Yet soon after Thodey departed, customers figured less prominently in Telstra's strategy. Competitive pressures forced the company to focus on improving its cost position rather than continuing to invest more in initiatives that had earned customers' trust. Since Thodey's retirement, in 2015, Telstra has slipped to the middle of the industry loyalty rankings.

As Telstra's experience shows, loyalty leadership requires ongoing attention to the actions of employees across the organization—changing decision criteria, supporting policy changes, and celebrating customer loyalty wins. This signals commitment to customers and gives employees confidence that the loyalty strategy is not an empty promise.

Loyalty leadership also calls for managing up and out. Top managers must gain and maintain the support of board members and investors by educating them about the loyalty-based strategy and how its progress should be evaluated. This is particularly important early in a customer value transformation, because management will be making decisions (such as investing in technology) that may depress short-term earnings. Leaders need to demonstrate to investors and board members that those decisions will yield larger payoffs down the road, in the form of increased customer acquisition or retention, growing revenues, lower cost to serve, or other measures of improved customer value.

IT'S EASY TO blame companies' short-termism on shareholder pressure and a

bias toward quarterly financial reporting. But managers share the blame when they fail to educate investors about the customer value their company creates or when they resort to quick profits instead of investing in long-term customer loyalty. Several iconic founder-led companies have paved the way for decades. A handful of independent public companies are doing so too. And they deliver outsize growth, profitability, and returns to shareholders.

It would be irresponsible for any leader to ignore such a proven source of profitable growth. Boards and shareholders should demand that companies grow customer value, support the necessary investments, and push for new accounting standards that make the returns on these investments visible. All stakeholders will benefit: Customers will experience products and services that make their lives easier, richer, and more enjoyable. Employees will reap the benefits of making customers' lives better. Management and investors will see increasing profits and shareholder value. And society will enjoy the economic growth that derives from innovation and investment. With transparency and reliable disclosure, investors and management teams can strike at the heart of short-termism and run their businesses for sustainable value. ☰

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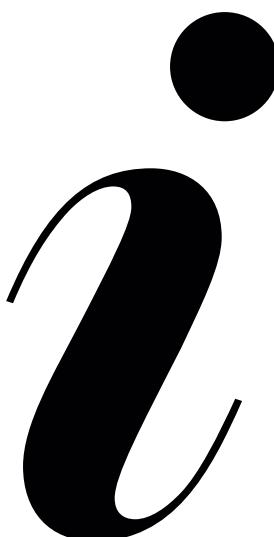
Frank Sinatra fans outside the Paramount Theatre, 1944

HOW TO VALUE A COMPANY BY ANALYZING ITS CUSTOMERS



Daniel McCarthy
Assistant professor, Emory University

Peter Fader
Professor, University of Pennsylvania



NTHE WEEKS leading up to the initial public offering of apparel retailer Revolve Group, in June 2019, investors struggled to come up with a fair valuation. Several recent IPOs—most notably those of the ride-hailing firms Uber and Lyft—had been disappointing. Revolve had delayed its IPO for months because of a downturn in the stock market. Despite the headwinds, its IPO was priced at \$1.2 billion—and it exploded by an additional 89% on its first day of trading, making it one of the best first-day IPO

performances of 2019. The spike brought the company's valuation to roughly 4.5 times its revenue over the previous 12 months—five times the multiple of its apparel-retailing peers and more akin to that of a technology company. What happened, and why did investors originally fail to see just how strong a firm Revolve was?

Revolve's premium valuation was not a fluke. It stemmed from the firm's strong underlying fundamentals, which were not fully appreciated by the underwriters who set the IPO price. This strength was less about top-line revenue growth and more about strong customer-unit economics: Simply put, Revolve not only acquired its customers profitably but retained them for many years, and that meant its longer-term profit potential was larger than its revenue growth to date had implied.

Revolve's IPO success illustrates the movement toward customer-driven investment methodologies. Using customer metrics to assess a firm's underlying value, a process our research has popularized, is called customer-based corporate valuation (CBCV). This approach is driving a meaningful shift away from the common but dangerous mindset of "growth at all costs" toward revenue durability and unit economics—and bringing a much higher degree of precision, accountability, and diagnostic value to the new loyalty economy.

In this article, we explain how executives and investors can use the principles of CBCV to better understand and measure the value of a firm. The methodology works whether the company features a predictable, subscription-driven revenue stream (think of Netflix and Verizon) or a base of active customers who place discretionary orders every so often (think of Uber and Walmart). We also discuss how companies can benefit from providing investors with more of the right kinds of customer data—and how investors can avoid being fooled by vanity

metrics that appear to be useful indicators of customer behavior but aren't as meaningful as they might think.

A MORE PRECISE WAY TO FORECAST REVENUE

The premise behind CBCV is simple. Most traditional financial-valuation methods require quarterly financial projections, most notably of revenue. Recognizing that every dollar of revenue comes from a customer who makes a purchase, CBCV exploits basic accounting principles to make revenue projections from the bottom up instead of from the top down. Although this may seem like a radical departure from traditional frameworks, that's not the case: CBCV simply brings more focus to how individual customer behavior drives the top line.

What do we need to implement CBCV? In addition to the usual financial statement data, two things are required: a model for customer behavior (what we call the customer-base model), and customer data that we feed into it. The model consists of four interlocking submodels governing how each customer of a firm will behave. They are:

1. the customer acquisition model, which forecasts the inflow of new customers
2. the customer retention model, which forecasts how long customers will remain active
3. the purchase model, which forecasts how frequently customers will transact with a firm
4. the basket-size model, which forecasts how much customers spend per purchase

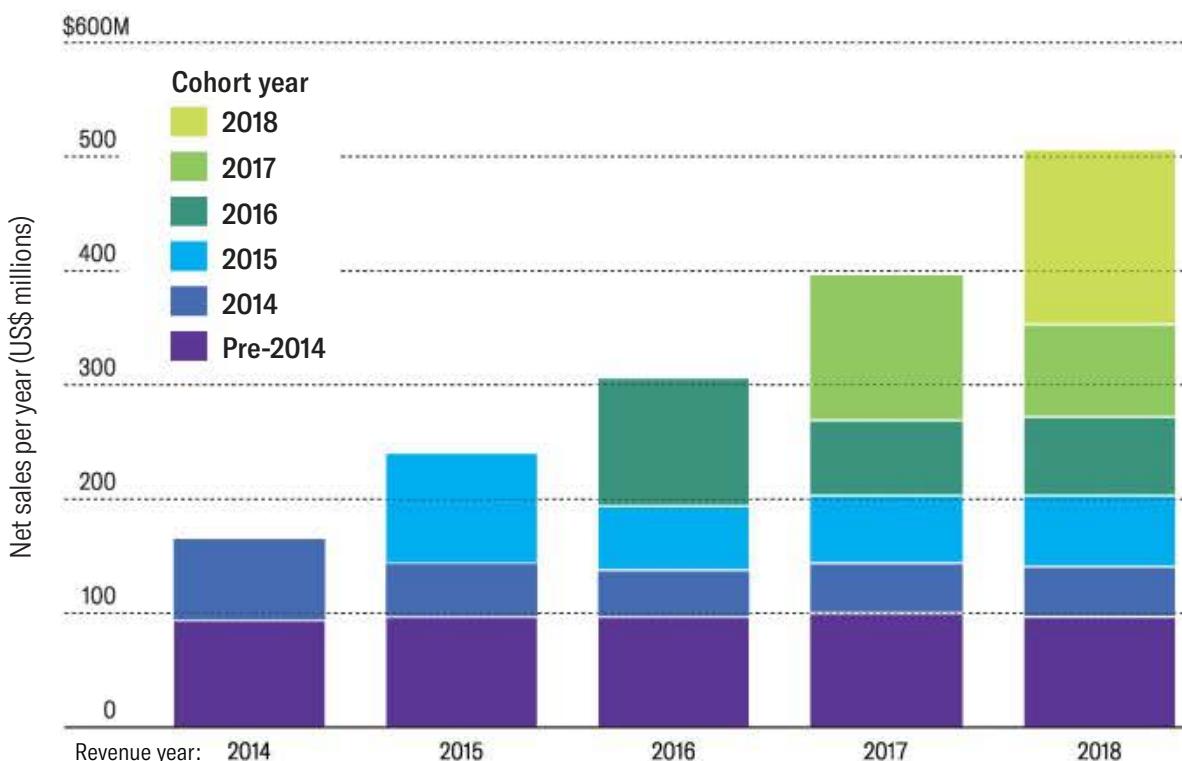
Bringing these models together enables us to understand the critical behaviors of every customer at a firm—who will be acquired when, how much they'll spend over time, and so on. Summing up all the projected spends across customers gives us our quarterly revenue forecasts. Together, these models can produce much more precise estimates of future revenues streams—and from that, one can make much better estimates of what a company is really worth.

This basic model is universal, no matter what kind of business a company is in. Exactly how it is specified, however, depends on the company's business model—in particular, on whether the company is subscription-based or not. At a subscription-based business, such as a gym or a telecommunications firm, managers generally know how much customers will spend each month, and they are able to directly observe when customers churn out, because they literally cancel their contracts and close their accounts. This simplifies how the retention and purchasing submodels are built.

Most companies, however, are characterized by discretionary (that is, nonsubscription) purchasing and unobservable customer churn. If you have an Amazon account but decide never to buy from the company again, for example, it's difficult for anyone inside or outside Amazon to immediately recognize that. Marketers call this latent attrition. Accounting for it requires more-complicated submodels, but marketers have developed methods for predicting it extremely well.

C3: A New Tool for Corporate Valuation

The customer cohort chart is straightforward: total revenue, period by period, broken down by customer acquisition cohort. Though its format may vary, the C3 is increasingly finding its way into companies' public filings, giving investors a powerful tool for gauging what a company is really worth. This example of a C3 comes from Revolve Clothing's 2019 SEC filing.



PEEKING INSIDE THE BLACK BOX

Although this methodology may seem daunting, it's relatively simple to get going, and it can be refined and extended as appropriate for particular business contexts.

Let's peek inside the black box through an example. Imagine that you're the founder of a young, fast-growing, subscription-based meal-kit company. In its first four months of operation, your company generated \$1,000, \$2,500, \$4,500, and \$7,000 in total revenues respectively. You would like to understand what this means for future revenues and the overall viability of your business. As a start, you want to forecast revenue in month five.

Let's suppose that active customers pay a flat fee of \$100 per month for meal kits delivered over the course of the month, and that the company acquired 10, 20, 30, and 40 customers, respectively, in its first four months

of operation (100 in total). Half the acquired customers churned out in their first month; all customers who did not churn out in the first month have remained.

The first step in forecasting month five revenue is to figure out how much revenue will come from retained customers. Of the 100 customers acquired over the first four months, half, or 50, will still be with the company in month five if historical retention trends persist. Thus, the portion of month five revenue from retained customers is \$5,000 ($50 \times \100). The next step is to forecast how much revenue will come from new customers. Assuming that acquisition trends continue, you can expect an additional 50 customers, representing \$5,000 of revenue. By adding up the two forecasts, you arrive at a total monthly revenue of \$10,000.

Using the CBCV approach, revenue numbers no longer exist in a vacuum.

Instead, they are a direct function of a small set of behavioral drivers—in this example, total customers acquired, retention dynamics, and average revenue per user (ARPU). This framework makes revenue forecasting easier and serves as a diagnostic, helping managers and investors understand where the value creation is coming from (and what questions to ask when results are out of line with expectations).

Of course, few companies will have such simple models and neat patterns as our meal-kit example. Our purpose here is to outline the general mechanics of the approach, as extensions of it follow naturally. Suppose, for example, that your firm has tiered pricing (it also offers a second plan that delivers twice as many meals a month for \$189). In that case, you would need to account for variable ARPU from period to period. If the firm allows customers to skip deliveries or make discretionary purchases, you would need to track order frequency and average spend per order. If the firm pivots to sell meals à la carte instead of on a subscription basis, you'll need to use a model that predicts how often customers will place orders. These extensions add complexity to the model, but the basic process to incorporate them would be the same as in the example above. If you want to extend the time horizon beyond month five, you can repeat the calculation for multiple months. That gives you a long-term revenue forecast, which is vital for corporate valuation.

For an in-depth discussion of the CBCV methodology in complex scenarios, see our academic papers "Valuing Subscription-Based Businesses Using Publicly Disclosed Customer Data"



Duke Ellington
signing autographs
in Pittsburgh, 1946

(*Journal of Marketing*, October 2016) and “Customer-Based Corporate Valuation for Publicly Traded Non-Contractual Firms” (*Journal of Marketing Research*, March 2018).

LOOKING AT CUSTOMERS FROM INSIDE AND OUTSIDE

The richness of the insights that can be derived from CBCV depend on how much access the person performing the analysis has to internal company data. A corporate executive would have full visibility of all customer data. A private equity investor assessing an acquisition target would typically have access to transactional and CRM data. For subscription firms, that would include the length of contracts, periodic payments, and observable churn; for

nonsubscription firms, it would include the timing and size of each individual purchase. Access to other behavioral data, demographics, marketing touchpoints, service interactions, and the like would further enrich the CBCV analysis.

For those on the outside looking in—hedge funds, Wall Street analysts, regulators, and others—detailed customer data might be impossible to obtain on a regular basis. They may, however, have access to the firm’s customer cohort chart, or C3, which tracks revenue by acquisition cohort over time and shows how total customer spending changes as each cohort ages. (For an example, see the exhibit “C3: A New Tool for Corporate Valuation.”) Many large, reputable firms (both subscription and nonsubscription) have begun to disclose their C3, among them

Slack Technologies, Dropbox, Lyft, and luxury marketplaces the RealReal and Farfetch. A firm’s C3, along with the number of active customers and the total number of orders, is sufficient to give investors a good understanding of customer behavior.

If a firm can’t or won’t release its C3, investors should press it to reveal four key metrics: the number of active customers (in total and the percentage from tenured customers, or customers who have been with the firm for over 12 months); gross acquired customers over the most recent period; revenue (total and percentage from tenured customers); and the number of orders (total and percentage from tenured customers).

While we would strongly encourage firms to disclose more, having three or four years’ worth of these disclosures



If you're an executive and you aren't currently disclosing your customer metrics, start thinking about the story they would tell if disclosure were required.

(from past filings) is enough to run a CBCV model and assess the overall health of a company's customer base, albeit with greater uncertainty about future revenues.

TRENDING TOWARD TRANSPARENCY

Few companies currently provide all the data outsiders need to perform CBCV, for a variety of reasons. First, disclosure of customer metrics is voluntary, and companies feel little to no pressure to make them available. Second, there is little consensus about which customer metrics are the most informative and how those metrics should be calculated and reported. And finally, policy makers and regulators have been largely silent about these issues, leaving disclosure to companies' discretion.

Unfortunately, executives often have a "less is more" mentality regarding disclosure. They fear that additional disclosure, however aggregated the numbers may be, could put them at a competitive disadvantage or open them up to potential litigation or regulatory scrutiny. Successful firms worry about how investors will react if the metrics they're disclosing start going in the wrong direction. And customer-level forecasting often remains siloed in the marketing department; managers in finance and related functions are unaccustomed to incorporating customer behaviors in their revenue forecasts and are more comfortable using traditional methods.

In the absence of investor pressure and regulatory standards, firms can arbitrarily choose which metrics to disclose, generally selecting those that paint an

overly rosy picture for the investment community. The metrics are often defined improperly, based on faulty assumptions, or framed incorrectly.

Consider Peloton, which sells high-end home-exercise equipment and monthly subscriptions to streaming-video fitness classes. When it filed its pre-IPO S-1, in August 2019, it chose to disclose its customer lifetime value (CLV) per subscriber, boasting a CLV of \$3,593 in its most recent fiscal year. To its credit, Peloton also disclosed the underlying formula it used to compute its CLV, but that formula left much to be desired. The most glaring problem was that it did not account for the time value of money, and instead simply added more than 13 years' worth of future cash flows without discounting them. Applying even a modest discount rate would slash its CLV by more than 50%—a drop with significant implications for the health of the customer base. As more firms voluntarily disclose customer metrics, analysts must be vigilant about vetting data that may be misleading or is mostly window dressing.

Although Peloton's metrics are far from perfect, they nevertheless represent an encouraging shift toward transparency around customers that will be good for shareholders, companies, and customers. Shareholders will increasingly rely on customer data to evaluate potential investments as more purchases are made online and traditional brick-and-mortar metrics, such as same-store sales, decline in relevance. Executives can use customer data to build the case for investing in activities that will generate long-term value for the firm and to communicate to shareholders the impact

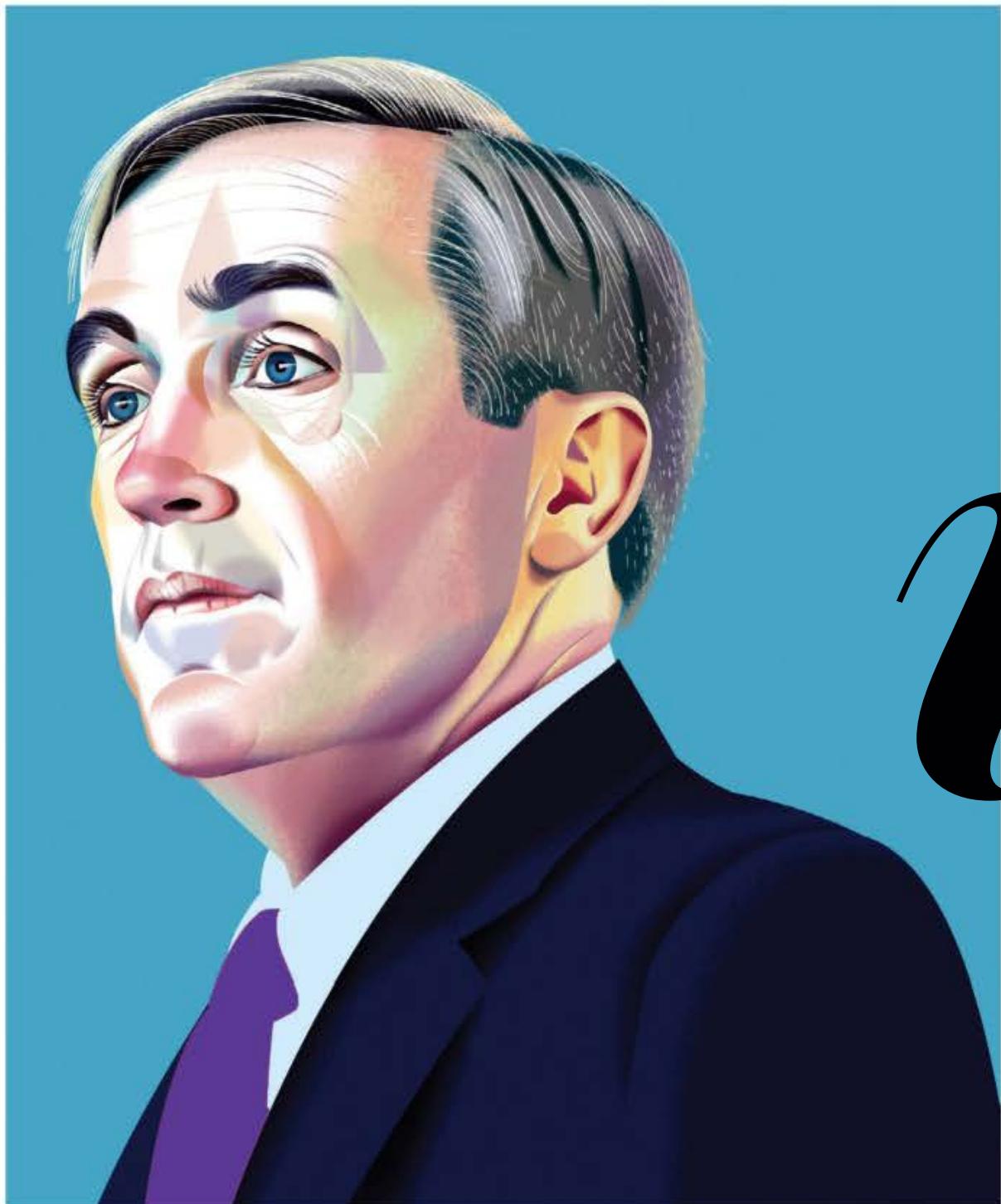
of those investments on CLV and other long-term metrics. Customers will be treated as strategic assets whose value should be cultivated over the long term. This mindset will be a welcome change from the status quo, in which shareholders, lacking the information needed to assess long-term customer profitability, compensate by pushing firms to hit short-term performance measures.

Until the CBCV revolution fully takes hold, what does all this mean for you? If you are an investor, don't ignore the customer-related metrics that may be tucked away in financial reports; actively seek them out. If the data you need isn't disclosed, demand it, or find alternative sources that can serve as effective proxies. Focusing on unit economics will almost certainly reveal opportunities you can exploit.

If you're an executive and you aren't currently disclosing your customer metrics, start thinking about the story they would tell if disclosure were required. If you would not be proud of your metrics as they stand, this is your golden opportunity to refocus on and improve the health of your customer base in the dark. It may not be long before market participants demand sunlight. ☺

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"OVER TIME, THE MARKET WILL DEMAND THIS INFORMATION"

A conversation with Vanguard chairman emeritus **Jack Brennan**

VANGUARD, THE mutual fund company known for its low-cost index funds, frequently shows up on lists of organizations with the most-loyal customers—and that's no accident. During his tenure as CEO, from 1996 to 2008, Jack Brennan emphasized what he calls the virtuous circle of attracting loyal clients who stick around and create new ones through word of mouth. Now Vanguard's chairman emeritus, he is a leading voice on corporate disclosure issues and has held positions at the Financial Accounting Foundation, the Financial Industry Regulatory Authority, and the Investment Company Institute. Brennan spoke with HBR about why companies should want to tell investors more about their customers—and how soon they may be required to. Edited excerpts follow.

HBR: How did you become interested in customer value?

BRENNAN: In our business, the highest-cost thing we do is attract and onboard new clients. So why wouldn't we be driven to increase the loyalty of those clients? This isn't differential calculus. When customers leave, you have to replace them, and we'd prefer to avoid that expense. So we have followed Bain & Company's loyalty research very

closely for many years. In the years since I became Vanguard's CEO, managing for loyalty has gone from an intuitive idea to a conceptual goal to an operational practice. Across businesses in general, this is still underexposed and undervalued as a concept. Rob Markey's new work on using loyalty metrics to better understand and manage the value of a firm is the next evolution of this idea.

Where do you see these new techniques being used?

The place where I've seen this play out most aggressively is in private equity. If you talk to private equity firms about the due diligence they engage in when they're buying a company, the customer base is a critical part of what they're looking at. It's intense. They're asking senior management: What's the nature of your customer base? How are you acquiring customers? How are you losing them? Which ones are profitable? They're interested in individual customer accounts and transaction data. A debate is currently going on about whether investors who are buying not an entire company but, say, 1,000 shares should have access to some of the same information about the core value of the customer base that private-market investors see in their due diligence process. I think they should.

Are Vanguard's portfolio managers using customer valuation tools?

I'm not close enough to their work to know, but I do see other public-market investors using them. One portfolio manager I know runs a very concentrated fund—it holds eight to 10 stocks at a time, with essentially zero turnover. Because he's holding very few stocks for a very long time, he thinks more like an owner. He approaches each investment as if he's buying the whole company. Among the first things he does is conduct a deep study of the customer base—its breadth, its depth, its growth. He even hires third parties to help with the analysis. That's

an example of how investors don't simply rely on the customer data that the company discloses—they actively seek out data on their own. If you walk into a Walmart, there's usually somebody in there counting something for an analyst. Investors sometimes even hire investigative reporters to dig up information. They're trying to learn as much as they can about a company's customers.

How do regulators decide whether or not to require more disclosure on customer metrics?

I've been working on issues around financial disclosure for many years, and it's a fascinating process. The Financial Accounting Standards Board (FASB) is always balancing what's valuable to investors against what's overly burdensome or competitively disadvantageous to companies. Do shareholders have access to enough material information to judge the company's risks and performance? How much is too much disclosure? What's verifiable? Regulators are leery of being presented with non-GAAP measures—metrics that don't conform with generally accepted accounting practices. They worry about clutter risk—the distraction created by too much data that's not very meaningful to investors. Companies worry about being forced to reveal information that could help their competitors. There's always tension and stress around the prospect of new reporting requirements, and it's not irrational. But the debate that goes into standard setting is healthy and valuable.

Amazon has millions of Prime subscribers, but it won't say exactly how many, so analysts are left to guess. What's the harm in disclosing that number?

Prime members are obviously a critical part of Amazon's business model. But executives may choose not to disclose the number because they don't want investors to fixate on any one metric. Think about the way investors watch

Netflix subscriber counts. Amazon probably wants to avoid investors' reacting every time Prime subscriber numbers go up or down. Top management might also argue that disclosing the number puts the company at a competitive disadvantage—even though it doesn't really have a head-to-head competitor.

What does the timeline for more disclosure look like?

If shareholders demand disclosure, it will get the attention of the Securities and Exchange Commission, and FASB will weigh in on whether it can be done well. I do think regulation will happen; the question is at what pace? It always feels too slow to me. I think it is still years away, but over time, the market will demand it. I don't think you'll see standardized, fine-tuned Net Promoter Scores as part of corporate financial statements any time soon, but some information about customers will probably be required in the not-too-distant future in the management disclosure and analysis (MD&A) section of the annual report or in the footnotes. That's how regulators have treated disclosures about executive compensation and environmental, social, and governance data. Requirements could begin with something as simple as "We had X number of customers on December 31 of last year and Y number on December 31 of this year," with a little bit more granularity. Companies that are proud of their customer base and loyalty have an incentive to disclose more, of course. Creating a virtuous circle of loyal customers is one of those self-evident ideas that you can't emphasize enough. ☺

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Features

“As even mundane consumer products become smart and connected, data-enabled learning will be used to enhance and personalize more and more offerings.... But in most cases it will not generate winner-take-all dynamics.”

—“WHEN DATA CREATES COMPETITIVE ADVANTAGE,” PAGE 94



Lambert/Getty Images





TECHNOLOGY



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ILLUSTRATOR

EDDIE GUY

COMPETING *in* THE AGE of AI → How machine intelligence changes the rules of business



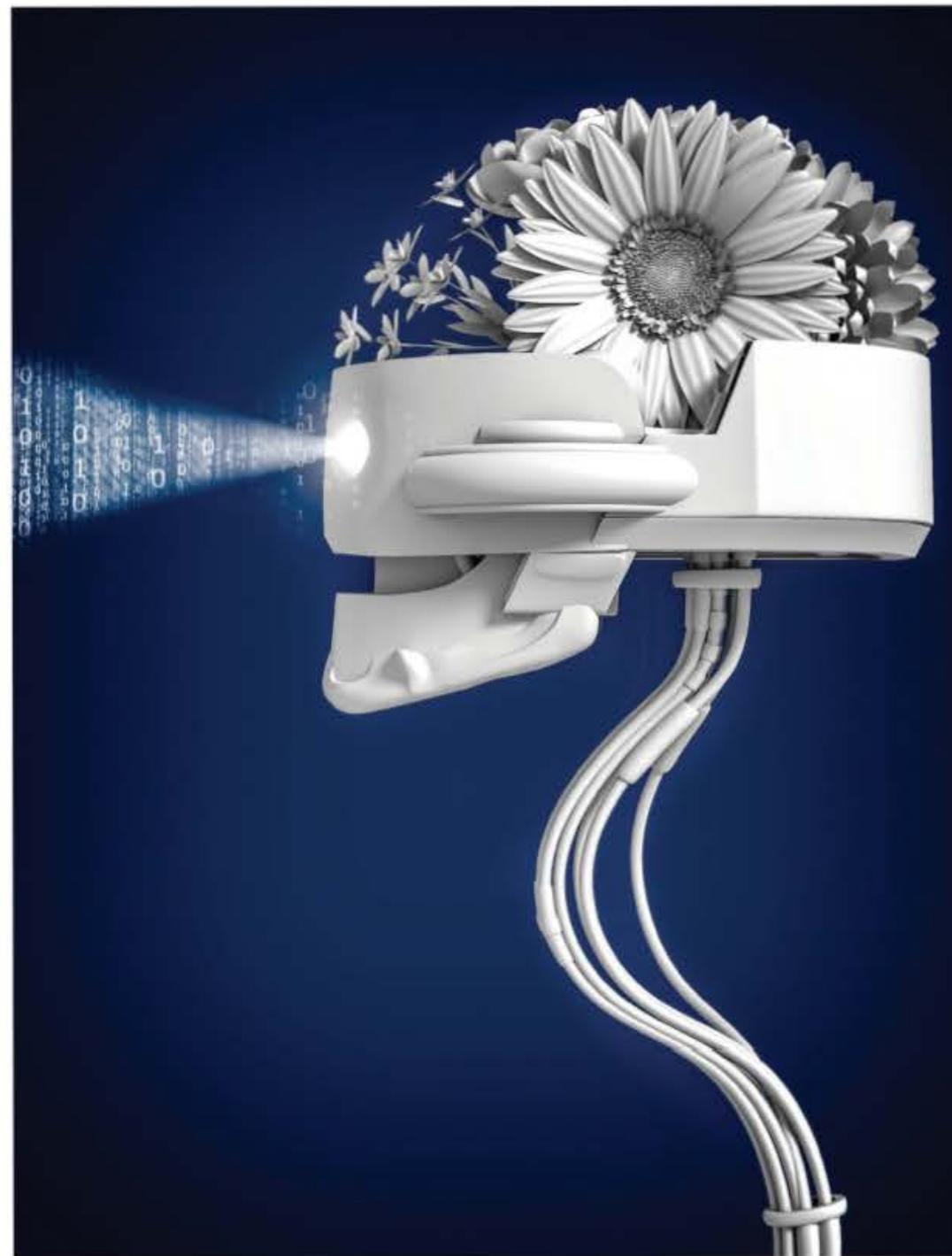
TECHNOLOGY



IN 2019, JUST five years after the Ant Financial Services Group was launched, the number of consumers using its services passed the one billion mark. Spun out of Alibaba, Ant Financial uses artificial intelligence and data from Alipay—its core mobile-payments platform—to run an extraordinary variety of businesses, including consumer lending, money market funds, wealth management, health insurance, credit-rating services, and even an online game that encourages people to reduce their carbon footprint. The company serves more than 10 times as many customers as the largest U.S. banks—with less than one-tenth the number of employees. At its last round of funding, in 2018, it had a valuation of \$150 billion—almost half that of JPMorgan Chase, the world's most valuable financial-services company.

Unlike traditional banks, investment institutions, and insurance companies, Ant Financial is built on a digital core. There are no workers in its “critical path” of operating activities. AI runs the show. There is no manager approving loans, no employee providing financial advice, no representative authorizing consumer medical expenses. And without the operating constraints that limit traditional firms, Ant Financial can compete in unprecedented ways and achieve unbridled growth and impact across a variety of industries.

The age of AI is being ushered in by the emergence of this new kind of firm. Ant Financial’s cohort includes giants like Google, Facebook, Alibaba, and Tencent, and many smaller, rapidly growing firms, from Zebra Medical Vision and Wayfair to Indigo Ag and Ocado. Every time we use a service from one of those companies, the same remarkable thing happens: Rather than relying on traditional business processes operated by workers, managers, process engineers, supervisors, or customer service representatives, the value we get is served up by algorithms. Microsoft’s CEO, Satya Nadella, refers to AI as the new “runtime” of the firm. True, managers and engineers design the AI and the software that makes the algorithms work, but after that, the system delivers value on its own, through digital automation or by leveraging an ecosystem of providers outside the firm. AI sets the prices on Amazon, recommends songs on Spotify, matches buyers and sellers on Indigo’s marketplace, and qualifies borrowers for an Ant Financial loan.



The elimination of traditional constraints transforms the rules of competition. As digital networks and algorithms are woven into the fabric of firms, industries begin to function differently and the lines between them blur. The changes extend well beyond born-digital firms, as more-traditional organizations, confronted by new rivals, move toward AI-based models too. Walmart, Fidelity, Honeywell, and Comcast are now tapping extensively into data, algorithms, and digital networks to compete convincingly in this new era. Whether you’re leading a digital start-up or working to revamp a traditional enterprise, it’s essential to understand the revolutionary impact AI has on operations, strategy, and competition.

THE AI FACTORY

At the core of the new firm is a decision factory—what we call the “AI factory.” Its software runs the millions of daily ad auctions at Google and Baidu. Its algorithms decide which cars



The AI that drives the explosive growth of a firm often isn't even all that sophisticated. AI doesn't need to be the stuff of science fiction, simulating human reasoning.

offer rides on Didi, Grab, Lyft, and Uber. It sets the prices of headphones and polo shirts on Amazon and runs the robots that clean floors in some Walmart locations. It enables customer service bots at Fidelity and interprets X-rays at Zebra Medical. In each case the AI factory treats decision-making as a science. Analytics systematically convert internal and external data into predictions, insights, and choices, which in turn guide and automate operational workflows.

Oddly enough, the AI that can drive the explosive growth of a digital firm often isn't even all that sophisticated. To bring about dramatic change, AI doesn't need to be the stuff of science fiction—indistinguishable from human behavior or simulating human reasoning, a capability sometimes referred to as “strong AI.” You need only a computer system to be able to perform tasks traditionally handled by people—what is often referred to as “weak AI.”

With weak AI, the AI factory can already take on a range of critical decisions. In some cases it might manage information businesses (such as Google and Facebook). In other cases it will guide how the company builds, delivers, or operates actual physical products (like Amazon's warehouse robots or Waymo, Google's self-driving car service). But in all cases digital decision factories handle some of the most critical processes and operating decisions. Software makes up the core of the firm, while humans are moved to the edge.

Four components are essential to every factory. The first is the data pipeline, the semiautomated process that gathers, cleans, integrates, and safeguards data in a systematic, sustainable, and scalable way. The second is algorithms, which generate predictions about future states or actions of the business. The third is an experimentation platform, on which hypotheses regarding new algorithms are tested to ensure

that their suggestions are having the intended effect. The fourth is infrastructure, the systems that embed this process in software and connect it to internal and external users.

Take a search engine like Google or Bing. As soon as someone starts to type a few letters into the search box, algorithms dynamically predict the full search term on the basis of terms that many users have typed in before and this particular user's past actions. These predictions are captured in a drop-down menu (the “autosuggest box”) that helps the user zero in quickly on a relevant search. Every keystroke and every click are captured as data points, and every data point improves the predictions for future searches. AI also generates the organic search results, which are drawn from a previously assembled index of the web and optimized according to the clicks generated on the results of previous searches. The entry of the term also sets off an automated auction for the ads most relevant to the user's search, the results of which are shaped by additional experimentation and learning loops. Any click on or away from the search query or search results page provides useful data. The more searches, the better the predictions, and the better the predictions, the more the search engine is used.

REMOVING LIMITS TO SCALE, SCOPE, AND LEARNING

The concept of scale has been central in business since at least the Industrial Revolution. The great Alfred Chandler described how modern industrial firms could reach unprecedented levels of production at much lower unit cost, giving large firms an important edge over smaller rivals. He also highlighted the benefits companies could reap from the ability to achieve greater production scope, or variety. The push

IDEA IN BRIEF

THE MARKET CHANGE

We're seeing the emergence of a new kind of firm—one in which artificial intelligence is the main source of value creation and delivery.

THE CHALLENGE

The AI-driven operating model is blurring the lines that used to separate industries and is upending the rules of business competition.

THE UPSHOT

For digital start-ups and traditional firms alike, it's essential to understand the revolutionary impact AI has on operations, strategy, and competition.

MICROSOFT'S AI TRANSFORMATION

→ Microsoft's transformation into an AI-driven firm took years of research but gained steam with the reorganization of its internal IT and data assets, which had been dispersed across the company's various operations. That effort was led by Kurt DelBene, the former head of Microsoft's Office business, who'd left to help fix the U.S. government's HealthCare.gov site before returning to Microsoft in 2015.

There's a reason that CEO Satya Nadella chose someone

with product experience to run IT and build the "AI factory" that would be the foundation of the firm's new operating model. "Our product is the process," DelBene told us. "First, we are going to articulate what the vision should be for the systems and processes we support. Second, we're going to be run like a product development team. And we're going to be agile-based." To strengthen that orientation on his team, he brought in hand-picked leaders and engineers from the product functions.

Today Core Engineering—as the IT operation is now known—is a showcase for Microsoft's own transformation. Thanks to the group's work, many traditional processes that used to be performed in silos are enabled by one consistent software base residing in Microsoft's Azure cloud. In addition, the team is driving toward a common data architecture across the company. The new, AI-based operating platform connects the sprawling organization with a shared software-

component library, algorithm repository, and data catalog, all used to rapidly enable and deploy digital processes across different lines of business.

Beyond increasing productivity and scalability, the AI also helps head off problems. "We leverage AI to know when things are starting to behave in unexpected ways," DelBene says. "The best we could do in the past is react as fast as possible. Now we can preempt things, from bad contracts to cyberbreaches."

for improvement and innovation added a third requirement for firms: learning. Scale, scope, and learning have come to be considered the essential drivers of a firm's operating performance. And for a long time they've been enabled by carefully defined business processes that rely on labor and management to deliver products and services to customers—and that are reinforced by traditional IT systems.

After hundreds of years of incremental improvements to the industrial model, the digital firm is now radically changing the scale, scope, and learning paradigm. AI-driven processes can be scaled up much more rapidly than traditional processes can, allow for much greater scope because they can easily be connected with other digitized businesses, and create incredibly powerful opportunities for learning and improvement—like the ability to produce ever more accurate and sophisticated customer-behavior models and then tailor services accordingly.

In traditional operating models, scale inevitably reaches a point at which it delivers diminishing returns. But we don't necessarily see this with AI-driven models, in which the return on scale can continue to climb to previously unheard-of levels. (See the exhibit "How AI-Driven Companies Can Outstrip Traditional Firms.") Now imagine what happens when an AI-driven firm competes with a traditional firm by serving the same customers with a similar (or better) value proposition and a much more scalable operating model.

We call this kind of confrontation a "collision." As both learning and network effects amplify volume's impact on value creation, firms built on a digital core can overwhelm traditional organizations. Consider the outcome when Amazon collides with traditional retailers, Ant Financial with traditional banks, and Didi and Uber with traditional taxi services. As Clayton Christensen, Michael Raynor, and Rory McDonald argued in "What Is Disruptive Innovation?" (HBR, December 2015), such competitive upsets don't fit the disruption model. Collisions are not caused by a particular innovation in a technology or a business model. They're the result of the emergence of a completely different kind of firm. And they can fundamentally alter industries and reshape the nature of competitive advantage.

Note that it can take quite a while for AI-driven operating models to generate economic value anywhere near the value that traditional operating models generate at scale. Network effects produce little value before they reach critical mass, and most newly applied algorithms suffer from a "cold start" before acquiring adequate data. Ant Financial grew rapidly, but its core payment service, Alipay, which had been launched in 2004 by Alibaba, took years to reach its current volume. This explains why executives ensconced in the traditional model have a difficult time at first believing that the digital model will ever catch up. But once the digital operating model really gets going,

it can deliver far superior value and quickly overtake traditional firms.

Collisions between AI-driven and traditional firms are happening across industries: software, financial services, retail, telecommunications, media, health care, automobiles, and even agribusiness. It's hard to think of a business that isn't facing the pressing need to digitize its operating model and respond to the new threats.

REBUILDING TRADITIONAL ENTERPRISES

For leaders of traditional firms, competing with digital rivals involves more than deploying enterprise software or even building data pipelines, understanding algorithms, and experimenting. It requires rearchitecting the firm's organization and operating model. For a very, very long time, companies have optimized their scale, scope, and learning through greater focus and specialization, which led to the siloed structures that the vast majority of enterprises today have. Generations of information technology didn't change this pattern. For decades, IT was used to enhance the performance of specific functions and organizational units. Traditional enterprise systems often even reinforced silos and the divisions across functions and products.

Silos, however, are the enemy of AI-powered growth. Indeed, businesses like Google Ads and Ant Financial's MyBank deliberately forgo them and are designed to leverage an integrated core of data and a unified, consistent code base. When each silo in a firm has its own data and code, internal development is fragmented, and it's nearly impossible to build connections across the silos or with external business networks or ecosystems. It's also nearly impossible to develop a 360-degree understanding of the customer that both serves and draws from every department and function. So when firms set up a new digital core, they should avoid creating deep organizational divisions within it.

While the transition to an AI-driven model is challenging, many traditional firms—some of which we've worked with—have begun to make the shift. In fact, in a recent study we looked at more than 350 traditional enterprises in both service and manufacturing sectors and found that the majority had started building a greater focus on data and analytics into their organizations. Many—including Nordstrom, Vodafone, Comcast, and Visa—had already made important inroads, digitizing and redesigning key components of their operating models and developing sophisticated data platforms and AI capabilities. You don't have to be a software start-up to digitize critical elements of your business—but you do have to confront silos and fragmented legacy systems, add capabilities, and retool your culture. (For a closer look at the key principles that should drive

such transformations, see the sidebar "Putting AI at the Firm's Core.")

Fidelity Investments is using AI to enable processes in important areas, including customer service, customer insights, and investment recommendations. Its AI initiatives build on a multiyear effort to integrate data assets into one digital core and redesign the organization around it. The work is by no means finished, but the impact of AI is already evident in many high-value use cases across the company. To take on Amazon, Walmart is rebuilding its operating model around AI and replacing traditional siloed enterprise software systems with an integrated, cloud-based architecture. That will allow Walmart to use its unique data assets in a variety of powerful new applications and automate or enhance a growing number of operating tasks with AI and analytics. At Microsoft, Nadella is betting the company's future on a wholesale transformation of its operating model. (See the sidebar "Microsoft's AI Transformation.")

RETHINKING STRATEGY AND CAPABILITIES

As AI-powered firms collide with traditional businesses, competitive advantage is increasingly defined by the ability to shape and control digital networks. (See "Why Some Platforms Thrive and Others Don't," HBR, January–February 2019.) Organizations that excel at connecting businesses, aggregating the data that flows among them, and extracting its value through analytics and AI will have the upper hand. Traditional network effects and AI-driven learning curves will reinforce each other, multiplying each other's impact. You can see this dynamic in companies such as Google, Facebook, Tencent, and Alibaba, which have become powerful "hub" firms by accumulating data through their many network connections and building the algorithms necessary to heighten competitive advantages across disparate industries.

Meanwhile, conventional approaches to strategy that focus on traditional industry analysis are becoming increasingly ineffective. Take automotive companies. They're facing a variety of new digital threats, from Uber to Waymo, each coming from outside traditional industry boundaries. But if auto executives think of cars beyond their traditional industry context, as a highly connected, AI-enabled service, they can not only defend themselves but also unleash new



TECHNOLOGY



TECHNOLOGY

value—through local commerce opportunities, ads, news and entertainment feeds, location-based services, and so on.

The advice to executives was once to stick with businesses they knew, in industries they understood. But synergies in algorithms and data flows do not respect industry boundaries. And organizations that can't leverage customers and data across those boundaries are likely to be at a big disadvantage. Instead of focusing on industry analysis and on the management of companies' internal resources, strategy needs to focus on the connections firms create across industries and the flow of data through the networks the firms use.

All this has major implications for organizations and their employees. Machine learning will transform the nature of almost every job, regardless of occupation, income level, or specialization. Undoubtedly, AI-based operating models can exact a real human toll. Several studies suggest that perhaps half of current work activities may be replaced by AI-enabled systems. We shouldn't be too surprised by that. After all, operating models have long been designed to make many tasks predictable and repeatable. Processes for scanning products at checkout, making lattes, and removing hernias, for instance, benefit from standardization and don't require too much human creativity. While AI improvements will enrich many jobs and generate a variety of interesting

opportunities, it seems inevitable that they will also cause widespread dislocation in many occupations.

The dislocations will include not only job replacement but also the erosion of traditional capabilities. In almost every setting, AI-powered firms are taking on highly specialized organizations. In an AI-driven world, the requirements for competition have less to do with specialization and more to do with a universal set of capabilities in data sourcing, processing, analytics, and algorithm development. These new universal capabilities are reshaping strategy, business design, and even leadership. Strategies in very diverse digital and networked businesses now look similar, as do the drivers of operating performance. Industry expertise has become less critical. When Uber looked for a new CEO, the board hired someone who had previously run a digital firm—Expedia—not a limousine services company.

We're moving from an era of core competencies that differ from industry to industry to an age shaped by data and analytics and powered by algorithms—all hosted in the cloud for anyone to use. This is why Alibaba and Amazon are able to compete in industries as disparate as retail and financial services, and health care and credit scoring. These sectors now have many similar technological foundations and employ common methods and tools. Strategies are shifting away from traditional differentiation based on cost, quality, and brand equity and specialized, vertical expertise and toward advantages like business network position, the accumulation of unique data, and the deployment of sophisticated analytics.

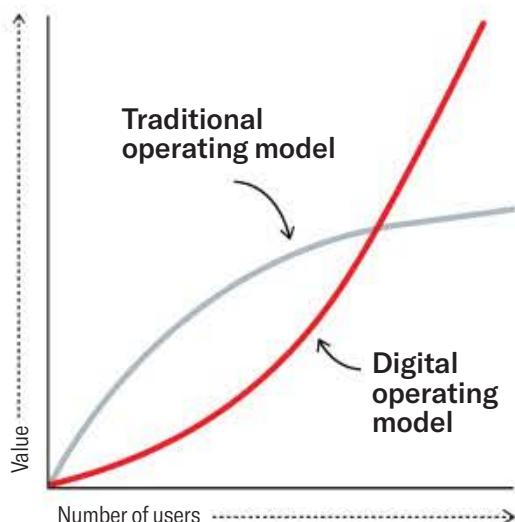
THE LEADERSHIP CHALLENGE

Though it can unleash enormous growth, the removal of operating constraints isn't always a good thing. Frictionless systems are prone to instability and hard to stop once they're in motion. Think of a car without brakes or a skier who can't slow down. A digital signal—a viral meme, for instance—can spread rapidly through networks and can be just about impossible to halt, even for the organization that launched it in the first place or an entity that controls the key hubs in a network. Without friction, a video inciting violence or a phony or manipulative headline can quickly spread to billions of people on a variety of networks, even morphing to optimize click-throughs and downloads. If you have a message to send, AI offers a fantastic way to reach vast numbers of people and personalize that message for them. But the marketer's paradise can be a citizen's nightmare.

Digital operating models can aggregate harm along with value. Even when the intent is positive, the potential downside can be significant. A mistake can expose a large digital network to a destructive cyberattack. Algorithms, if left unchecked, can exacerbate bias and misinformation on

How AI-Driven Companies Can Outstrip Traditional Firms

The value that scale delivers eventually tapers off in traditional operating models, but in digital operating models, it can climb much higher.



PUTTING AI AT THE FIRM'S CORE

→ The transition from a traditional firm to an AI-driven organization cannot happen in a skunkworks or be spearheaded by some separate autonomous group. It requires a holistic effort. In our research and our work with a variety of companies, we've come up with five principles that should guide transformations (beyond common best practices for leading change):

One strategy. Rearchitecting a company's operating model means rebuilding each business unit on a new, integrated foundation of data, analytics, and software. This challenging and time-consuming undertaking demands focus and a consistent top-down mandate to coordinate and inspire the many bottom-up efforts involved.

A clear architecture. A new approach based on data,

analytics, and AI requires some centralization and a lot of consistency. Data assets should be integrated across a range of applications to maximize their impact. Fragmented data will be virtually impossible to safeguard consistently, especially given privacy and security considerations. If the data isn't all held in centralized repositories, then the organization must at least have an accurate catalog of where the data is, explicit guidelines for what to do with it (and how to protect it), and standards for when and how to store it so that it can be used and reused by multiple parties.

The right capabilities. Though building a base of software, data science, and advanced analytics capabilities will take time, much can be done with a small number of motivated, knowledgeable people.

However, many organizations fail to realize that they need to systematically hire a very different kind of talent and set up career paths and incentive systems for those employees.

An agile “product” focus. Building an AI-centric operating model is about taking traditional processes and transforming them into software. Developing a product-focused mentality is essential to getting this done. Like the product managers at any world-class software development project, the IT teams deploying AI-centered applications should have a deep understanding of the use cases they're enabling—a product management orientation that goes well beyond the approach of traditional IT organizations. In the past, IT was largely about keeping old systems working, deploying software

updates, protecting against cyberattacks, and running help desks. Developing operating-model software is a different game.

Multidisciplinary governance. The governance of digital assets has become increasingly important and complex and calls for well-thought-out collaboration across disparate disciplines and functions. The challenges of data privacy, algorithmic bias, and cybersecurity are increasing risk and even government intervention and regulation. Governance should integrate a legal and corporate affairs function, which may even be involved in product and technology decisions. AI requires deep thinking about legal and ethical challenges, including careful consideration of what data should be stored and preserved (and what data should not).

a massive scale. Risks can be greatly magnified. Consider the way that digital banks are aggregating consumer savings in an unprecedented fashion. Ant Financial, which now operates one of the largest money market funds in the world, is entrusted with the savings of hundreds of millions of Chinese consumers. The risks that presents are significant, especially for a relatively unproven institution.

Digital scale, scope, and learning create a slew of new challenges—not just privacy and cybersecurity problems, but social turbulence resulting from market concentration, dislocations, and increased inequality. The institutions designed to keep an eye on business—regulatory bodies, for example—are struggling to keep up with all the rapid change.

In an AI-driven world, once an offering's fit with a market is ensured, user numbers, engagement, and revenues can skyrocket. Yet it's increasingly obvious that unconstrained

growth is dangerous. The potential for businesses that embrace digital operating models is huge, but the capacity to inflict widespread harm needs to be explicitly considered. Navigating these opportunities and threats will be a real test of leadership for both businesses and public institutions. ☰

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HEALTH CARE



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managing the most expensive patients

A new primary-care model can lower costs and improve outcomes.

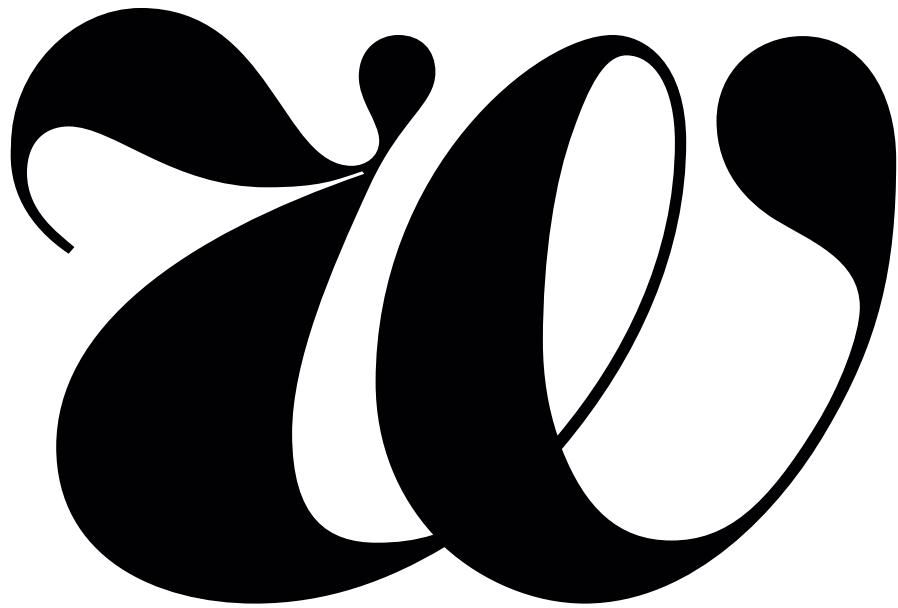


ILLUSTRATOR PAUL GARLAND





HEALTH CARE



hen corporate executives, health care leaders, and policy makers discuss the challenge of curbing U.S. health care costs, the conversation invariably turns to the sickest 5% of the population, who consume 50% of health care spending. For a long time the hope has been that improving the efficiency and quality of their treatment would significantly reduce the \$3.5 trillion that the United States lays out annually for health care. Over the past two decades this thinking has led employers, insurers, and health systems to embrace expensive disease-management programs that, operating in parallel with patients' primary-care physicians, use registered nurses and social workers to monitor, coach, and provide services to many people in the top 5%. While these programs do increase the quality of their care, our health system, Kaiser Permanente (KP), and nearly all others have found that they do not reduce net costs.

To learn why, KP started looking at internal studies of utilization and detailed information on care given its 4 million patients in Northern California, which had been captured by its electronic health record (EHR) system. KP's clinical researchers made two discoveries. First, the makeup of the most expensive 5% is much more heterogeneous than has been appreciated. The group comprises three roughly equal segments of patients with very different medical needs:

people with one or more chronic medical conditions that could be improved or kept under control; people who suffer a onetime catastrophic health problem; and people with severe chronic conditions who can't be returned to good health and require expensive treatment continually. Second, the people in the first two segments of the top 5% change unpredictably from year to year. All this explains a lot about why disease-management programs haven't delivered positive returns: They aren't designed to address the heterogeneity and unpredictability.

In parallel, KP developed a new model for treating people with multiple but relatively manageable chronic diseases—focusing on both those who are currently in the top 5% and those who could end up there in the coming years if their medical problems worsen and their health deteriorates. We believe that addressing this entire group of patients presents the biggest opportunity for improving outcomes and increasing savings. Our approach uses technology and relatively inexpensive medical staff to provide expanded support to primary-care doctors so that they can oversee and address the chronic needs of patients directly instead of relying on largely independent disease-management programs.

To date, we've implemented it in California, Virginia, Maryland, and the District of Columbia, and we've found that it significantly reduces costs *and* improves the quality of care. Despite the investments required, the leveraged-primary-care model has increased KP's operating margins, enabling it to offer nearly 5 million members of its network premiums that are 10% to 15% lower than its competitors'. The higher margins have also allowed KP to fund major capital investments (in excess of \$1 billion a year), to fulfill its obligations to care for the under- and uninsured, and to finance training for the next generation of doctors. KP's plans in Northern California and the mid-Atlantic region now consistently rank among the top five health plans in the nation for quality, and we believe the new model is one of the reasons why.

There is strong evidence that the model can be broadly adopted. Recognizing that KP's HMO structure, which combines an insurance plan and a health system, is unusual in the United States, one of us (Robert Pearl) decided to study three other primary-care organizations that use a model like KP's but don't have their own insurance plans. They operate in 17 states and collectively serve more than 250,000 people. These organizations, he found, had also achieved excellent quality at lower costs. Patients experienced fewer complications from chronic illnesses and avoided developing new ones and, as a result, visited emergency rooms and hospitals 20% to 50% less often. We believe this demonstrates that a leveraged-primary-care model could be used by any organization whose reimbursement is dependent on outcomes of care—rather than simply the volume of care provided.

In this article we'll share what we learned about the segments that make up the most expensive 5% of the patient population. And we'll describe our model in more detail, in the hope of encouraging other medical groups to adopt a similar approach and employers to demand it.



the three cohorts

When health care experts talk about the most expensive 5% of patients, they usually have in mind people suffering from chronic conditions such as diabetes, stable heart failure, asthma, and mental illnesses. These patients go to emergency rooms often, see doctors frequently, and require periodic hospitalization. The aim of disease-management programs is to improve their health—and reduce medical costs—through better care and coaching. But what the experts don't realize is that these people account for only a third of the most expensive 5% of patients and that the makeup of this cohort isn't constant; it changes from year to year.

Another third of the top 5% are patients who experience a onetime catastrophic health event: a major trauma, an extremely premature birth, or a sudden life-threatening illness such as acute cancer. The care for this second cohort consumes about 35% of the total spent on the 5% in a single year. But since most onetime events can't be predicted, there's little opportunity to achieve savings. Moreover, many of the people who are in this cohort one year will drop out of it the next as they recover or die.

The final third of the 5% are people with medical conditions such as severe heart failure and chronic renal disease, who require expensive, ongoing treatment every year. Many were in the first cohort years before but deteriorated, and with few exceptions (such as people who receive kidney, lung, and heart transplants), little can be done to restore them to good health or avoid large future medical bills. The people in this cohort also account for about 35% of the total dollars spent on the 5%. Although disease-management

programs can make their care more efficient and effective, most efforts to improve it have had a minimal net financial impact, because these patients need especially intense interventions and costly medications and therapies. In addition, most of them will require extensive and extremely expensive end-of-life care in the near future.

The bottom line here is that the actual opportunity to reduce the costs of caring for the most expensive 5% of patients is much smaller than is appreciated. The only cohort whose costs can be significantly reduced is the first, but these people account for just 30% of all the money spent on the top 5%. And the fact that the people in this cohort change every year means that to be truly effective, cost-savings programs need to target patients who *might* end up in it too. That's a huge group. Consider the nation's 55 million Medicare members over the age of 65. Roughly 27.5 million have five or more chronic conditions that could be kept under control with proper care, but only 4 million or 5 million of them end up in the first cohort of the top 5% in any given year.

Because the rest are also at high risk of landing in this cohort the following year, a care program would have to include all 27.5 million to achieve maximum success. For conventional disease-management programs, the cost of this would be wildly prohibitive. KP's leveraged-primary-care model obviates that difficulty by integrating the support staff directly into the primary-care doctor's practice, using people who command lower pay than registered nurses and social workers do, and by employing technology. Here are the key differences between the two approaches.

IDEA IN BRIEF

THE PROBLEM

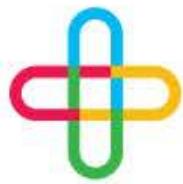
Half of U.S. spending on health care goes to treating the sickest 5% of the population. While disease-management programs have improved the quality of these patients' care, they're expensive and have not, as hoped, reduced costs.

THE CAUSE

The top 5% is more diverse than has been appreciated, and the people in some of its segments change constantly. Disease-management programs can't address this heterogeneity and unpredictability.

THE SOLUTION

Kaiser Permanente has developed a cost-effective model that uses relatively inexpensive medical assistants and technology to help primary-care physicians directly manage people with multiple but improvable chronic conditions—both patients who are already in the top 5% and those who are at risk of moving up into it.



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leveraged primary care vs. disease management

Disease-management companies typically organize nurses and social workers into teams that focus on just one disease, which means that patients with several chronic illnesses could be dealing with multiple teams. These interactions occur outside the primary-care physician's practice and often duplicate its work: Both the teams and the physicians monitor each patient's laboratory results, medications, and overall health. Most patients like the convenience of disease-management programs, which they can call on for help navigating the complex care-delivery system, scheduling visits with doctors, arranging transportation, and connecting with social services. Many also take advantage of the educational opportunities and coaching that such programs provide. But the dollars the programs consume could be better used to address the needs of far more individuals.

This expensive approach does make sense for patients with complex and persistently high-cost conditions such as end-stage kidney disease and severe cardiac or pulmonary problems, who are at constant risk of deteriorating and needing hospitalization. Avoiding just one ICU admission each year can cover a disease-management program's expense. Like other organizations, KP uses such programs to increase the quality of care for those patients.

But, again, applying this model to *all* people with multiple chronic diseases, or comorbidities, simply isn't economically feasible. An alternative model that many have tried—using registered nurses or nurse practitioners in the doctor's office to help care for patients with chronic diseases—also doesn't work. It, too, involves employing relatively highly paid people to perform many tasks that don't require their skills: screening databases, arranging laboratory services and radiology tests, obtaining information on each individual's subjective view of his or her health, asking whether the doctor's plan is being followed, and extracting the data needed to see if outcomes match physicians' expectations.

KP's model solves the problem of reaching a large population cost-effectively, by incorporating four components:

Integration with ongoing primary care. This avoids the duplication of services. But doctors still get support with

outreach, which allows them to leverage their expertise in the most efficient way possible.

Technology. The model uses four types. One is a comprehensive EHR system that provides physicians up-to-date information on each patient's condition, highlighting the need for additional treatments or testing. The system makes it easy for the physician and support staff to quickly order tests, change medications, send messages to patients, and monitor clinical results. It can also be used to find and prioritize individuals with chronic diseases who need attention before a routine visit. A second type is wearable devices that record data on blood pressure and weight. A third is computer-generated voice and text messages that remind patients about preventive screenings. And a fourth is a smartphone video function that allows doctors to monitor patients after they leave the hospital, immediately address new medical problems, and avoid readmissions.

Low-cost medical assistants. At KP each primary-care doctor is assigned a medical assistant. By communicating with the patient, reviewing information, readying it for the physician, relaying physician orders, and arranging transportation through community services, medical assistants help physicians manage patients' chronic diseases better—and at a small fraction of the cost of other approaches. They save doctors enormous amounts of time—just extracting all the data from electronic health records, assembling it, and organizing patients' clinical information could take several hours a day. While their pay varies by geography and union agreements, assistants make \$40,000 to \$50,000 a year, roughly half what registered nurses or nurse practitioners earn. Their training takes a year and is offered by community colleges, state colleges, and vocational schools.

Pharmacists. Added recently to the model, pharmacists can access laboratory data and, using protocols created by the physicians, make many of the medication changes needed, saving doctors even more time.

The new model enables each physician to economically provide continual care for about 1,800 patients—30% of whom have one or more chronic diseases—that's of much higher quality than conventional primary care. The doctor knows exactly what the medical assistant is doing, the specific drugs the pharmacist is titrating (fine-tuning the dosage of), and the preventive services the IT voice and text systems will encourage. The model also allows doctors to tailor visits to patients' needs: Rather than having everyone with chronic conditions automatically come in for a checkup every three to four months, they might schedule some individuals to return monthly for a longer visit and others whose lab results are in line with expectations to come in only once a year.



Although KP's program depends heavily on its sophisticated EHR system and a variety of internally developed computer applications, these types of analytic tools are increasingly available through commercial software vendors. A minimal investment in medical assistants and analytic software can generate savings (in the form of fewer emergency room visits and days in the hospital) that are a multiple of the dollars spent. Once implemented in a capitated health care organization—in which providers receive a fixed payment that covers each patient's expected health care services over a defined period and are also held accountable for high-quality outcomes—the model creates a virtuous cycle. Relatively low investments in primary-care practices improve the health of large populations of patients and generate progressively greater savings each year, which can be used to fund additional medical assistants and technology the next year.

ual's bathroom without bowel prep or the risk of intestinal perforation. The challenge is getting patients to participate. The leveraged-primary-care model greatly increases the percentage of patients who do: KP's screening rates are 90%—substantially higher than the U.S. rate of about 70%. As a result, while mortality from this cancer is declining nationally, for KP's members it's falling much more rapidly. When they visit their primary-care physicians, a medical assistant can check the EHR to see whether they need the test and, if they do, hand them a diagnostic kit. If a patient is in the appropriate age group but either didn't come for care that year or failed to return the kit, a computer application identifies the gap and sends a voice or text reminder. If necessary, the medical assistant can request that a kit be sent to that patient.

High blood pressure. According to an editorial by Naomi D.L. Fisher and Gregory Curfman in the November 6, 2018, issue of *JAMA*, high blood pressure, or hypertension,

superior outcomes

The leveraged-primary-care model isn't only cost-effective. Consider some of its successes in addressing these life-threatening, expensive diseases:

Colon cancer. Fifty percent of patients who die today from colon cancer—usually after running up massive medical bills (often more than \$200,000)—could have survived or even avoided the malignancy in the first place with proper screening. The majority of colon cancers take 10 years to progress from a benign polyp to an invasive cancer. If the polyp is identified and removed early, the malignancy never develops.

For the majority of people, precancerous and malignant polyps can be found through a simple stool test. When it's performed annually, its detection rates are the same as a colonoscopy's. The stool sample is obtained in the privacy of the individ-



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is “the single largest contributor to cardiovascular disease, causing stroke, heart failure, and coronary artery disease, and also is a major contributor to kidney disease.” The reasons it’s poorly controlled are complex but relate to two factors. First, it can take doctors a lot of time to fine-tune the correct dosage of hypertension medications for each patient. Second, many patients don’t take the prescribed medications consistently. A medical assistant can help physicians address the first issue by obtaining more-frequent blood-pressure readings in person or by analyzing data from remote monitors, and the second by calling patients or sending them email or text reminders. That’s the approach we take at KP, and as a result, 90% of our patients with high blood pressure have it under control, compared with only 54% across the United States.

Diabetes. The incidence of this chronic illness is growing, and that’s troubling, given that its complications can be grave and costly. When early foot and ankle irritations, abrasions, and ulcerations aren’t tended to, patients often end up requiring foot and lower-limb amputations. A medical assistant, inspecting potential problem areas via a smartphone’s video function, can encourage diabetes patients to be vigilant and immediately bring concerns to the physician’s attention, often weeks before the problem would otherwise have been identified during a routine visit.

More broadly, the KP approach—combined with other efforts to improve operational efficiency, maximize prevention and patient safety, and utilize “centers of excellence”—has allowed us to reduce hospitalizations for Medicare patients in California (where we own our own hospitals) to an average of 0.7 days per patient per year, which is half the national average. Before the model’s implementation, our rate was closer to 1.2 days per Medicare enrollee per year, or 85% of the national average.

Improvements in prevention have also reduced KP’s mortality rates. For example, KP members in California and the mid-Atlantic region are now 28% less likely to die from colon cancer, 40% less likely to die from sepsis, 43% less likely to die from heart disease, and 14% less likely to die from stroke than people in the U.S. population as a whole are. Previously, KP’s outcomes in these areas were only slightly better than the national averages and had not been near the best on either coast.



the model is broadly applicable

Many people assume that only large integrated organizations with multispecialty medical groups can use a model like KP’s. But as we noted, three smaller organizations have adopted one and seen patient outcomes and financial results similar to those we’ve had. All three are predominantly primary-care organizations with dozens of locations. All are paid on a capitated basis and focus on Medicare Advantage populations—especially the sickest enrollees, for whom Medicare pays a higher rate of reimbursement. They also serve many people who are dual eligible, or enrolled in both Medicare and Medicaid. At each organization, financial success depends on preventing complications and providing alternatives to hospitalization and trips to the emergency room—not on maximizing the volume of visits, procedures, or hospital stays.

Because their patients are much sicker than the typical Medicare enrollee, all three organizations assign fewer patients to each physician than the community average for primary care. They support primary-care doctors with office staff equivalent to KP’s medical assistants, promote more-frequent contact with enrollees, and use EHR systems to keep tabs on patients’ health, provide point-of-care decision support, and issue alerts and reminders. Also like KP, they use RNs and higher-paid case managers operating outside primary-care offices to coordinate the care of their hospitalized and sickest patients (those in the third cohort).

One of the three, ChenMed, has 59 primary-care clinics in eight states. Because the needs of the people it serves are so complex, it makes building a strong relationship between doctor and patient a high priority. In 2018 its physicians spent, on average, 189 minutes with each patient, compared with an average of only 20.9 minutes for all U.S. primary-care doctors. Even when those averages are adjusted to account for the increased risk of ChenMed’s population, its physicians devoted about twice as much time to seeing their Medicare patients as their counterparts in typical community-based office practices did. And that extra time appears to be well worth it: In comparison with national averages for other providers, ChenMed has 34% fewer emergency-room visits and 26% fewer hospital days per enrolled patient per year, and 16% fewer hospital readmissions per 1,000 Medicare members. Medicare Advantage has given ChenMed’s plans ratings of four to five stars (out of five) for quality and patient satisfaction. (Full disclosure: ChenMed paid one of us, Robert Pearl, for a day of consulting two years ago.)

ConcertoHealth, which operates in Ohio and Washington, has an especially strong focus on individuals who, because of their severe medical problems, low income, and disabilities,



The savings will grow even greater over time as outcomes get better for the entire population served and the total cost of caring for the sickest 5% of patients falls.

are eligible for both Medicare and Medicaid. More than 80% of ConcertoHealth's patients have at least three chronic diseases, and nearly 50% have a mental health diagnosis. Its leveraged-primary-care model has pushed its hospital utilization and readmission rates and emergency room visits below the national averages for Medicare patients, by 16%, 50%, and 17%, respectively. Medicare Advantage has given its plans four-star ratings.

Iora Health, which has 49 primary-care practices in 10 states, has seen similar reductions. According to 2018 data, patients who had been in its leveraged-primary-care program experienced a 15% reduction in hospital utilization after one year, a 24% reduction after two years, and a 42% reduction after three years. Iora's hospital utilization and readmission and emergency department usage rates are 40%, 36%, and 23% below the national averages for Medicare patients, and Medicare Advantage has given its plans 4.4 stars.

WE BELIEVE THAT in the years ahead KP's strategy of supporting primary-care doctors with medical assistants who are armed with advanced IT will save even more money. It can be applied to patients with any chronic health-threatening problem. Take cancer and type 2 diabetes. Smoking and a poor diet and lack of exercise are commonly identified as their leading causes, but in typical primary-care practices, doctors rarely have time to discuss those habits with patients in depth, steer them toward a more healthful path, and help them stay on it. But in a leveraged model, added support staff and information technology make those interventions possible. Also consider the large gap between optimal results and current patient outcomes in areas such as hypertension, blood lipid control, asthma management, and diabetes. Broad adoption of the KP approach, which data from the National Committee for Quality Assurance indicates is producing significantly better results, could help close it. And while the greatest value of the approach is its ability to improve the care of patients with multiple chronic diseases, it also can help increase the effectiveness of disease-prevention efforts for healthy individuals, extend lives, and reduce future costs.

A major obstacle to progress, however, is the fee-for-service payment system that still dominates U.S. health care and fails to adequately reward efforts to prevent diseases and

complications. Invariably, fee-for-service reimbursement leads to a higher volume of interventions—but not improved health outcomes. To increase the quality, convenience, and affordability of medical care, the country must rapidly move toward a capitated reimbursement system. As KP and other health systems have proved, capitation spurs the adoption of innovations that improve outcomes, reduce costs, and generate the funds needed to develop more innovations. (See “The Case for Capitation,” HBR, July–August 2016.)

Medicare has taken a number of initial steps to move from paying providers solely for the volume of procedures they perform to providing incentives and penalties based on the outcomes they achieve (which is known as value-based payment). This includes new programs for primary-care physicians announced in April 2019. If this effort gains momentum and large employers pressure private insurers to follow suit, it will make investments in a leveraged model much more attractive for primary-care physicians. Until then, the funding will have to come from the payers: insurance companies, employers, and state and federal governments.

Out of desperation to reduce their health care costs, some large employers and many health plans have contracted with disease-management programs, only to be largely disappointed with the results. It's time for large employers and insurance companies to change course. By funding more medical assistants and paying for IT systems similar to KP's, purchasers and insurers could see bottom-line improvements within a few years. The savings will grow even greater over time as outcomes get better for the entire population served and the total cost of caring for the sickest 5% of patients falls.

With the U.S. population aging, the incidence of chronic disease will continue to rise, driving up health care costs dramatically. The operational and capitated-payment approach used by KP and the three other medical groups offers a way to address this growing crisis.  **HBR Reprint R2001D**

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ORGANIZATIONAL
CULTURE

THE NEW ANALYTICS OF CULTURE

What email, Slack, and Glassdoor reveal about your organization

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ORGANIZATIONAL
CULTURE

ABOUT THE ART

In his project Cells, photographer Jean-Pierre Attal explores the social urban archaeology of modern office towers, revealing the recurrence of patterns and postures found inside.

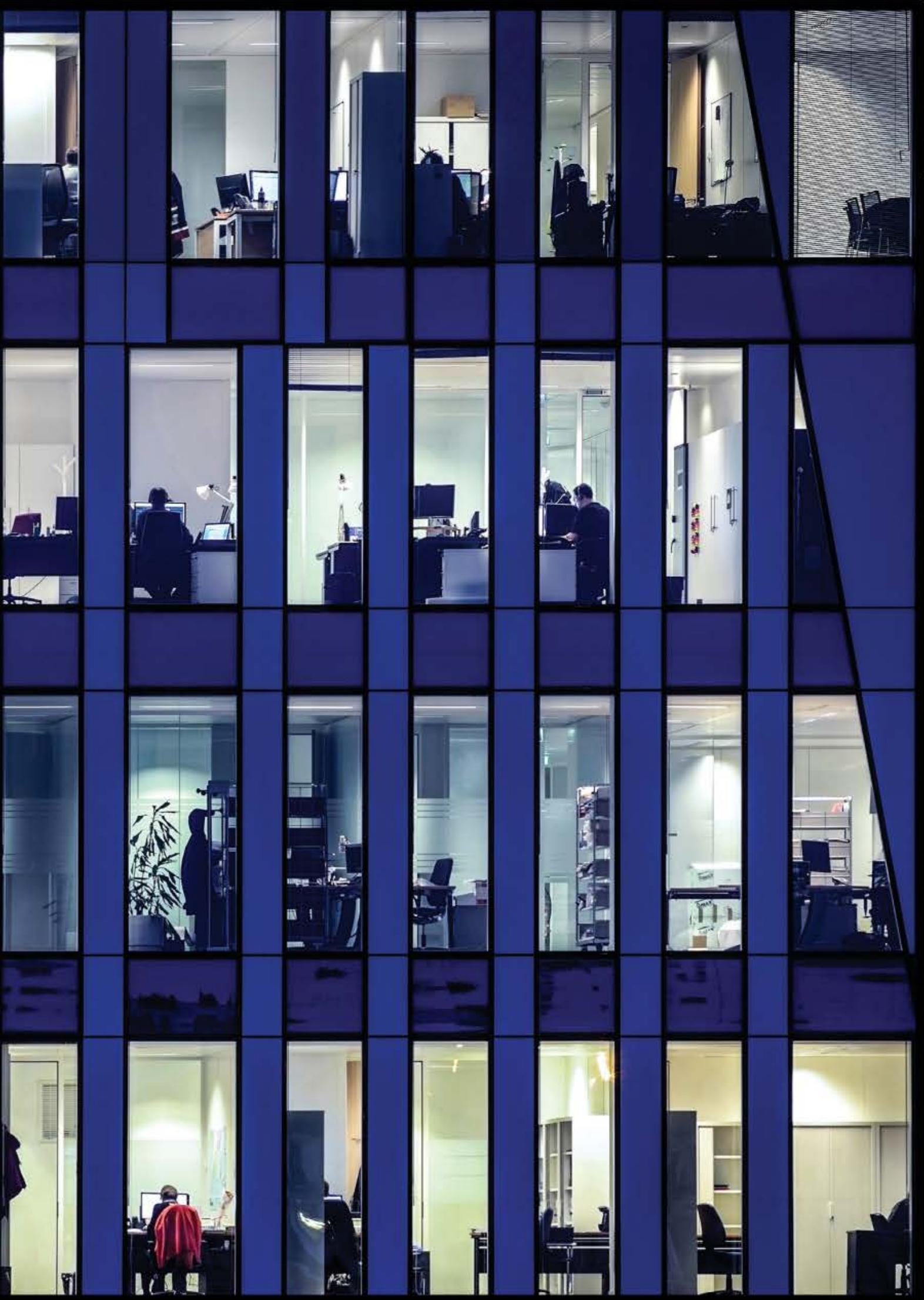
A BUSINESS'S CULTURE CAN CATALYZE OR UNDERMINE SUCCESS.

Yet the tools available for measuring it—namely, employee surveys and questionnaires—have significant shortcomings. Employee self-reports are often unreliable. The values and beliefs that people say are important to them, for example, are often not reflected in how they actually behave. Moreover, surveys provide static, or at best episodic, snapshots of organizations that are constantly evolving. And they're limited by researchers' tendency to assume that distinctive and idiosyncratic cultures can be neatly categorized into a few common types.

Our research focuses on a new method for assessing and measuring organizational culture. We used big-data processing to mine the ubiquitous “digital traces” of culture in electronic communications, such as emails, Slack messages, and Glassdoor reviews. By studying the language employees use in these communications, we can measure how culture actually influences their thoughts and behavior at work.

In one study, two of us partnered with a midsize technology company to assess the degree of cultural fit between employees and their colleagues on the basis of similarity of linguistic style expressed in internal email messages. In a separate study, two of us analyzed the content of Slack messages exchanged among members of nearly 120 software development teams. We examined the diversity of thoughts, ideas, and meaning expressed by team members and then measured whether it was beneficial or detrimental to team performance. We also partnered with employer-review website Glassdoor to analyze how employees talk about their organizations’ culture in anonymous reviews to examine





IDEA IN BRIEF

THE PROBLEM

Culture is easy to sense but difficult to measure. The workhorses of culture research—employee surveys and questionnaires—are often unreliable.

A NEW APPROACH

Studying the language that employees use in electronic communication has opened a new window into organizational culture. Research analyzing email, Slack messages, and Glassdoor postings is challenging prevailing wisdom about culture.

THE FINDINGS

- Cultural fit is important, but what predicts success most is the rate at which employees adapt as organizational culture changes over time.
- Cognitive diversity helps teams during ideation but hinders execution.
- The best cultures encourage diversity to drive innovation but are anchored by shared core beliefs.



the effects of cultural diversity on organizational efficiency and innovation.

The explosion of digital trace data such as emails and Slack communications—together with the availability of computational methods that are faster, cheaper, and easier to use—has ushered in a new scientific approach to measuring culture. Our computational-linguistics approach is challenging prevailing assumptions in the field of people analytics and revealing novel insights about how managers can harness culture as a strategic resource. We believe that with appropriate measures to safeguard employee privacy and minimize algorithmic bias it holds great promise as a tool for managers grappling with culture issues in their firms.

THE STUDIES

Our recent studies have focused on cultural fit versus adaptability, the pros and cons of fitting in, cognitive diversity, and the effects of diversity on organizational performance. Let's look at each in detail.

Fit versus adaptability. When managers think about hiring for cultural fit, they focus almost exclusively on whether candidates reflect the values, norms, and behaviors of the team or organization as it currently exists. They often fail to consider cultural adaptability—the ability to rapidly learn and conform to organizational cultural norms as they change over time. In a recent study two of us conducted with Stanford's V. Govind Manian and Christopher Potts, we analyzed how cultural fit and cultural adaptability affected individual performance at a high-tech company by comparing linguistic styles expressed in more than 10 million internal email messages exchanged over five years among 601 employees. For example, we looked at the extent to which an employee used swear words when communicating with colleagues who themselves cursed frequently or used personal pronouns ("we" or "I") that matched those used by her peer group. We also tracked how employees adapted to their peers' cultural conventions over time.

We found, as expected, that a high level of cultural fit led to more promotions, more-favorable performance evaluations, higher bonuses, and fewer involuntary departures. Cultural adaptability, however, turned out to be even more

important for success. Employees who could quickly adapt to cultural norms as they changed over time were more successful than employees who exhibited high cultural fit when first hired. These cultural "adapters" were better able to maintain fit when cultural norms changed or evolved, which is common in organizations operating in fast-moving, dynamic environments.

These results suggest that the process of cultural alignment does not end at the point of hire. Indeed, our study also found that employees followed distinct enculturation trajectories—at certain times in their tenure demonstrating more cultural fit with colleagues and at other times less. Most eventually adapted to the behavioral norms of their peers, and those who stayed at their company exhibited increasing cultural fit over time. Employees who were eventually terminated were those who had been unable to adapt to the culture. Employees who left voluntarily were the most fascinating: They quickly adapted culturally early in their tenures but drifted out of step later on and were likely to leave the firm once they became cultural outsiders.

To further assess how cultural fit and adaptability affect performance, Berkeley's Jennifer Chatman and Richard Lu and two of us surveyed employees at the same high-tech company to measure value congruence (the extent to which employees' core values and beliefs about a desirable workplace fit with their peers) and perceptual congruence (how well employees can read the "cultural code" by accurately reporting the values held by peers). We found that value congruence is predictive of retention—employees with it are less likely to voluntarily leave the company—but is unrelated to job performance. We found that the opposite is true of perceptual congruence: It is predictive of higher job performance but unrelated to retention. These results suggest that companies striving to foster a stable and committed workforce should focus on hiring candidates who share similar values with current employees. Employers needing people who can quickly assimilate and be productive should pay greater attention to candidates who demonstrate the ability to adapt to new cultural contexts.

The benefits of not fitting in. When might it better to hire a cultural misfit? People who see the world differently and have diverse ideas and perspectives often bring creativity and innovation to an organization. But because of their outsider status, they may struggle to have their ideas recognized by colleagues as legitimate. In a recent study two of us conducted with V. Govind Manian, Christopher Potts, and William Monroe, we compared employees' levels of cultural fit with the extent to which they served as a bridge between otherwise disconnected groups in the firm's internal communication network. For instance, an employee might have connections with colleagues that bridge both the engineering

and sales departments, allowing her to access and pass on a greater variety of information and ideas.

Consistent with prior work, we found that cultural fit was, on average, positively associated with career success. The benefits of fitting in culturally were especially great for individuals who served as network bridges. When traversing the boundary between engineering and sales, for example, they could hold their own in technical banter with the former and in customer-oriented discourse with the latter. People who attempted to span boundaries but could not display cultural ambidexterity were especially penalized: They were seen as both cultural outsiders and social outsiders without clear membership in any particular social clique. However, we also identified a set of individuals who benefited from being cultural misfits: those who did not have networks spanning disparate groups but instead had strong connections within a defined social clique. By building trusting social bonds with colleagues, they were able to overcome their outsider status and leverage their distinctiveness. These results suggest that an effective hiring strategy should strive for a portfolio of both conformists—or at least those who can rapidly adapt to a company's changing culture—and cultural misfits.

Cognitive diversity. Proponents of cultural diversity in teams presume that it leads to cognitive diversity; that is, diversity in thoughts and ideas. But the findings about whether cognitive diversity helps or hinders team performance are inconclusive. Part of the problem is that these studies use imperfect proxies for cognitive diversity, such as diversity in demographics, personalities, or self-reported beliefs and values. Moreover, this line of research has rarely looked at how diversity is actually expressed in communications and interactions, which is problematic given that team members are sometimes reluctant to share their real feelings and opinions. Finally, cognitive diversity is often assumed to be static, even though we know team dynamics frequently change over a project's life cycle.

In a new study, which two of us conducted with Stanford researchers Katharina Lix and Melissa Valentine, we overcame these challenges by analyzing the content of Slack messages exchanged among team members of 117 remote software-development teams. We identified instances when team members discussing similar topics used diverse meanings, perspectives, and styles, and then analyzed the impact of that diversity on performance. For example, in discussions of customer requirements, different interpretations of the desired look and feel of the user interface in some cases led developers to talk past one another and fail to coordinate but in other cases sparked creative new ideas.

Our results indicate that the performance consequences of cognitive diversity vary as a function of project milestone stages. In the early stages, when the team is defining the

problem at hand, diversity lowers the chances of successfully meeting milestones. During middle stages, when the team is most likely to be engaged in ideation, diversity increases the likelihood of team success. Diversity becomes an obstacle again toward the end of a project, when the team is deep into execution.

Cultural diversity and the organization as a whole.

We've seen that there are trade-offs associated with diversity in teams, but how does it affect the performance of entire organizations? Conventional wisdom holds that firms must choose between a homogeneous, efficient culture and a diverse, innovative culture. A homogeneous culture improves efficiency and coordination, the theory goes, because employees agree about the norms and beliefs guiding work, but the benefits come at the expense of fewer novel ideas about how to accomplish tasks. In contrast, a heterogeneous culture sacrifices the benefits of consensus in favor of healthy disagreement among employees that can promote adaptability and innovation. The evidence supporting this thinking, however, is scant and inconclusive.

In a recent study, we analyzed the language that employees used when describing their organization's culture (for example, "our culture is collaborative," "our culture is entrepreneurial," and so on) in anonymous reviews of nearly 500 publicly traded companies on Glassdoor. We first measured the level of interpersonal cultural diversity, or disagreement among employees about the norms and beliefs characterizing the organization. We found that interpersonal cultural diversity makes it difficult for employees to coordinate with one another and reduces the organization's efficiency as measured by return on assets.

We then measured the organizations' level of intrapersonal cultural diversity. Those with high intrapersonal cultural diversity had employees with a large number of cultural ideas and beliefs about how to accomplish tasks within the company (measured as the average number of cultural topics that employees discussed in their Glassdoor reviews). For instance, employees at Netflix conceptualized the work culture in terms of autonomy, responsibility, collaboration, and intense internal competition. We found that organizations with greater intrapersonal cultural diversity had higher market valuations and produced more and higher-quality intellectual property via patenting, evidence that their



employees' diverse ideas about how to do work led them to be more creative and innovative.

This suggests that organizations may be able to resolve the assumed trade-off between efficiency and innovation by encouraging diverse cultural ideas while fostering agreement among employees about the importance of a common set of organizational norms and beliefs. Again, consider Netflix: Although "multicultural" employees contributed to the company's diverse culture and drove innovation, the culture was nonetheless anchored by core shared beliefs, such as the importance of radical transparency and accountability, which help employees coordinate and work efficiently.

IMPLICATIONS FOR PRACTICE

How can these findings inform leaders' understanding of culture as a tool for improving the performance of employees, teams, and the broader organization?

First, managers can increase retention by hiring candidates whose core values and beliefs about a desirable

workplace align well with those of current employees. However, too much emphasis on cultural fit can stifle diversity and cause managers to overlook promising candidates with unique perspectives. Hiring managers should look for candidates who demonstrate cultural adaptability, as these employees may be better able to adjust to the inevitable cultural changes that occur as organizations navigate increasingly dynamic markets and an evolving workforce.

Hiring managers should also not overlook cultural misfits. They can be wellsprings of creativity and innovation. But to make sure they flourish inside the organization, managers should consider assigning them to roles in which they are likely to develop strong connections within particular social groups. That's because misfits need the trust and support of colleagues to be seen as quirky innovators rather than outlandish outsiders.

Second, leaders should be mindful that the expression of diverse perspectives in teams needs to be managed. Cognitive diversity is essential for generating novel, innovative solutions to complex problems, especially during the planning and ideation phases of a project. However, the expression of diverse

perspectives can quickly become a liability when the team needs to focus on execution and meet looming deadlines. It is during these times that team members have to unify around a common interpretation of the problem and come to agreement about what needs to get done to solve it. Leaders must be adept at switching back and forth, learning when and how to promote the expression of divergent opinions and meanings and when to create a context for convergence.

An important distinction is warranted here. The term “diversity” is often used to connote variation in the demographic makeup of a firm’s workforce. This has been particularly the case in recent years, as companies have tackled pernicious problems such as the underrepresentation of women and minorities in decision-making positions in organizations. In our work, we use “cultural diversity” to refer to variation in people’s beliefs and normative expectations, irrespective of their demographic composition. As we pointed out earlier, demographic and cultural diversity are related, but a demographically homogenous group may be culturally diverse, and vice versa. Our research on cultural diversity is relevant to but ultimately independent of efforts to increase gender, race, and ethnic diversity in firms.

Third, leaders should foster a culture that is diverse yet consensual in order to promote both innovation and efficiency. Such a culture is composed of multicultural employees who each subscribe to a variety of norms and beliefs about how to do work. These diverse ideas help employees excel at complex tasks, such as dreaming up the next groundbreaking innovation. Managers should encourage employees to experiment with different ways of working—extensive collaboration for some tasks, for example, and intense competition for others. At the same time, a culture should also be consensual in that employees agree on a common set of cultural norms—shared understandings—that helps them successfully coordinate with one another. Leaders can signal the importance of these norms during onboarding and in everyday interactions, just as leaders at Netflix do by rewarding employees for sharing their mistakes with colleagues in order to promote beliefs about the value of transparency.

A NEW MANAGEMENT TOOL

Many of the tools we used in these studies are off-the-shelf products, and there is great potential for managers to use them to help solve practical challenges inside organizations. For instance, Stanford PhD candidate Anjali Bhatt is working with two of us to demonstrate how language-based culture measures can be used to anticipate the pain points of post-merger integration. We are studying the merger of three retail banks, and analysis of emails has revealed stark differences



in the rates of cultural assimilation among individuals. Such tools can be used diagnostically to assess the cultural alignment between firms during premerger due diligence, as well as prescriptively during integration to identify where and how to focus managerial interventions.

Yet the accessibility of these tools also raises important ethical concerns. In our work, we maintain strict employee confidentiality, meaning that neither we nor the organization is able to link any employee to any specific communication used in our studies. We also strongly advise against using these tools to select, reward, or punish individual employees and teams, for at least four reasons: Accurately predicting individual and team performance is considerably more challenging than estimating average effects for broad types of individuals and teams; culture is only one of many factors influencing individual and team performance in organizations; algorithmic predictions often create a false sense of certainty in managers; and finally, giving any algorithm undue weight can have unintended consequences—for instance, exacerbating human biases that negatively affect women and members of underrepresented social groups.

Algorithms make estimates, but it is ultimately humans’ responsibility to make informed judgments using them. Managers must be vigilant about keeping metadata anonymous and must regularly audit algorithmic decision-making for bias to ensure that the use of language-based tools does not have unintended adverse consequences on culture itself—for instance, by breeding employee distrust.

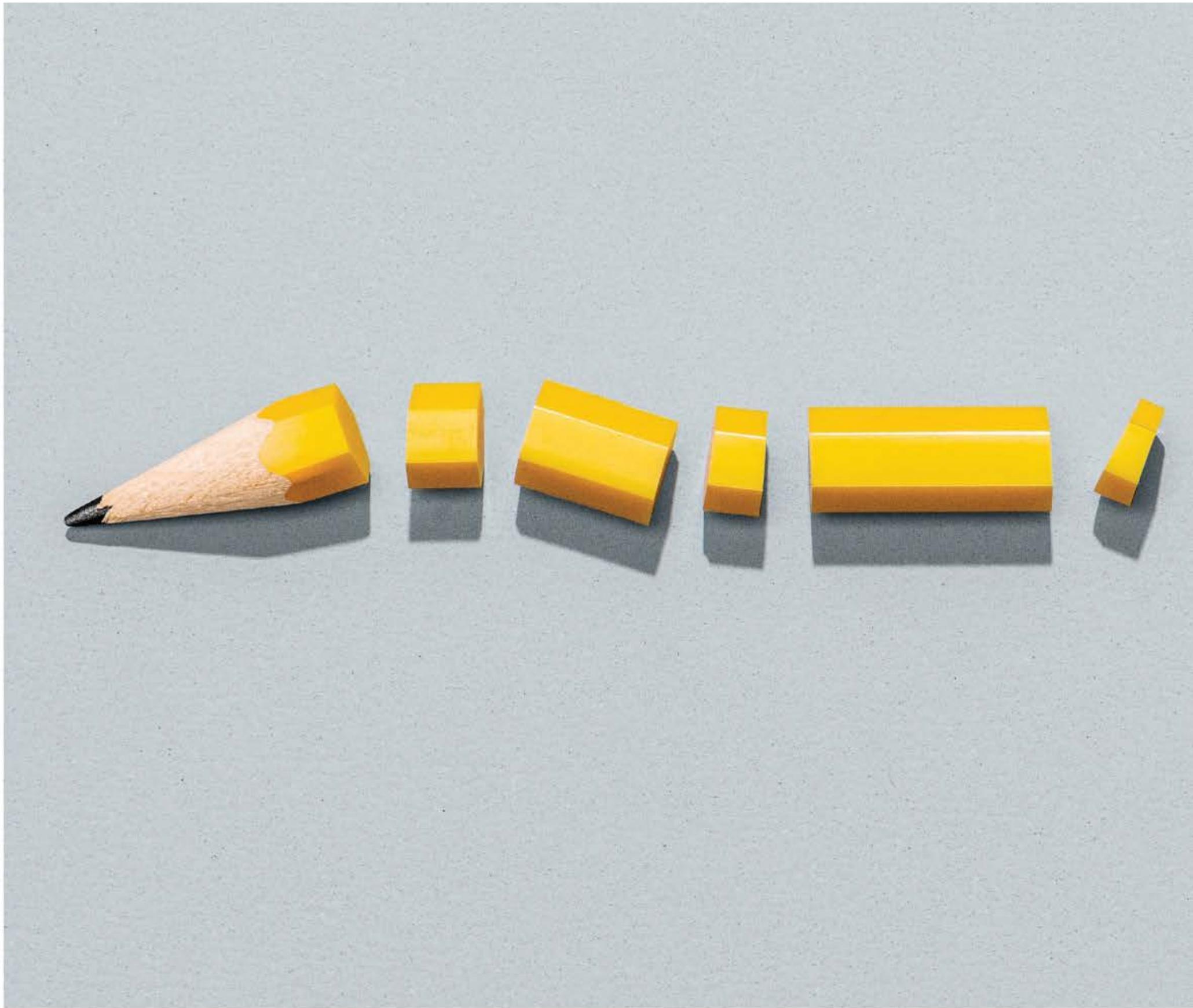
These important ethical questions notwithstanding, we believe that these tools will continue to generate insights that allow managers to finally manage the culture as a strategic resource, and ultimately lead to more culturally diverse and inclusive teams and organizations. ☰

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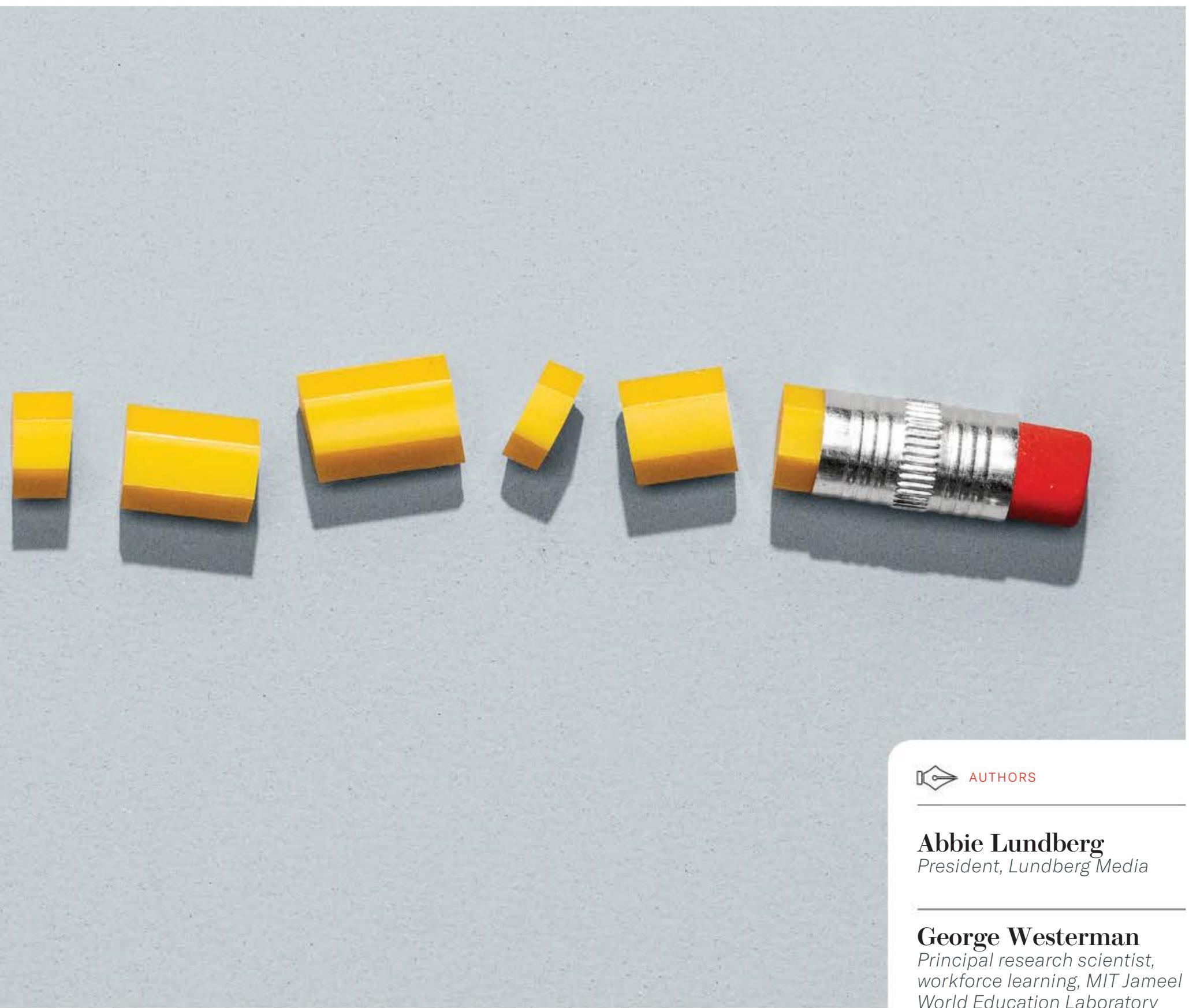
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the **TRANSFORMER CLO**



The role of chief learning officer isn't just about training anymore.



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HUMAN
RESOURCES

IDEA IN BRIEF

THE SITUATION

The fast-changing nature of business today means that employees' continual learning is vital for organizational success.

THE RESPONSE

Chief learning officers are assuming a more expansive role, aiming not only to train employees but also to transform their organizations' capabilities and make learning an integral part of the company's strategic agenda.

THE SPECIFICS

Extensive interviews at 19 large companies revealed that "transformer CLOs"—those who are embracing this expanded role—are driving changes in their enterprises' learning goals, learning methods, and learning departments.

IN TODAY'S DYNAMIC BUSINESS ENVIRONMENT,

workplace learning has become a key lever for success. And with that shift, the traditional role of the chief learning officer is changing. No longer are CLOs responsible just for training—making skills-based and compliance-oriented courses available to employees and perhaps running leadership-development programs. Instead, they're embracing a more powerful role in which they reshape capabilities and organizational culture. We call this new type of leader the *transformer CLO*.

Transformer CLOs are strong senior managers whose mission is to help their companies and their employees thrive, even as technologies, business practices, and whole industries undergo rapid change. The transformer CLO role is not reserved for the lucky few whose CEOs see learning and development as essential; any CLO can take steps to fundamentally change the nature of learning in an organization.

We recently conducted extensive interviews with 21 senior learning officers at 19 large companies to find out how they conceive of their roles and organizations. This research, which builds on our prior work on digital leadership and culture, revealed that transformer CLOs are driving three principal types of change in their enterprises. They're transforming their

organizations' *learning goals*, shifting the focus from the development of skills to the development of mindsets and capabilities that will help workers perform well now and adapt smoothly in the future. They're transforming their organizations' *learning methods*, making them more experiential and immediate, and atomizing content for delivery when and where it's needed. And they're transforming their organizations' *learning departments*, making them leaner, more agile, and more strategic.

TRANSFORMING LEARNING GOALS

The need for organizations to become more adaptable means changing the goals of corporate learning. Instead of narrowly focusing on job- or compliance-related training for all but their high-potential leaders, organizations should cultivate every employee's ability to explore, learn, and grow. The objective is not only to train people but also to position the company for success. To achieve this, CLOs should strive to do the following:

Reshape leadership development.

Creating a true learning organization starts at the top, with preparing executives to lead in new ways. One company that has done this well recently is Standard Chartered, a multinational financial-services company. Three years ago, under a new CEO, Standard Chartered launched



Organizations should cultivate every employee's ability to explore, learn, and grow—not only to train people but also to position the company for success.





HUMAN
RESOURCES



Transformer CLOs are moving away from traditional classroom training; they are personalizing, digitizing, and atomizing learning.

a strategy that fundamentally changed the way it does business—and required its leaders to build new strengths. “We’d been doing executive development for years,” said Ewan Clark, the company’s global head of leadership effectiveness and organizational development. “But a lot of it had been about either pure self-actualization or aspects of coaching. This time we’ve put the organizational agenda right in the center of executive development, and we’ve said that leadership is about developing the skills, capabilities, and value behaviors to lead this agenda.”

As part of that effort, the company began teaching leaders to augment their experience and intuition with investigation, experimentation, and data-driven analysis when making decisions about their parts of the organization. Their instructions, according to Clark, were straightforward: “Articulate a hypothesis. Go out and experiment. And if it doesn’t work, then why not? What did you learn? Add to it. Capture your learning. Share it with other people.” This new approach required changes in the leaders’ mindsets, not just their skills and procedures.

It’s not enough, though, to improve leadership capabilities at the very top of the organization. To effect widespread change, organizations need strong leadership to cascade down. Cargill, a privately held food and agriculture business, achieved this by democratizing learning. As Julie Dervin, the company’s global head of corporate learning and development, told us, “We really only had the capacity to reach about 10% to 15% of the total relevant population in a given year when delivering a particular learning program. Unintentionally, we were creating a learning culture where only a select few got access to high-quality training.” Dervin and her team resolved to fix that problem. “We’ve been fundamentally changing how we design, deliver, and shape those learning experiences to be able to reach exponentially more learners with high-impact learning,” she said.

Concentrate on capabilities, not competence. In their change programs, transformer CLOs focus less on teaching currently needed skills and more on developing mindsets and behaviors that can enable employees to perform well in tasks that may not yet be defined. This shift may also mean moving away from comprehensive skills inventories and competency maps, which can lead people to check boxes rather than build capabilities. “We don’t really know enough

about what the world will look like in the next couple of years to be able to predict exactly what skills we will need,” said Amelie Villeneuve, the head of the corporate university at UBS, the multinational financial-services firm. “If you focus on building individual microskills, you may be missing the bigger picture.”

Emphasize digital thinking. The transformer CLOs we interviewed have sought to develop digital awareness and aptitude in their employees. Singapore-based DBS Bank, for example, created a learning curriculum that aims to build seven priority skills for digital-business success. (See the exhibit “Vital Skills for a Digital World.”) “While not everyone needs to be an expert at each of these,” said David Gledhill, who served as the company’s chief information officer until August 2019, “we want them to know enough so that they understand the transformation we’re driving and contribute great ideas.”

One priority, for instance, is to get people more comfortable using data in decision-making. Data-driven thinking is key for almost everyone in an organization, but in different ways. Frontline sales and service reps need to be aware of information about customer preferences and behaviors. Executives must learn to trust and value data even when it contradicts their past experiences and gut feelings.

Leaders often don’t know what to do with all the data that digital innovations are making available to them, said Nancy Robert, who, as the executive vice president of the American Nurses Association, led the design and delivery of training for millions of the organization’s members. As Robert put it, nurses don’t necessarily have the “digital-data competency” to answer the questions that confront them. “How am I going to interpret that data and integrate it into the rest of the care?” she said. “That takes a very different cognitive skill.”

Cultivate curiosity and a growth mindset. CLOs can amplify their teams’ energies and capabilities by fostering a “pull” model of learning, in which employees set their own agendas for gaining knowledge and skills. Doing that, however, requires an environment that sparks employees’ curiosity and ignites in them the desire to learn and grow. Villeneuve has worked on this at UBS and previously at Google, where, she said, she learned how it is possible to “accelerate wisdom more effectively by providing a series of contexts where people can play and learn at the same time.”

VITAL SKILLS FOR A DIGITAL WORLD

To equip its employees for success in today's digital business environment, DBS Bank focuses on imparting skills in seven areas.

Digital communications

Using social media and other electronic means of communication to promote products effectively and connect with a target audience

Agile practices

Working as a team to drive business value and mitigate risks, while allowing for adaptive planning and continuous improvement

Digital business models

Learning how digital innovations are changing the business landscape, and how employees and their organizations can thrive in this new environment

Compliance and risks

Innovating while staying conscious of risks and complying with regulations

Journey thinking

Applying human-centered design to transform customer and employee journeys

Digital technologies

Using electronic tools and systems to reduce complexity and improve the way people work

Data-driven thinking

Using data to make better decisions, "see" the outcomes of those decisions, and craft results-driven strategies

Source: Adapted from company documents

Leaders at DBS Bank launched a number of programs to find out what would inspire curiosity among their employees. One notable success is GANDALF Scholars, in which employees can apply to receive grants of \$1,000 toward training on any work-related topic, as long as they agree to teach what they learn to at least 10 other people.

When you engage employees in teaching, as DBS is doing, you expand and deepen learning. Rahul Varma, the senior managing director for talent at Accenture, calls this a "leaders teaching leaders" philosophy. "You learn the most," he said, "when you actually have to teach somebody what you learn." This approach turns the natural curiosity and energy of any single employee into learning opportunities for many others. It certainly seems to be working at DBS: As of early 2019, 120 grant recipients had gone on to train more than 13,500 people—4,000 in person and the rest through digital channels. According to Gledhill, many GANDALF Scholars report that the teaching component of the program is their favorite part. "What they enjoyed most," he said, "was the empowerment."

UBS, DBS, Accenture, and other companies that have embraced a growth mindset subscribe to two beliefs: that everyone's abilities can and must be developed if the organization is to thrive in a fast-moving environment, and that innate talent is just the starting point. But for a growth mindset to become part of the company's culture, all employees must internalize those beliefs. That won't happen unless learning is pervasive, available to everybody who might benefit from it. And that requires rethinking the way learning is delivered.

TRANSFORMING LEARNING METHODS

Until recently, providing learning to all employees was too expensive, and there weren't enough trainers. Employees almost always had to be physically present at training sessions, which often meant traveling and missing time at work. That naturally limited the number of participants, making learning an exclusive rather than a democratic opportunity.

Now things have changed. Peer teaching greatly expands the number of trainers and expert content developers. And digital instruction expands the reach of learning opportunities to more employees without the company's having to worry about enrollment numbers, scheduling conflicts, or travel costs. Employees can access learning when and where they need it, often from colleagues who live the topic every day.

Transformer CLOs are taking advantage of all these developments. Perhaps most visibly, they are moving away from traditional classroom training in which people are exposed to the same content for the same amount of time regardless of their particular needs and levels of understanding. Instead, these CLOs are personalizing, digitizing, and atomizing learning. They are shifting their attention from specific courses to the whole learning experience.

To accommodate the different preferences employees have for how they consume and absorb information, a growing number of companies now make training available through a variety of media—text, audio, video, and more. Transformer CLOs go even further. They're introducing innovations such as programs that set aside learning time on people's calendars, and mobile apps that pose leadership questions to managers during their day. They're offering games and simulations and encouraging the company's own subject-matter experts to produce YouTube-type instructional videos. They're even exploring the use of artificial intelligence to develop recommendation engines that, guided by individual and peer behavior, will suggest tailored learning activities to employees. In short, transformer CLOs do everything possible to create engaging and effective experiences that meet employees wherever they happen to be, geographically, temporally, or intellectually.

DIGITAL OR FACE-TO-FACE TRAINING?

Deutsche Telekom considers a number of factors when deciding how best to present specific learning programs.

FORMAT	CONTENT	TARGET AUDIENCE	DEVELOPMENT AND DELIVERY CONSIDERATIONS
Purely digital formats	Best suited for: <ul style="list-style-type: none">→ Hard skills→ Mandatory training→ Simple topics→ Durable, reusable material	<ul style="list-style-type: none">→ Larger groups→ Geographically dispersed or mobile employees, such as those in sales and field service	<ul style="list-style-type: none">→ More time required to produce nonstandard material→ Higher up-front cost to produce nonstandard material→ Lower cost to deliver per user→ No need for trainers or videoconferencing facilities at the location
Face-to-face or blended formats	Best suited for: <ul style="list-style-type: none">→ Soft skills→ Ad hoc training→ Complex topics→ Material that changes frequently	<ul style="list-style-type: none">→ Smaller groups→ Geographically concentrated employees→ Employees being onboarded	<ul style="list-style-type: none">→ Less time required to produce nonstandard material→ Lower up-front cost for course preparation→ Potential higher cost to deliver, but possibility of using existing staff as trainers→ Need for training rooms or videoconferencing at the location

Source: Adapted from company documents

Optimize the inventory of learning resources. CLOs need to be selective about what learning materials to stock and how to supply them. At GE Digital, Heather Whiteman, the company's former head of learning, used analytics with her team to study hundreds of courses taken by thousands of employees—and then systematically rooted out those found lacking, not just in terms of usage and ratings but in their effects on employee growth. “If a course didn’t move the dial for capabilities that lead to performance,” she told us, “we would drop it in favor of one that did.”

Similarly, Villeneuve and her team at UBS used analytics to optimize the learning inventory. The bank had a wealth of training materials online, but analysis showed that many employees who searched for those materials gave up before finding what they needed. Armed with that knowledge, Villeneuve and her team focused on developing a core of fewer but better resources. Then, applying principles of behavioral science, they designed a user interface that put no more than six items on a page, with no more than three clicks needed to get to any item. The results have been remarkable: Ten times more employees now engage with the materials on the company’s core learning shelf.

Balance face-to-face and digital learning. CLOs should experiment to get the right mix of face-to-face and digital learning. Cargill, which until recently allocated 80%

of its budget to in-person training and only 20% to digital training, is in the process of flipping that ratio around. Dervin and her team have redesigned the company’s leadership-development programs to put some of the coursework online. Senior leaders initially had reservations about the effectiveness of digital instruction and worried about losing opportunities to network and build relationships. But those misgivings were short-lived. The first three cohorts who tried the online learning ended up enjoying the experience so much that they engaged in more training than was required. “What we’re seeing,” Dervin said, “is that this goes hand in glove with the pace and the rhythms of their day-to-day, and they’re loving the flexibility it provides.”

Deutsche Telekom, for its part, has developed a matrix to help determine whether a given offering might be better handled with face-to-face instruction, a purely digital approach, or a blend of the two. The matrix helps leaders weigh multiple factors: the type of content, the target audience, and development and delivery considerations. (See the exhibit “Digital or Face-to-Face Training?”)

Rethink face-to-face learning. As engaging and effective as digital learning experiences can be, face-to-face learning is still important—although it may take new forms. Accenture employs some very sophisticated digital learning platforms and tools and has a vast library of online content, but Varma’s



The sooner and the more often that learning gets applied in real-life situations, the more likely it is to stick.



experience is that digital learning goes only so far. “What we’ve found,” he said, “is that there is no substitute for getting people together in cohorts that are cross-cultural and cross-functional.” To achieve that without requiring employees to be in the same physical space, Accenture has created more than 90 “connected classrooms” around the world. These enable the company to offer all employees some types of training—classes in design thinking, for example—that are taught by in-house experts in several different locations. “One facilitator could be in Bangalore, another could be in Manila, and another in Dalian, China,” Varma told us. People are still learning from people, but thanks to videoconferencing and other interactive technologies, along with more-collaborative approaches to learning, traditional geographic constraints no longer apply. Teams all over the world now coach one another and solve problems together. “That is how we do learning, every single day,” Varma said.

Some companies have pursued another approach for their face-to-face learning: They’ve created hands-on simulations in which participants must solve real-life problems. At UBS, employees take part in “three-dimensional case studies” in order to develop key capabilities, such as the ability to influence stakeholders or rethink a company product. The interactive case studies test not only their knowledge and intellectual skills but also how they engage with others and react as the situation unfolds. As Villeneuve told us, “They have to do it all together, and they get feedback on everything at the same time.”

Similarly, operational professionals at DBS spend three days in a simulation exercise that involves transforming a hypothetical old-school bank into a full-fledged digital bank. They work with trainers and colleagues from other parts of the business to tackle staffing and resourcing issues and handle crisis situations unique to the digital world. An element of competition heightens the intensity and engagement.

Go beyond instruction. Transformer CLOs believe that instruction alone is not sufficient for meaningful learning. Accenture’s Varma anchors his approach in what he calls the three I’s: instruction, introspection, and immersion.

Instruction comes first, of course. But then trainees need to engage in reflection—the introspection part of Varma’s three I’s. This might involve giving employees time to privately mull over what they’ve learned, having them talk

it over with a fellow trainee on a walk, or providing a formal opportunity during class to discuss it with a whole cohort.

After introspection comes immersion, or putting what’s been learned into practice. The sooner and the more often that learning gets applied in real-life situations, the more likely it is to stick. After a time, individuals can return for more instruction.

Fidelity Investments includes all three elements of this model in a single learning experience for some of its customer-facing associates, according to Wendi Kennedy, the head of learning in the company’s Personal Investing division. Trainees spend a few hours exploring digital content and experiential assignments on their own, discuss what they’ve learned with their colleagues, and then apply the learning in actual customer interactions while the instructors can watch and help them adjust their actions. Gone are the days, Kennedy told us, when trainees spent eight straight hours in the classroom.

Cargill gets at the three I’s in a slightly different order, moving from instruction to immersion to introspection, in what it calls its application challenge. In this model, employees are taught a concept or small lesson, which they apply immediately. They then fill out a field report describing how things went, what they learned, and what questions they have, or they present a sample work product, such as a new type of data model they learned to build, and solicit feedback from their cohort. The idea, Dervin told us, is to “design an experience and integrate it tightly with the work so it’s relevant, using bite-sized content so that it’s just what they need when they need it.” Such “microlearning” is an increasingly important tool in today’s learning arsenal.

TRANSFORMING LEARNING DEPARTMENTS

To make the trainer-to-transformer vision a reality, CLOs are redesigning their departments to be smaller, nimbler, and more strategic. Instead of simply taking requests and providing training for specific skills, they are teaming up with the leaders of other business units to dramatically improve capabilities, performance, and even culture throughout the organization.

To support this new approach, CLOs are hiring learning strategists, experience designers, curators, and software



HUMAN
RESOURCES



Accenture's learning boards show the appeal and usefulness of learning from colleagues as well as professional instructors.

developers. They're helping employees become peer teachers, guides, and coaches. And they're applying agile and lean start-up principles to their efforts to devise learning programs. At Fidelity, for example, Kennedy and her team take a minimum-viable-product approach that mirrors the method fast-moving companies use to create new products. They work with stakeholders to determine what learning is needed, come up with a basic learning module to address a particular need, get it out fast, gather feedback, and then repeat the process until the trainees who work with the material give it a sufficiently high Net Promoter Score (NPS).

As chief learning officers rethink how their departments operate, they should keep these recommendations in mind:

Act as curators and cocreators. Increasingly, transformer CLOs are identifying useful external content—everything from university courses to blog posts to YouTube videos—and combining it with internal content developed in consultation with the company's subject-matter experts. At Accenture, this approach allows the company to constantly provide its employees with the most current insights on emerging technologies, which they can then share with clients. As Varma told us, "We need to be able to train a group of people very quickly to understand what a technology is, how it will impact their specific industry, and how they will deliver innovation to their clients."

To provide high-quality, relevant learning at scale, Varma and his team created a framework and tools to help in-house subject-matter experts develop their own learning boards (think Pinterest boards for different topics in the business). These then become easily accessible, on-demand learning modules. It's been a remarkably successful approach. As of early 2019, employees throughout the company had created more than 2,500 learning boards. They have become so popular, Varma said, that they're now "embedded in the fabric of how people learn."

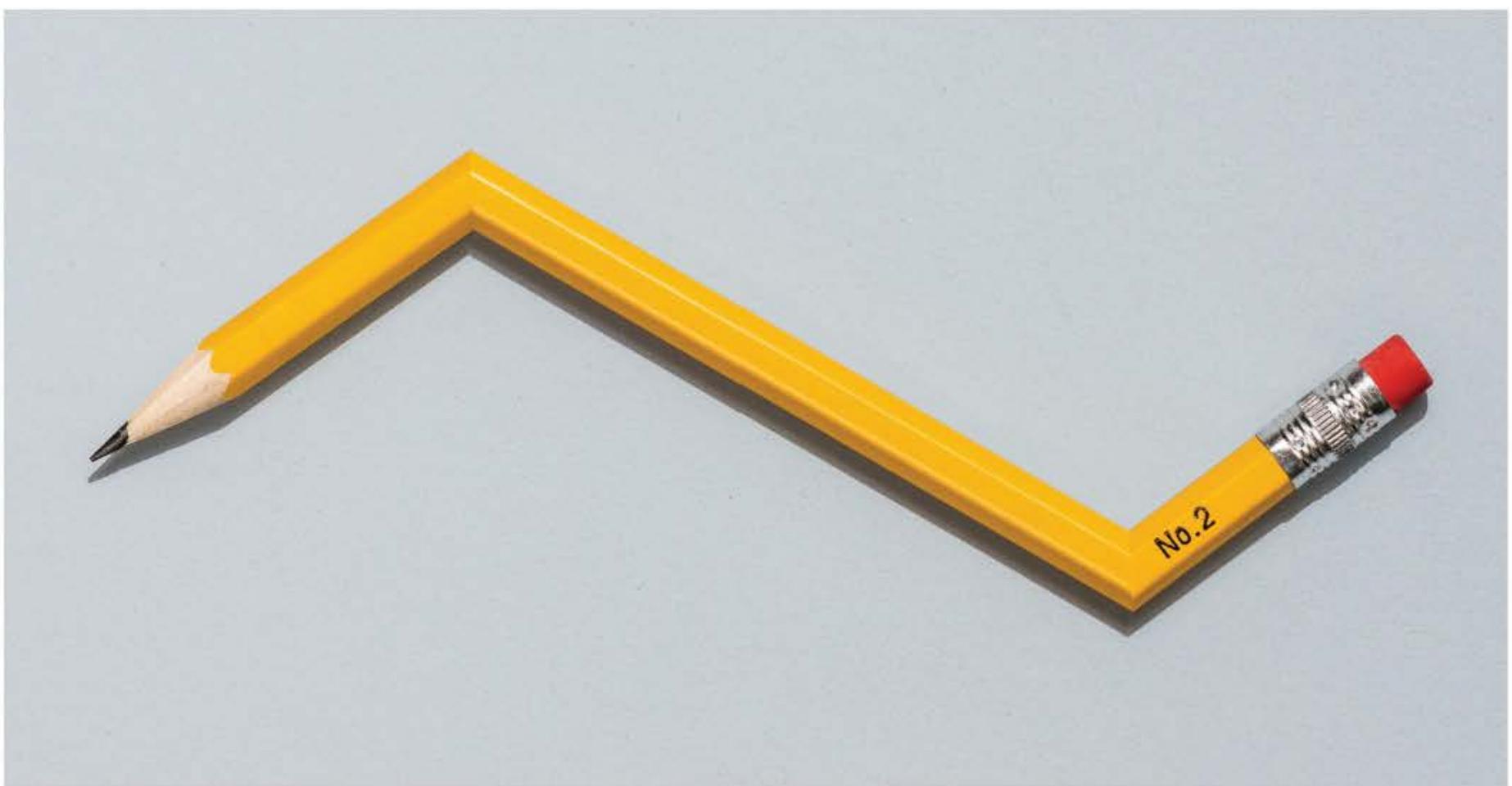
Foster learning from peers. Accenture's learning boards show the appeal and usefulness of learning from colleagues as well as professional instructors. It's a practice that DBS Bank has adopted, too, going beyond its GANDALF Scholars program to launch Back to School, a series of employee-led training sessions. In multiple classrooms around the world, 45-minute sessions take place throughout the day for as long as a week. Classes cover technical subjects (such as DevOps

and machine learning), business topics (for example, how the credit-card industry makes money), and "softer" subjects (such as personal branding and business storytelling). These courses are taught not by formal instructors but by internal subject-matter experts—managing directors, middle managers, and even new associates—whose range in seniority helps promote a culture in which expertise is valued over rank. The program is hugely popular: For a recent session on consumer banking, in which experts from the business side taught classes to employees from the technology side, and vice versa, all 1,700 seats were snapped up in just three hours.

Peer learning can arise anywhere in an organization, of course, not just within the formal learning department. Transformer CLOs pay attention to this. When new learning activities spring up, they investigate what's happening and why. If the new effort has merit, they figure out how to support and amplify it. That's what happened at Deutsche Telekom after an employee in one part of the business made use of the company intranet to start a forum called From Experts, For Experts. According to Stephan Kasulke, the company's CLO, the program went viral: Not long after its launch, more than 1,000 people were participating. "It was a totally bottom-up, self-developed thing," Kasulke said. Recognizing the program's value, he and his team got involved. "We took some key people who had organized it and said, 'OK, what can we do to help you become even bigger and more effective?' They came up with some technical things for sharing, and we are now supporting the program."

Measure impact. Determining the impact of training can be difficult. The key is to consider multiple measures of how learning contributes to the organization's overall strategy.

Telstra, the Australian telecom giant, adopted this approach for assessing its most strategically important technical and leadership programs. To judge how well it was training a large group of engineers who worked in software-defined networking, the company had both the engineers and their leaders assess their abilities. The learning department added that data to an analysis of the engineers' various certifications and accreditations and then worked with an external vendor to develop an 80-question test targeting relevant areas of technical expertise. All that information was then folded together to arrive at a durable and meaningful measurement of proficiency.



In some cases, measuring the business outcomes that result from training is also possible—and important. The type of measurement will depend on a person's job function or role. For example, companies can look at sales results and end-customer NPS for employees who own client accounts; cycle time and defect rates for operations staff; and productivity and customer satisfaction for software developers. For roles where output is tougher to measure, most CLOs rely on subjective assessments from the individuals and their managers—often some type of 360-degree evaluation.

Although companies have only recently begun to tie learning experiences to employee performance in most occupations, transformer CLOs are making this an important element of their strategy. That's what Fidelity is doing by making same-day determinations about whether workers who go through training do a better job of handling customer calls afterward, and it's what GE Digital is doing by tracking which courses are associated with capability improvements in salaried staff from year to year.

Companies are also starting to build tools that tailor learning plans to individuals. While some firms address employees' learning needs as part of the annual review process, others are trying to give workers advice whenever they want it. GE Digital, for example, offers a tool to help employees understand what potential next jobs might fit their backgrounds and what additional capabilities they would need in order to qualify. Boeing is developing an artificial-intelligence engine to customize instruction for individuals

in real time. According to Mark Cousino, the company's director of learning strategy, design, and technology, the tool will assess a person's cognitive load during training and fine-tune the experience to optimize it for that individual.

THE FAST-CHANGING NATURE of business today requires organizations in every industry to constantly enhance their capabilities. This presents an opportunity for CLOs to take on a more proactive and strategic role than ever before—to be transformers, not just trainers. Transformer CLOs are positioning employees to succeed in their current jobs and adapt to future changes. They're making learning and development an integral part of their companies' strategic agendas. It's a profound and important shift. "Learning is no longer just an HR function," said Standard Chartered's Clark. "It's a core part of your business." ☰

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STRATEGY



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ILLUSTRATOR

KEITH NEGLEY

When Data Creates Competitive Advantage...

*...and when
it doesn't*





STRATEGY

Many

executives and investors assume that it's possible to use customer-data capabilities to gain an unbeatable competitive edge. The more customers you have, the more data you can gather, and that data, when analyzed with machine-learning tools, allows you to offer a better product that attracts more customers. You can then collect even more data and eventually marginalize your competitors in the same way that businesses with sizable network effects do. Or so the thinking goes. More often than not, this assumption is wrong. In most instances people grossly overestimate the advantage that data confers.

The virtuous cycles generated by data-enabled learning may look similar to those of regular network effects, wherein an offering—like a social media platform—becomes more valuable as more people use it and ultimately garners a critical mass of users that shuts out competitors. But in practice regular network effects last longer and tend to be more powerful. To establish the strongest competitive position, you need them *and* data-enabled learning. However, few companies are able to develop both. Nevertheless under the right conditions customer-generated data can help you build competitive defenses, even if network effects aren't present. In this article we'll walk you through what those conditions are and explain how to evaluate whether they apply to your business.

WHAT HAS CHANGED?

Companies built on data have been around for a long time. Take credit bureaus and the information aggregators Lexis-Nexis, Thomson Reuters, and Bloomberg, just to name a few. Those companies are protected by significant barriers to entry

because of the economies of scale involved in acquiring and structuring huge amounts of data, but their business models don't involve gleaning data from customers and mining it to understand how to improve offerings.

Gathering customer information and using it to make better products and services is an age-old strategy, but the process used to be slow, limited in scope, and difficult to scale up. For automakers, consumer-packaged-goods companies, and many other traditional manufacturers, it required crunching sales data, conducting customer surveys, and holding focus groups. But the sales data often wasn't linked to individual customers, and since surveys and focus groups were expensive and time-consuming, only data from a relatively small number of customers was collected.

That changed dramatically with the advent of the cloud and new technologies that allow firms to quickly process and make sense of vast amounts of data. Internet-connected products and services can now directly collect information on customers, including their personal details, search behavior, choices of content, communications, social media posts, GPS location, and usage patterns. After machine-learning algorithms analyze this "digital exhaust," a company's offerings can be automatically adjusted to reflect the findings and even tailored to individuals.

These developments make data-enabled learning much more powerful than the customer insights companies produced in the past. They do not, however, guarantee defensible barriers.

BUILDING MOATS WITH DATA-ENABLED LEARNING

To determine to what degree a competitive advantage provided by data-enabled learning is sustainable, companies should answer seven questions:

I **How much value is added by customer data relative to the stand-alone value of the offering?** The higher the value added, the greater the chance that it will create a lasting edge. Let's look at a business where the value of customer data is very high: Mobileye, the leading provider of advanced driver-assistance systems (ADAS), which include collision-prevention and lane-departure warnings for vehicles. Mobileye sells its



New technologies make data-enabled learning much more powerful than the customer insights produced in the past. They do not, however, guarantee defensible barriers.

systems mainly to car manufacturers, which test them extensively before incorporating them into their products. It's crucial for the systems to be fail-safe, and the testing data is essential to improving their accuracy. By gathering it from dozens of its customers, Mobileye has been able to raise the accuracy of its ADAS to 99.99%.

Conversely, the value of learning from customers is relatively low for makers of smart televisions. Some now include software that can provide personalized recommendations for shows or movies based on an individual's viewing habits as well as what's popular with other users. So far, consumers don't care much about this feature (which is also offered by streaming service providers such as Amazon and Netflix). They largely consider TV size, picture quality, ease of use, and durability when making purchasing decisions. If learning from customers was a bigger factor, perhaps the smart TV business would be less competitive.

2

How quickly does the marginal value of data-enabled learning drop off? In other words, how soon does the company reach a point where additional customer data no longer enhances the value of an offering? The more slowly the marginal value decreases, the stronger the barrier is. Note that when answering this question, you should judge the value of the learning by customers' willingness to pay and not by some other application-specific measure, such as the percentage of chat-bot queries that could be answered correctly or the fraction of times a movie recommendation was clicked on.

Let's say you graphed the accuracy of Mobileye's ADAS as a function of customer usage (total miles driven by car manufacturers testing it) and found that a few manufacturers and a moderate level of testing would be sufficient to achieve, say, 90% accuracy—but that a lot more testing with a bigger set of car manufacturers would be needed to get to 99%, let alone 99.99%. Interpreting that to mean that the customer data's marginal value was rapidly decreasing would, of course, be incorrect: The value of the additional 9-percentage-point (or even a 0.99-point) improvement in accuracy remains extremely high, given the life-or-death implications. It would be difficult for any individual car manufacturer—even the largest one—to generate the necessary amount of data on its own or for any potential Mobileye competitors to replicate the data. That's why Mobileye was able to carve out a dominant position in the ADAS market, making it a highly attractive acquisition for Intel, which bought it for \$15 billion in 2017.

When the marginal value of learning from customer data remains high even after a very large customer base has been acquired, products and services tend to have significant competitive advantages. You can see this with systems designed to predict rare diseases (such as those offered by RDMD) and online search engines such as Baidu and Google. Although Microsoft has invested many years and billions of dollars in Bing, it has been unable to shake Google's dominance in search. Search engines and disease-prediction systems all need huge amounts of user data to provide consistently reliable results.

IDEA IN BRIEF

THE ASSUMPTION

Companies can build winner-take-all positions by collecting and analyzing customer data. The more customers a firm has, the more data it can gather and mine; the resulting insights allow it to offer a better product that attracts even more customers, from which it can collect still more data.

THE REALITY

Even when customer data does confer a competitive advantage, it gives rise to network effects only infrequently. And that advantage may not last.

THE SOLUTION

To understand the edge that data-enabled learning can provide, companies should answer seven questions, which examine the value of the data; whether its marginal value drops quickly; how fast it becomes obsolete; whether it's proprietary; whether the improvements from it can be easily imitated; whether they enhance the product for current users, other users, or both; and how fast insights can be incorporated into products.



A counterexample of a business where the marginal value of user data drops off quickly is smart thermostats. These products need only a few days to learn users' temperature preferences throughout the day. In this context data-enabled learning can't provide much competitive advantage. Although it launched the first smart thermostats that learn from customer behavior in 2011, Nest (acquired by Google in 2014) now faces significant competition from players such as Ecobee and Honeywell.

3 **How fast does the relevance of the user data depreciate?** If the data becomes obsolete quickly, then all other things being equal, it will be easier for a rival to enter the market, because it doesn't need to match the incumbent's years of learning from data.

All the data Mobileye has accumulated over the years from car manufacturers remains valuable in the current versions of its products. So does the data on search-engine users that Google has collected over decades. Although searches for some terms may become rare over time while searches for new ones might start appearing more frequently, having years of historical search data is of undeniable value in serving today's users. Their data's low depreciation rate helps explain why both Mobileye and Google Search have proved to be very resilient businesses.

With casual social games for computers and mobile devices, however, the value of learning from user data tends to decrease quickly. In 2009 this market took off when Zynga introduced its highly successful FarmVille game. While the company was famous for relying heavily on user-data analytics to make design decisions, it turned out that the insights learned from one game did not transfer very well to the next: Casual social games are subject to fads, and user preferences shift quickly over time, making it difficult to build sustainable data-driven competitive advantages. After a few more successes, including FarmVille 2 and CityVille, Zynga stopped producing new hits, and in 2013 it lost nearly half its user base. It was superseded by game makers like Supercell (Clash of Clans) and Epic Games (Fortnite). After reaching a peak of \$10.4 billion in 2012, Zynga's market value languished below \$4 billion for most of the next six years.

4 **Is the data proprietary—meaning it can't be purchased from other sources, easily copied, or reverse-engineered?** Having unique customer data with few or no substitutes is critical to creating a defensible barrier. Consider Adaviv, a Boston-area start-up we've invested in, which offers a crop-management system that allows growers (now primarily of cannabis) to continuously monitor individual plants. The system relies on AI, computer-vision software, and a proprietary data-annotation technique to track plant biometrics not visible to the human eye, such as early signs of disease or lack of adequate nutrients. It then translates the data into insights that growers can use to prevent disease outbreaks and improve yields. The more growers Adaviv serves, the broader the range of variants, agricultural conditions, and other factors it can learn about, and the greater the accuracy of its predictions for new and existing customers. Contrast its situation with that of spam-filter providers, which can acquire user data relatively cheaply. That helps explain the existence of dozens of such providers.

It's important to keep in mind that technological progress can undermine a position based on unique or proprietary data. A case in point is speech-recognition software. Historically, users needed to train the software to understand their individual voices and speech patterns, and the more a person used it, the more accurate it became. This market was dominated by Nuance's Dragon solutions for many years. However, the past decade has seen rapid improvements in speaker-independent speech-recognition systems, which can be trained on publicly available sets of speech data and take minimal or no time to learn to understand a new speaker's voice. These advances have allowed many companies to provide new speech-recognition applications (automated customer service over the phone, automated meeting transcript services, virtual assistants), and they're putting increasing pressure on Nuance in its core markets.

5 **How hard is it to imitate product improvements that are based on customer data?** Even when the data is unique or proprietary and produces valuable insights, it's difficult to build a durable competitive advantage if the





STRATEGY

resulting enhancements can be copied by competitors without similar data.

A couple of factors affect companies' ability to overcome this challenge. One is whether the improvements are hidden or deeply embedded in a complex production process, making them hard to replicate. Pandora, the music-streaming service, benefits from this barrier. Its offering leveraged the firm's proprietary Music Genome Project, which categorized millions of songs on the basis of some 450 attributes, allowing Pandora to customize radio stations to individual users' preferences. The more a user listens to his or her stations and rates songs up or down, the better Pandora can tailor musical selections to that user. Such customization cannot be easily imitated by any rival because it is deeply tied to the Music Genome Project. In contrast, the design improvements based on learning from the customer use of many office-productivity software products—such as Calendly for coordinating calendars and Doodle for polling people about meeting times—can be easily observed and copied. That's why dozens of companies offer similar software.

The second factor is how quickly the insights from customer data change. The more rapidly they do so, the harder they are for others to imitate. For example, many design features of the Google Maps interface can be easily copied (and they have been, by Apple Maps, among others). But a key part of Google Maps' value is its ability to predict traffic and recommend optimal routes, which is much harder to copy because it leverages real-time user data that becomes obsolete within minutes. Only companies with similarly large user bases (such as Apple in the United States) can hope to replicate that feature. Apple Maps is closing the gap with Google Maps in the United States, but not in countries where Apple has a relatively small user base.

6 Does the data from one user help improve the product for the same user or for others? Ideally, it will do both, but the difference between the two is important. When data from one user improves the product for that person, the firm can individually customize it, creating switching costs. When data from one user improves the product for other users, this can—but may not—create network effects. Both kinds of enhancements help provide a barrier to entry, but the former

makes *existing* customers very sticky, whereas the latter provides a key advantage in competing for *new* customers.

For example, Pandora was the first big player in digital music streaming but then fell behind Spotify and Apple Music, which are still growing. As we noted, Pandora's main selling point is that it can tailor stations to each user's tastes. But learning across users is very limited: An individual user's up-or-down votes allow Pandora to identify music attributes that the user likes and then serve that person songs sharing those attributes. In contrast, Spotify focused a lot more on providing users with sharing and discovery features, such as the ability to search and listen to other people's stations, thereby creating direct network effects and luring additional customers. Pandora's service remains available only in the United States (where it has a base of loyal users), while Spotify and Apple Music have become global players. And though Pandora was acquired by Sirius XM for \$3.5 billion in February 2019, Spotify became a public company in April 2018 and as of early November 2019 was worth \$26 billion. Clearly, customization based on learning from an individual user's data helps keep existing customers locked in, but it doesn't lead to the type of exponential growth that network effects produce.

7

How fast can the insights from user data be incorporated into products? Rapid learning cycles make it hard for competitors to catch up,

especially if multiple product-improvement cycles occur during the average customer's contract. But when it takes years or successive product generations to make enhancements based on the data, competitors have more of a chance to innovate in the interim and start collecting their own user data. So the competitive advantage from customer data is stronger when the learning from *today's* customers translates into more-frequent improvements of the product for those same customers rather than just for *future* customers of the product or service. Several of the product examples we've discussed already—maps, search engines, and AI-based crop-management systems—can be quickly updated to incorporate the learning from current customers.

A counterexample is offered by direct online lenders, such as LendUp and LendingPoint, which learn how to make better loan decisions by examining users' repayment history and how it correlates with various aspects of users' profiles and behavior. Here, the only learning that is relevant to *current* borrowers is that from *previous* borrowers, which is already reflected in the contracts and rates that current borrowers are offered. There's no reason for borrowers to care about any future learning that the lender may benefit from, since their existing contracts won't be affected. For that reason, customers don't worry about how many other borrowers will sign up when deciding whether to take a loan from a particular lender.



Buying data is easier than buying customers. Often, alternative sources of data can significantly level the playing field by removing the need for a big customer base.

Existing borrowers might prefer to stick with their current lenders, which know them better than other lenders do, but the market for new borrowers remains very competitive.

DOES DATA CONFER NETWORK EFFECTS?

The answers to questions 6 and 7 will tell you whether data-enabled learning will create true network effects. When learning from one customer translates into a better experience for other customers *and* when that learning can be incorporated into a product fast enough to benefit its current users, customers will care about how many other people are adopting the product. The mechanism at work here is very similar to the one underlying network effects with online platforms. The difference is that platform users prefer to join bigger networks because they want more people to interact with, not because more users generate more insights that improve products.

Let's look at Google Maps again. Drivers use it in part because they expect many others to employ it too, and the more traffic data the software gathers from them, the better its predictions on road conditions and travel times. Google Search and Adaviv's AI-based crop-management system also enjoy data-enabled network effects.

Like regular network effects, data-enabled ones can create barriers to entry. Both types of effects present a huge cold-start, or chicken-or-egg, challenge: Businesses aiming to build regular network effects need to attract some minimum number of users to get the effects started, and those aiming to achieve data-enabled network effects need some initial amount of data to start the virtuous cycle of learning.

Despite these similarities, regular network effects and data-enabled network effects have key differences, and they tend to make advantages based on the regular ones stronger. First, the cold-start problem is usually less severe with data-enabled network effects, because buying data is easier than buying customers. Often, alternative sources of data, even if not perfect, can significantly level the playing field by removing the need for a big customer base.

Second, to produce lasting data-enabled network effects, the firm has to work constantly to learn from customer data. In contrast, as Intuit cofounder Scott Cook has often said, "products that benefit from [regular] network effects get better while I sleep." With regular network effects, interactions

between customers (and possibly with third-party providers of complementary offerings) create value even if the platform stops innovating. Even if a new social network offered users objectively better features than Facebook does (for instance, better privacy protection), it would still have to contend with Facebook's powerful network effects—users want to be on the same social platform as most other users.

Third, in many cases nearly all the benefits of learning from customer data can be achieved with relatively low numbers of customers. And in some applications (like speech recognition), dramatic improvements in AI will reduce the need for customer data to the point where the value of data-enabled learning might disappear completely. Regular network effects, on the other hand, extend further and are more resilient: An additional customer still typically enhances value for existing customers (who can interact or transact with him or her), even when the number of existing customers is already very large.

AS EVEN MUNDANE consumer products become smart and connected—new kinds of clothing, for instance, can now react to weather conditions and track mileage and vital signs—data-enabled learning will be used to enhance and personalize more and more offerings. However, their providers won't build strong competitive positions unless the value added by customer data is high and lasting, the data is proprietary and leads to product improvements that are hard to copy, or the data-enabled learning creates network effects.

In the decades ahead, improving offerings with customer data will be a prerequisite for staying in the game, and it may give incumbents an edge over new entrants. But in most cases it will not generate winner-take-all dynamics. Instead, the most valuable and powerful businesses for the foreseeable future will be those that are both built on regular network effects and enhanced by data-enabled learning, like Alibaba's and Amazon's marketplaces, Apple's App Store, and Facebook's social networks. ☰

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LEADERSHIP

THE ELEMENTS *of* GOOD JUDGMENT

How to improve your decision-making



Sir Andrew Likierman
Professor, London Business School



PHOTOGRAPHER **TIM FLACH**

A DECISION MUST BE MADE.



The facts have been assembled, and the arguments for and against the options spelled out, but no clear evidence supports any particular one. Now people around the table turn to the CEO. What they're looking for is good judgment—an interpretation of the evidence that points to the right choice.

Judgment—the ability to combine personal qualities with relevant knowledge and experience to form opinions and make decisions—is “the core of exemplary leadership” according to Noel Tichy and Warren Bennis (the authors of

Judgment: How Winning Leaders Make Great Calls). It is what enables a sound choice in the absence of clear-cut, relevant data or an obvious path. To some degree we are all capable of forming views and interpreting evidence. What we need, of course, is good judgment.

A lot of ink has been spilled in the effort to understand what good judgment consists of. Some experts define it as an acquired instinct or “gut feeling” that somehow combines deep experience with analytic skills at an unconscious level to produce an insight or recognize a pattern that others overlook. At a high level this definition makes intuitive sense; but it is hard to move from understanding what judgment is to knowing how to acquire or even to recognize it.

In an effort to meet that challenge, I’ve talked to CEOs in a range of companies, from some of the world’s largest right down to start-ups. I’ve approached leaders in the professions as well: senior partners at law and accountancy firms, generals, doctors, scientists, priests, and diplomats. I asked them to share their observations of their own and other people’s exercise of judgment so that I could identify the skills and behaviors that collectively create the conditions for fresh insights and enable decision makers to discern patterns that others miss. I have also looked at the relevant literatures, including leadership and psychology.

I’ve found that leaders with good judgment tend to be good listeners and readers—able to hear what other people actually mean, and thus able to see patterns that others do not. They have a breadth of experiences and relationships that enable them to recognize parallels or analogies that others miss—and if they don’t know something, they’ll know someone who does and lean on that person’s judgment. They can recognize their own emotions and biases and take them out of the equation. They’re adept at expanding the array of choices under

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Leaders with good judgment tend to be good listeners and readers—able to hear what other people actually mean, and thus able to see patterns that others do not.

consideration. Finally, they remain grounded in the real world: In making a choice they also consider its implementation.

Practices that leaders can adopt, skills they can cultivate, and relationships they can build will inform the judgments they make. In this article I'll walk through the six basic components of good judgment—I call them *learning, trust, experience, detachment, options, and delivery*—and offer suggestions for how to improve them.

LEARNING

Listen Attentively, Read Critically

Good judgment requires that you turn knowledge into understanding. This sounds obvious, but as ever, the devil is in the detail—in this case your approach to learning. Many leaders rush to bad judgments because they unconsciously filter the information they receive or are not sufficiently critical of what they hear or read.

The truth, unfortunately, is that few of us really absorb the information we receive. We filter out what we don't expect or want to hear, and this tendency doesn't necessarily improve with age. (Research shows, for example, that children notice things that adults don't.) As a result, leaders simply miss a great deal of the information that's available—a weakness to which top performers are especially vulnerable because overconfidence so often comes with success.

Exceptions exist, of course. I first met John Buchanan early in a distinguished four-decade career during which he became the CFO at BP, the chairman of Smith & Nephew, the deputy chairman of Vodafone, and a director at AstraZeneca,

Alliance Boots, and BHP Billiton. What struck me immediately and throughout our acquaintance was that he gave me and everyone else his undivided attention. Many people with his record of accomplishment would long ago have stopped listening in favor of pontificating.

Buchanan was more than a good listener—he was adept at eliciting information that people might not otherwise volunteer. His questions were designed to draw out interesting responses. He told me that when deciding whether to accept a directorship, for example, he would ask questions such as “Where would you place this company on a spectrum of white to gray?” “At first this sounds like a classic piece of managementese that is clever but meaningless,” he said. “Yet it is sufficiently open-ended to draw out replies on a wide range of subjects and sufficiently pointed to produce a meaningful response.”

Information overload, particularly with written material, is another problem. It's not surprising that CEOs with huge demands on their time and attention struggle to get through the volume of emails and briefing papers they receive. As a director of a large listed company, I would get up to a million words to read ahead of a big meeting. Confronted with such a deluge, it's tempting to skim and to remember only the material that confirms our beliefs. That's why smart leaders demand quality rather than quantity in what gets to them. Three hundred pages for the next big meeting? It's six pages maximum for agenda items at Amazon and the Bank of England.

Overload is not the only challenge when it comes to reading. A more subtle risk is taking the written word at face value. When we listen to people speak, we look (consciously or unconsciously) for nonverbal clues about the quality of

IDEA IN BRIEF

THE OBJECTIVE

A manager's core function is to exercise judgment—to form views and interpret ambiguous evidence in a way that will lead to a good decision.

THE CHALLENGE

We have no clear framework for learning good judgment or recognizing it in others. To evaluate a leader's judgment, we often rely on his or her track record, which can be misleading.

THE SOLUTION

This article identifies six components that contribute to good judgment: *learning, trust, experience, detachment, options, and delivery*. By working on each, leaders can improve their ability to make sense of an ambiguous situation.



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what we're hearing. While reading, we lack that context; and in an era when the term "fake news" is common, decision makers need to pay extra attention to the quality of the information they see and hear, especially material filtered by colleagues or obtained through search engines and social media exchanges. Are you really as careful in assessing and filtering as you should be, knowing how variable the quality is? If you believe that you never unconsciously screen out information, consider whether you choose a newspaper that agrees with what you already think.

People with good judgment are skeptical of information that doesn't make sense. We might none of us be alive today if it weren't for a Soviet lieutenant colonel by the name of Stanislav Petrov. It came to light only after the fall of communism that one day in 1983, as the duty officer at the USSR's missile tracking center, Petrov was advised that Soviet satellites had detected a U.S. missile attack on the Soviet Union. He decided that the 100% probability reading was implausibly high and did not report the information upward, as were his instructions. Instead he reported a system malfunction. "I had all the data [to suggest a missile attack was ongoing]," he told the BBC's Russian service in 2013. "If I had sent my report up the chain of command, nobody would have said a word against it." It turned out that the satellites had mistaken sunlight reflected from clouds for missile engines.

To improve: Active listening, including picking up on what's *not* said and interpreting body language, is a valuable skill to be honed, and plenty of advice exists. Beware of your own filters and of defensiveness or aggression that may discourage alternative arguments. If you get bored and impatient when listening, ask questions and check conclusions. If you're overwhelmed by written briefing material, focus on the parts that discuss questions and issues rather than those that summarize the presentations you'll hear at the meeting. (Far too many board packs are stuffed with advance copies of presentations.) Look for gaps or discrepancies in what's being said or written. Think carefully about where the underlying data is coming from and the likely interests of the people supplying it. If you can, get input and data from people on more than one side of an argument—especially people you don't usually agree with. Finally, make sure the yardsticks and proxies for data you rely on are sound; look for discrepancies in the metrics and try to understand them.

TRUST

Seek Diversity, Not Validation

Leadership shouldn't be a solitary endeavor. Leaders can draw on the skills and experiences of others as well as their own when they approach a decision. Who these advisers are and how much trust the leader places in them are critical to the quality of that leader's judgment.

Unfortunately, many CEOs and entrepreneurs bring people on board who simply echo and validate them. The disgraced executives Elizabeth Holmes and Sunny Balwani of the start-up Theranos regarded anyone who raised a concern or an objection as a cynic and a naysayer. "Employees who persisted in doing so were usually marginalized or fired, while sycophants were promoted," according to the *Financial Times*. Recently jailed for 18 years, Wu Xiaohui, the founder and leading light of China's Anbang Insurance Group, had built up a diverse international empire, buying major assets that included New York's Waldorf Astoria hotel. He also surrounded himself with "unimpressive people who would just follow his orders and not question them," one employee told FT.

The historian Doris Kearns Goodwin, in her book *Team of Rivals*, noted that Abraham Lincoln assembled a cabinet of experts he respected but who didn't always agree with one another. McKinsey has long included the *obligation* (not a *suggestion*) to dissent as a central part of the way it does business. Amazon's Leadership Principles specify that leaders should "seek diverse perspectives and work to disconfirm their beliefs."

Alibaba's Jack Ma thinks along the same lines. Recognizing his own ignorance of technology (he was 33 when he got his first computer), Ma hired John Wu of Yahoo as his chief technology officer, commenting, "For a first-class company we need first-class technology. When John comes, I can sleep soundly." Ma isn't the only mega-entrepreneur who has looked for advisers with organizational and personal qualities and experience to fill a void in himself. Facebook's Mark Zuckerberg hired Sheryl Sandberg for a similar reason. And Natalie Massenet, founder of the online fashion retailer Net-a-Porter, hired the much older Mark Sebba, the "understated chief executive of Net-a-Porter who brought order to the ecommerce start-up in the manner of Robert De Niro in *The Intern*," according to the *Times of London*. My brother Michael told me that one reason his company's chain of opticians, under the brand GrandOptical, became the largest in France is that he partnered with Daniel Abitman, whose operational excellence complemented Michael's entrepreneurial vision and strategic skills.

To improve: Cultivate sources of trusted advice: people who will tell you what you need to know rather than what





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you want to hear. When you are recruiting people on whose advice you will rely, don't take outcomes as a proxy for their good judgment. Make judgment an explicit factor in appraisals and promotion decisions. Usha Prashar, who chaired the body that makes the UK's most-senior judicial appointments, pointed to the need to probe *how* a candidate did things, not just what he or she had done. Dominic Barton of McKinsey told me that he looked for what was *not* being said: Did people fail to mention any "real" difficulties or setbacks or failures in their careers to date? One CEO said he asked people about situations in which they'd had insufficient information or conflicting advice. Don't be put off by assessments that a candidate is "different." Someone who disagrees with you could provide the challenge you need.

EXPERIENCE

Make It Relevant but Not Narrow

Beyond the data and evidence pertinent to a decision, leaders bring their experience to bear when making judgment calls. Experience gives context and helps us identify potential solutions and anticipate challenges. If they have previously encountered something like a current challenge, leaders can scope out areas in which to focus their energy and resources.

Mohamed Alabbar, the chairman of Dubai's Emaar Properties and one of the Middle East's most successful entrepreneurs, gave me an example. His first major property crisis, in Singapore in 1991, had taught him about the vulnerability that comes with being highly geared in a downturn—and in real estate, only those who learn the lessons of overgearing in their first crash survive in the long term. Alabbar has since navigated Dubai's often dramatic economic cycles and today owns a portfolio that includes the Burj Khalifa, the world's tallest building, and the Dubai Mall, one of the world's largest shopping malls.

But—and it's a big but—if the experience is narrowly based, familiarity can be dangerous. If my company is planning to enter the Indian market, I might not trust the judgment of a person whose only product launches have been in the United States. I would probably be less worried about someone who had also launched new products in,

Success Is Not a Reliable Proxy for Judgment

It's tempting to assume that past successes are a sign of good judgment, and in some cases they may be. The multigenerational success of some German midsize companies and the sheer longevity of Warren Buffett's investment performance are frequently cited examples. But success can have other parents. Luck, the characteristic that Napoleon famously required of his generals, is often the unacknowledged architect of success. Those in sports can vouch for the importance of luck as well as skill. Grant Simmer, successively navigator and designer in four America's Cup yachting victories, has acknowledged the help of luck in the form of mistakes made by his competitors.

Sometimes, what looks like sustained success may conceal trickery. Before the Enron scandal broke, in 2001, CEO Jeff Skilling was hailed as a highly successful leader. Toshiba's well-regarded boss, Hisao Tanaka, resigned in disgrace in 2015 after a \$1.2 billion profit overstatement covering seven years was unearthed. Bernie Madoff founded his investment firm in 1960 and for 48 years was seen as both successful and a man of the highest integrity.

When you are trying to assess whether a CEO—or a new hire—has good judgment, don't just look at that person's achievements. Instead try to assess the person according to the six elements described in this article. Does she ask you questions or is she just making a pitch? How did he get where he is and whom does he listen to? What kind of training has she done? Does he like to challenge his own assumptions?

say, China and South Africa, because such a person would be less likely to ignore important signals.

In addition, leaders with deep experience in a particular domain may fall into a rut, making judgments out of habit, complacency, or overconfidence. It usually takes an external crisis to expose this failure, for which the lack of lifeboats for the *Titanic* is the enduring symbol and the 2008 financial crisis the moment of truth for many apparently unassailable titans. The equivalent today are those leaders who have underestimated the speed with which environmental issues would move center stage and require a tangible response.

To improve: First, assess how well you draw on your own experience to make decisions. Start by going through your important judgment calls to identify what went well and what went badly, including whether you drew on the



Leaders with deep experience in a particular domain may fall into a rut, making judgments out of habit, complacency, or overconfidence.

right experience and whether the analogies you made were appropriate. Record both the wrong and the right. This is tough, and it's tempting to rewrite history, which is why it can be helpful to share your conclusions with a coach or colleagues, who might take a different view of the same experience. Try also to recruit a smart friend who can be a neutral critic.

Second, especially if you're a young leader, work to expand your experience. Try to get postings abroad or in key corporate functions such as finance, sales, and manufacturing. Get yourself on an acquisition team for a major deal. And as a CEO, a crucial support you can give high-potential managers is more-varied exposure, so get involved in career planning. That will not just do the young managers a favor; it will help the company and very possibly you, because it will broaden the experience into which you can tap.

DETACHMENT

Identify, and Then Challenge, Biases

As you process information and draw on the diversity of your own and other people's knowledge, it's critical that you understand and address your own biases. Although passion about objectives and values is a wonderful leadership quality that can inspire followers to greater efforts, it can also affect how you process information, learn from experience, and select advisers.

The ability to detach, both intellectually and emotionally, is therefore a vital component of good judgment. But it's a difficult skill to master. As research in behavioral economics, psychology, and decision sciences has shown in recent years, cognitive biases such as anchoring, confirmation, and risk aversion or excessive risk appetite are pervasive influences in the choices people make.

The German utility RWE provides a cautionary example. In a 2017 interview its chief financial officer revealed that the company had invested \$10 billion in constructing conventional power-generation facilities over a five-year period, most of which had to be written off. RWE conducted a postmortem to understand why an investment in conventional power technology had been chosen at a time when

the energy industry was switching to renewables. It determined that decision makers had displayed status quo and confirmation biases in evaluating the investment context. It also found a number of cases in which hierarchical biases had been in play: Subordinates who doubted the judgment of their bosses had kept quiet rather than disagree with them. Finally, the CFO said, RWE had suffered from "a good dose of action-oriented biases like overconfidence and excessive optimism."

It is precisely for their ability to resist cognitive biases and preserve detachment in decision-making that we often see CFOs and lawyers rise to the CEO position, especially when an organization is in a period of crisis and people's jobs are under threat. This quality was widely praised after the International Monetary Fund chose Christine Lagarde as its director following the dramatic exit in 2011 of her predecessor, Dominique Strauss-Kahn, in the wake of a lurid scandal. Although Lagarde was not an economist—unusual for an IMF chief—she had demonstrated her abilities as France's finance minister despite little political experience. And, undoubtedly, having been a partner in a major international law firm equipped her to approach negotiation with detachment—a critical capability at a time when the global financial system was under severe stress.

To improve: Understand, clarify, and accept different viewpoints. Encourage people to engage in role-playing and simulations, which forces them to consider agendas other than their own and can provide a safe space for dissent. If employees are encouraged to play the role of a competitor, for example, they can experiment with an idea that they might be reluctant to suggest to the boss.

Leadership development programs are a great forum in which to challenge assumptions by exposing people to colleagues from different cultures and geographies, who come to the discussion with different views.

Finally, people with good judgment make sure they have processes in place that keep them aware of biases. After discovering how much value had been destroyed, RWE established new practices: Major decisions now require that biases be on the table before a discussion and, when necessary, that a devil's advocate participate. Acknowledge that mistakes will occur—and doubt the judgment of anyone who assumes they won't.



OPTIONS

Question the Solution Set Offered

In making a decision, a leader is often expected to choose between at least two options, formulated and presented by their advocates. But smart leaders don't accept that those choices are all there is. During the 2008–2009 financial crisis, President Obama pressed Treasury Secretary Timothy Geithner to explain why he wasn't considering nationalizing the banks. Geithner recalls, "We had one of those really tough conversations. Are you confident this is going to work? Can you reassure me? Why are you confident? What are our choices? I told him that my judgment at the time was that we had no option but to play out the thing we'd set in motion."

Obama was doing what all good leaders should do when told "We have no other option" or "We have two options and one is really bad" or "We have three options but only one is acceptable." Other options almost always exist, such as doing nothing, delaying a decision until more information is available, or conducting a time-limited trial or a pilot implementation. Tim Breedon, formerly the CEO of the UK financial services company Legal & General, described it to me as "not being boxed in by the way things are presented."

In hindsight, many bad judgment calls were inevitable simply because important options—and the risk of

unintended consequences—were never even considered. This happens for a variety of reasons, including risk aversion on the part of people supplying potential answers. That's why thoroughly exploring the solution set is key to a leader's exercise of judgment. It's not the CEO's job to come up with all the options. But he or she can ensure that the management team delivers the full range of possibilities, counteracting fears and biases that cause the team to self-edit. When all the options can be debated, the judgment is more likely to be right.

To improve: Press for clarification on poorly presented information, and challenge your people if you think important facts are missing. Question their weighting of the variables on which their arguments depend. If timing appears to be a key consideration, determine that it's legitimate. Factor in the risks associated with novel solutions—stress and overconfidence—and look for opportunities to mitigate them through piloting. Use modeling, triangulation, and the opportunities afforded by artificial intelligence. Follow King Solomon (a popular nominee in answer to my question "Who do you think has/had good judgment?") and dig out people's stakes in the final decision. A telltale sign is being oversold on a particular outcome. What are the personal consequences to them (and to you) if their solution works or fails? Consult those you trust. If there isn't anyone, or enough time, try to imagine what someone you trust would do. Get clear about

When You Have to Move Fast

In most cases, good judgment requires reflection before action. A pause for reflection may well make you less likely to be swept along by anger or fear and more likely to ask for additional evidence, consider reframing the question, formulate new options, or reevaluate whether a project is feasible. When you receive a provocative or hostile email, for instance, counting to 10 (or even 1,000) will help you build emotional detachment and save you from writing something you might later regret.

Of course, sometimes you need to act fast. Starbucks CEO Kevin Johnson provides a case in point. One day in 2018 an employee in Philadelphia called the police, asking for the arrest of two black men who were sitting at a table but hadn't ordered. As social media users started to call for a boycott, "his response was personal, swift and concrete: he fired the employee who had called the police, agreed a settlement with the two men and closed all 8,000 US stores for an afternoon of anti-bias training," according to the *Financial Times*. The speed of Johnson's response almost certainly prevented a disaster from turning into a catastrophe for Starbucks.

Compare that response to United's after a passenger, David Dao, was dragged off a Chicago-to-Louisville flight in 2017. Instead of addressing the widespread outrage in reaction to the video of Dao's ordeal, which had gone viral, Oscar Munoz, the CEO of United, sent a supportive letter to staff members. Good for morale, perhaps, but not as a first response, and Munoz was criticized in the press as klutzy and heartless.

If you're in a situation like these, ask yourself three quick questions before responding: Do I tend to act impulsively and then regret it? Do I have insufficient relevant experience? Are the stakes high? If your answer to any of these is yes, think hard rather than react with your gut.

rules and ethical issues, because they will help you filter your choices. Finally, don't be afraid to consider radical options. Discussing them could make you and others aware of some that are less radical but well worth considering and may encourage other people to speak up.

DELIVERY

Factor in the Feasibility of Execution

You can make all the right strategic choices but still end up losing out if you don't exercise judgment in how and by whom those choices will be executed. In 1880 the French diplomat and entrepreneur Ferdinand de Lesseps persuaded investors to support digging a canal in Panama to link the



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Atlantic and Pacific Oceans. Because de Lesseps had just completed the Suez Canal, investors and politicians—failing to understand that building a canal through sand does not qualify you to build one through jungle—did not give his plans the scrutiny they deserved. His approach proved disastrously unsuitable, and it was left to the U.S. government to complete the canal by taking a very different approach.

When reviewing projects, smart leaders think carefully about the risks of implementation and press for clarification from a project's advocates. This is as important for small decisions as it is for big ones.

A leader with good judgment anticipates risks after a course has been determined and knows by whom those risks are best managed. That may not be the person who came up with the idea—particularly if the proposer is wedded to a particular vision, as was the case with de Lesseps. More generally, flair, creativity, and imagination aren't always accompanied by a capability to deliver—which is why small tech firms often struggle to capitalize on their inspiration and are bought out by less-inventive but better-organized giants.

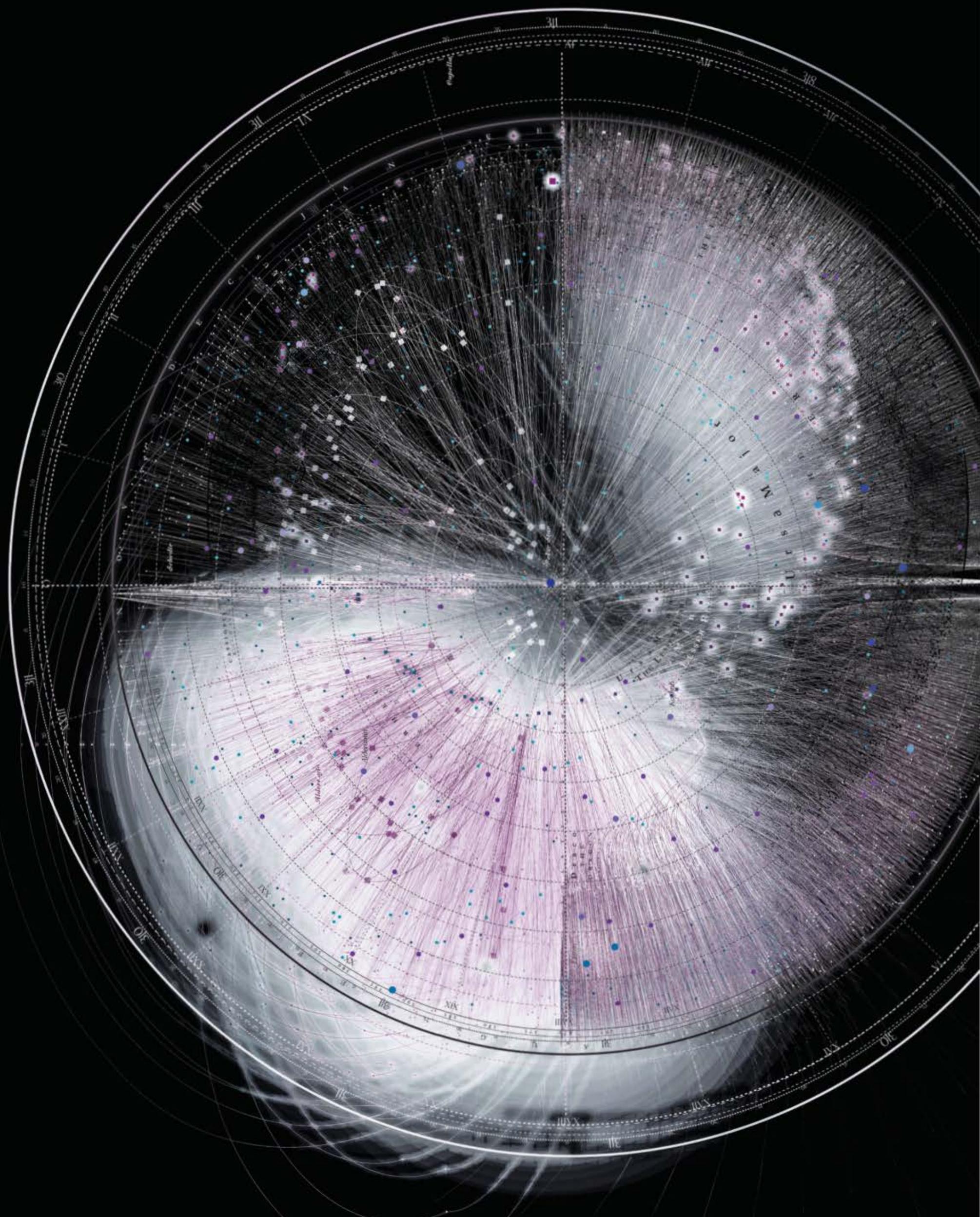
To improve: In assessing a proposal, make sure that the experience of the people recommending the investment closely matches its context. If they point to their prior work, ask them to explain why that work is relevant to the current situation. Get the advocates to question their assumptions by engaging in “premortem” discussions, in which participants try to surface what might cause a proposal to fail. RWE now does this as part of its project-evaluation process.

LEADERS NEED MANY qualities, but underlying them all is good judgment. Those with ambition but no judgment run out of money. Those with charisma but no judgment lead their followers in the wrong direction. Those with passion but no judgment hurl themselves down the wrong paths. Those with drive but no judgment get up very early to do the wrong things. Sheer luck and factors beyond your control may determine your eventual success, but good judgment will stack the cards in your favor. ☺

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OPERATIONS



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Taming Complexity

Make sure the benefits of any addition to
an organization's systems outweigh its costs.



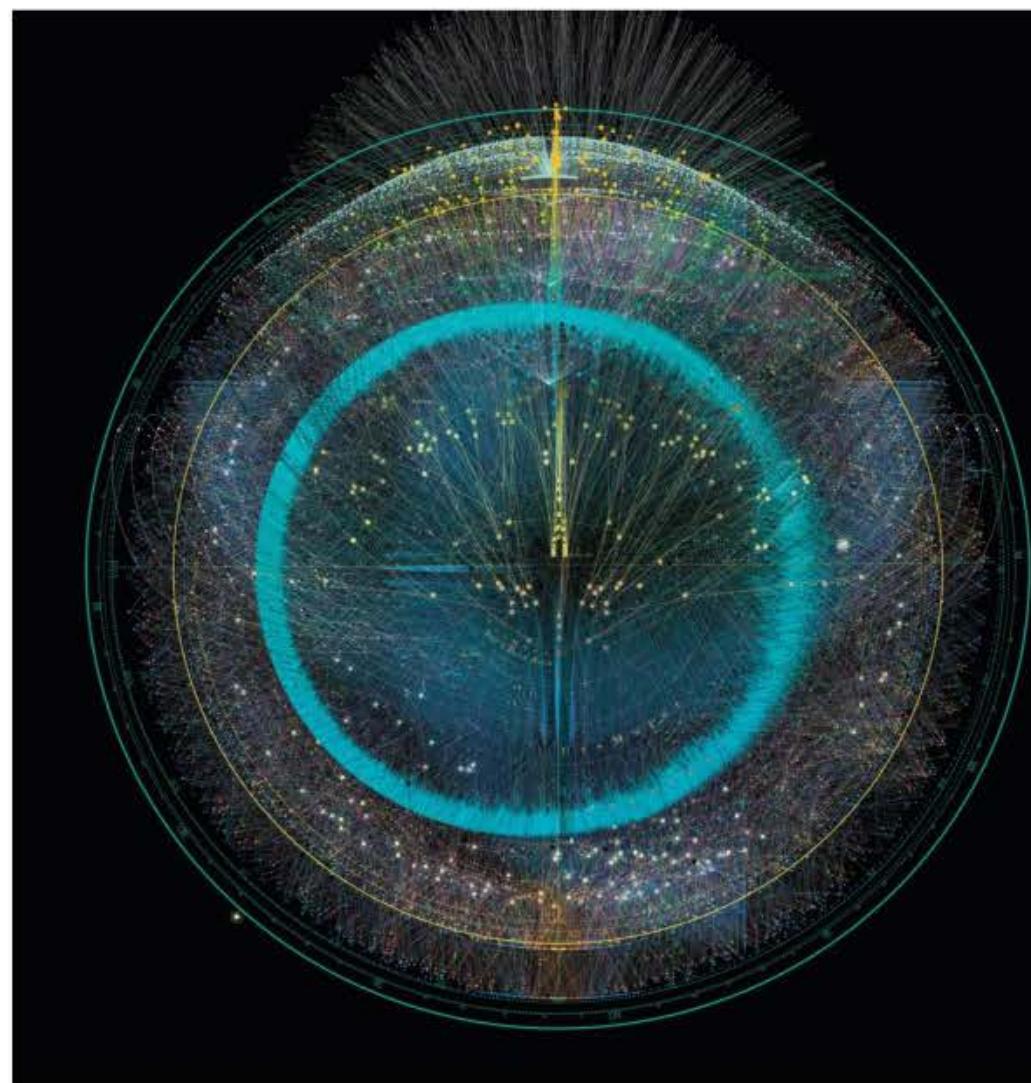
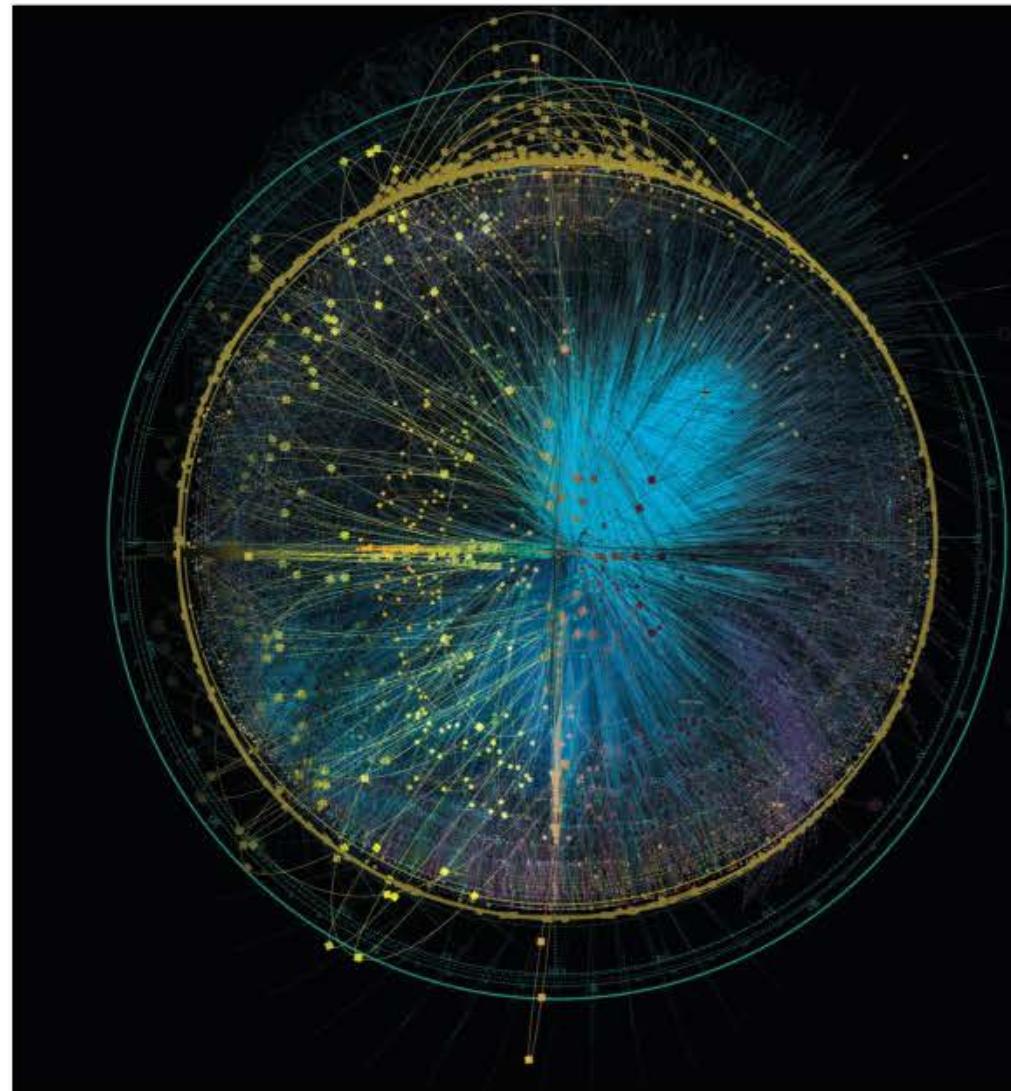
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OPERATIONS

In business, complexity gets bad press.

That's not surprising. It can be cognitively demanding to understand how a system or organization made up of many very different interconnected elements actually works. But the fact that such systems or organizations are difficult to understand doesn't make them inherently bad. In addition to its more obvious costs, complexity confers critical benefits, especially in dynamic and uncertain environments. In the following pages we draw on our experience and perspectives in business, biology, and physics to offer some reflections on the nature, benefits, and costs of complexity and provide some guidance on managing it in business organizations.





ABOUT THE ART

Tatiana Plakhova, the creator of Complexity Graphics, uses mixed-media software to harmonize the aesthetic experience of visual art with patterns from mathematics, science, and nature.

What Is Complexity—and What Is It Good For?

“Complexity” is one of the most frequently used terms in business but also one of the most ambiguous. Even in the sciences it has numerous definitions. For our purposes, we’ll define it as a large number of different *elements* (such as specific technologies, raw materials, products, people, and organizational units) that have many different *connections* to one another. Both qualities can be a source of advantage or disadvantage, depending on how they’re managed.

Let’s look at their strengths. To begin with, having many different elements increases the *resilience* of a system. A company that relies on just a few technologies, products, and processes—or that is staffed with people who have very similar backgrounds and perspectives—doesn’t have many ways to react to unforeseen opportunities and threats. What’s more, the redundancy and duplication that also characterize complex systems typically give them more buffering capacity and fallback options.

Ecosystems with a diversity of elements benefit from *adaptability*. In biology, genetic diversity is the grist for natural selection, nature’s learning mechanism. In business, as environments shift, sustained performance requires new offerings and capabilities—which can be created by recombining existing elements in fresh ways. For example, the fashion retailer Zara introduces styles (combinations of components) in excess of immediate needs, allowing it to identify the most popular products, create a tailored selection from them, and adapt to fast-changing fashion as a result.

Another advantage that complexity can confer on natural ecosystems is better *coordination*. That’s because the elements are often highly interconnected. Flocks of birds or herds of animals, for instance, share behavioral protocols that connect the members to one another and enable them to move and act as a group rather than as an uncoordinated collection of individuals. Thus they realize benefits such as collective security and more-effective foraging.

Finally, complexity can confer *inimitability*. Whereas individual elements may be easily copied, the interrelationships among multiple elements are hard to replicate. A case in point is Apple’s attempt in 2012 to compete with Google Maps. Apple underestimated the complexity of Google’s offering, leading to embarrassing glitches in the initial versions of its map app, which consequently struggled to gain acceptance with consumers. The same is true of a company’s strategy: If its complexity makes it hard to understand, rivals will struggle to imitate it, and the company will benefit.

The Costs of Complexity

Of course, the costs associated with complexity are not to be sneezed at. To begin with, creating and maintaining a variety of elements can be significantly more expensive than using standardized ones, reducing an organization’s *efficiency*.

In addition, as complexity increases, a system’s *understandability* decreases. This may be no problem for natural systems, but it can be challenging for business leaders, who may struggle to grasp and navigate the system—as anyone who has tried getting an IT problem fixed in a large

IDEA IN BRIEF

THE PROBLEM

Despite many important advantages, including greater resilience and adaptability, organizational complexity gets bad press in business.

WHY IT HAPPENS

The costs of complexity frequently overpower the benefits, because cutting it out is harder than adding it.

THE SOLUTION

In growing your organization, make sure that it remains modular in structure and that all components and connections conform to a small number of simple operating principles. Embed a bias for change, avoid imposing too many controls on your people, and let the market judge which changes work. Finally, always optimize your organization globally and keep fixing, repairing, and pruning.



OPERATIONS

corporation or resolving a banking problem through a customer call center can attest.

Lack of understandability can lead to *unmanageability*. As complexity increases, identifying the value and function of any individual element—and where and how to intervene to manage performance—gets harder. The organization becomes less like a machine responding precisely to the operator's instructions and more like a complex natural system with a life of its own.

This, in turn, leads to *unpredictability*, whereby spontaneous and unexpected behaviors can emerge from the system, and interventions can lead to unintended effects. For example, building more roads to relieve congestion may in fact exacerbate it, because more roads tempt more people onto the road. Systems theorists call these phenomena *emergent properties*; they create problems in safety-critical contexts such as nuclear power generation and air transportation, where a high degree of reliability is critical. That's why organizations in those sectors invest time and resources in safeguards such as error margins, redundancy, and fallback plans—to mitigate uncertainty.

History provides many graphic examples of the dangers of excessive complexity. The release of radioactivity at the Three Mile Island nuclear reactor in 1979 can, at least in part, be attributed to the reactor's complexity. In the article "After Three Mile Island: The Rise and Fall of Nuclear Safety Culture," Christian Parenti wrote that the crew at the plant panicked and couldn't interpret signals or follow procedures when the "complex control panels" of the plant "went wild with blinking lights and loud alarms." A seemingly rudimentary issue—a coolant-draining valve got stuck—was obscured by layers of notifications and alarms, resulting in confusion. In *Normal Accidents: Living with High-Risk Technologies*, Charles Perrow concludes that the accident at Three Mile Island was due to the system's immense complexity.

Why Complexity Gets Out of Hand

Creating and reducing complexity may sound like perfect opposites. But in fact fundamental asymmetries exist between the two. The process of adding new elements (creating complexity) is essentially local: Someone in an

THE IDEA IN PRACTICE

AN INTERVIEW WITH CARSTEN RASMUSSEN, COO OF LEGO



MARTIN REEVES: How can complexity be valuable?

CARSTEN RASMUSSEN: Innovation often requires adding complexity—but just because you are adding complexity doesn't make it valuable. You have to build wisely. For example, when we created the Friends line to better serve girls, the initial proposal was for multiple new colors and components. But eventually we managed to make the new SKUs we needed with many fewer new colors and components, to create a hugely successful business line.

How do you know if complexity has gotten out of hand? If the top line is growing but the bottom line isn't, and service levels are declining, you've added too much complexity. You can also look to see if inventory turns are declining. If so, and if SKUs and components are growing in number at a faster rate than the top line, you almost certainly have a complexity problem.

How do you manage complexity? You look at the whole picture and make sure that every time complexity is added, it has a clear strategic purpose. You focus on controlling it where that matters most—in our case, the number of molded colors, resins, and components. You create the variety of SKUs you need with a controlled number of modular components. You manage different parts of the value chain differently: high standardization and simplicity in the capital-intensive upstream manufacturing, and more flexibility and variety in the more labor-intensive downstream packaging operations. With the upstream components you make sure you subtract some complexity every time you add some.

What makes complexity hard to manage, and why does it tend to increase? Most people in the company will have a local perspective. They see the benefits of adding complexity but not the broader ramifications. You can manage complexity only by looking at the whole picture, and that's really the job of senior management—which probably tends to spend insufficient time that way, because it's never urgent. But over time it's extremely important.



As companies grow, leaders have less understanding of how each element is intertwined with others, and thus of the impact of removing any one element.

organization tries something new in a specific context. If successful, the innovation is shared or imitated and then gets baked into the mental models, actions, and work processes of other actors within and beyond the organization—often in unintended ways.

At that point, eliminating the new element becomes difficult. Coordinated action is required in the many places and contexts where it has been incorporated. As a result, decluttering is much harder than elaboration in business systems. One can experience this firsthand when trying to close a Facebook account. Facebook strives for omnipresence by partnering with other companies to allow people to use their Facebook login instead of creating a unique one for each app. Whereas setting up a Facebook account requires only one action (creating a password), trying to delete Facebook may require many (resetting passwords for all the previously connected apps).

The opacity that increases with complexity exacerbates this problem. As companies grow, leaders have less understanding of how each element is intertwined with others; thus they may be unable to assess the impact of removing any one element. What's more, the connections and elements that produce complexity cannot be easily divided into “good” and “bad.” An initially ineffective or bothersome new product feature can often show serendipitous effectiveness in a different situation and become widely adopted. Think of Viagra (sildenafil) and Rogaine (minoxidil), both of which were originally developed as cardiology drugs. The “side effects” discovered during their development later became their principal indications: the treatment of erectile dysfunction and hair loss, respectively. Because leaders don’t know which elements are useful and which are not, they may default to making no changes at all.

Additionally, a sense of urgency rarely attaches to reducing complexity. The benefits of creating any one capability or process may be obvious and immediate (and a customer or a boss may be demanding the innovation in short order), so the organization mobilizes quickly to make it happen. In contrast, the costs of complexity accumulate and manifest slowly or episodically, so removing an element is unlikely to be a priority.

Even when leaders contemplate initiatives to reduce complexity, the organization often resists them—in part,

perhaps, because of an inherent psychological resistance to change, as memorably illustrated by the huge outcry when Coke tried to alter its long-standing recipe. This is usually compounded by political considerations: Existing structures attract resources and power, which leaders are understandably reluctant to give up. Dysfunctional though excessive complexity and opaqueness may be, they preserve the status and power of insiders and experts. Finally, removing complexity very often directly threatens jobs, stiffening the resistance to change.

For all these reasons, organizations tend to accumulate complexity over time. As a result, the larger and older a company is, the less likely it is to be able to reinvent itself and grow sustainably. So what can leaders do?

Striking a Balance

Fortunately, runaway complexity is not inevitable. A few organizations have developed the following strategies—many of which have parallels in nature—to mitigate complexity’s growth:

Create modular structures. Robust complex organisms have a modular structure: Each functioning part operates with a degree of independence from the rest. That’s why it’s possible to transplant hearts and livers. The advantage of a modular structure is that it allows separate systems to evolve and adapt as needed. And if they eventually become redundant, they can more easily be changed without disrupting the other systems.

Similarly, businesses can build structures to be modular rather than fully interconnected so that elements can be changed or removed later. This also increases resilience by ensuring that failures are contained at a local level rather than allowed to spread across the entire organization. And modularity facilitates evolutionary innovation, because modules can be interchanged without undermining the viability of the whole. Furthermore, a small number of modules can yield a great variety of innovative combinations, increasing the cost-benefit of complexity.

For example, Apple’s iOS is designed to be modular—each function of the iPhone is handled by a separate app, and the apps are generally not very interdependent. Therefore, the



OPERATIONS



Organizational dynamics tend to resist change. Structures and processes become ossified as employees adapt to them.

failure or removal of any one app won't prevent the phone from performing the rest of its functions, and it is easy to adapt any one function as needed. Because Apple Maps was originally designed and installed as a modular app, for example, users can easily replace it with Google Maps if they choose.

Use simple, common operating principles. Typically, businesses introduce new ideas, methods, and structures in response to challenges as they arise. A specific solution is tailored to the problem and then melded with existing structures and processes, often creating significant complexity. A large pharma company looking to explore new treatment avenues might buy a promising biotech venture started by a group of PhDs and then encounter difficulties integrating the exotic new unit, as a result either failing to capitalize on the synergies of the acquisition or, worse, destroying value the target had going into the deal.

Nature takes a better approach. All organisms are derived from not only a handful of unique molecules but also a remarkably common set of biochemical processes. These molecules and processes form the basis and diversity of all life. From these common building blocks, nature builds both bumblebees and elephants.

In a business organization, the equivalent is a set of simple underlying principles with which all elements and connections must comply. That increases the chances that new elements and connections will fit comfortably into the organization and also contains complexity.

A good example is provided by the hedge fund Bridgewater, which runs its business on 16 foundational principles. One of these is transparency, and all processes and protocols that Bridgewater puts in place must be transparent. Managers are penalized if they withhold information, for example, and all meetings are recorded and shared. The basic principles—or values—are also used in determining what new elements or connections to add. Suppose the fund is considering hiring a new stock analyst. In interviewing candidates, Bridgewater managers will routinely assess whether they are good at sharing information. They will not hire someone who comes across as likely to hoard information in order to compete with colleagues.

When you introduce a new element or connection that in some way changes how your organization works, it's

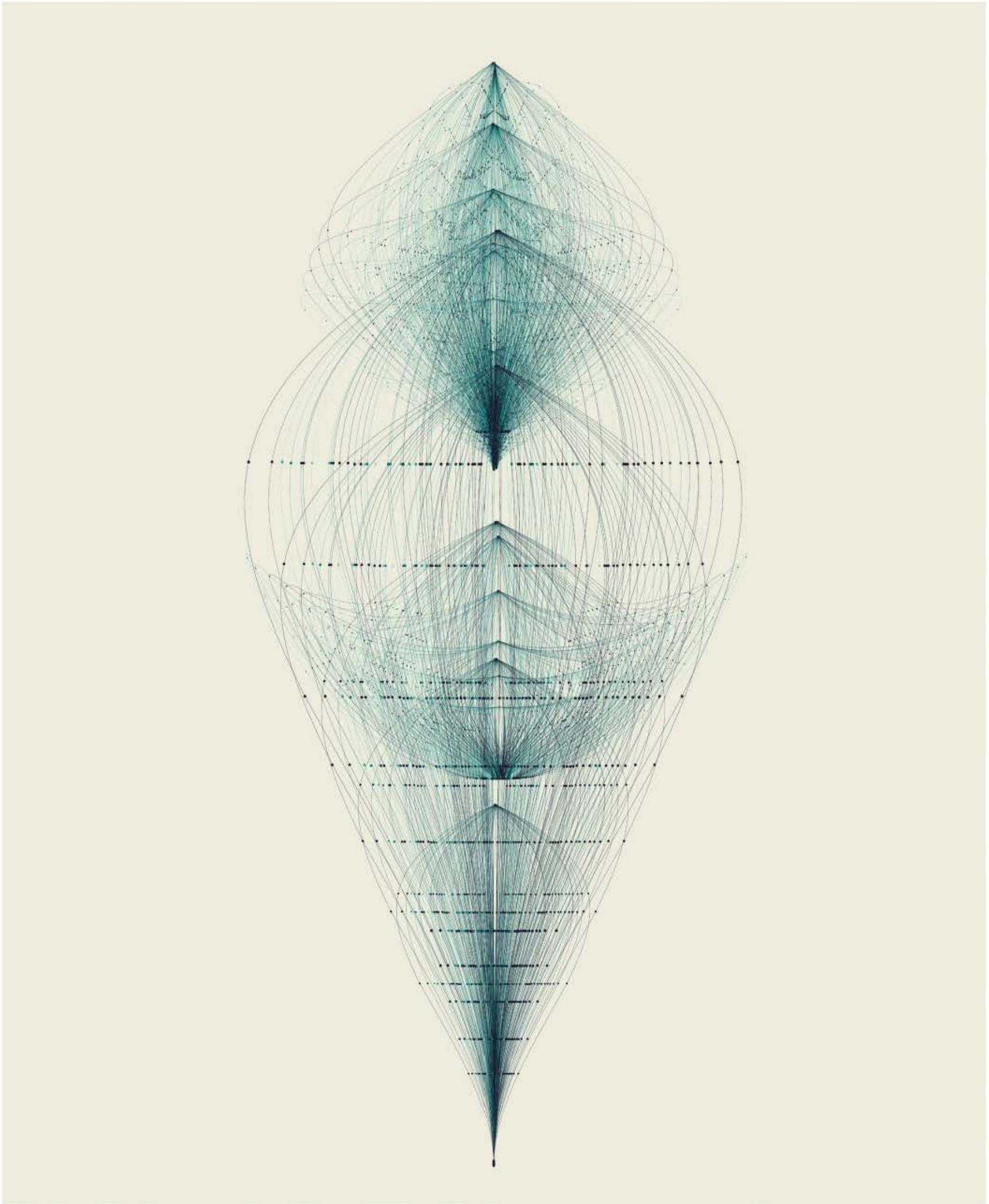
important to codify its utility, because with tweaking it may potentially enable others to solve a different problem without starting from scratch. A precise description of the new mechanism will make it easier for people in your organization to recognize when it can be a solution for them and understand how to adapt it accordingly. In our work at the BCG Henderson Institute, we routinely codify where our highest-impact ideas came from and how they were developed and shared. On the basis of this knowledge we can scale up and replicate proven methods and modify them in light of new experience.

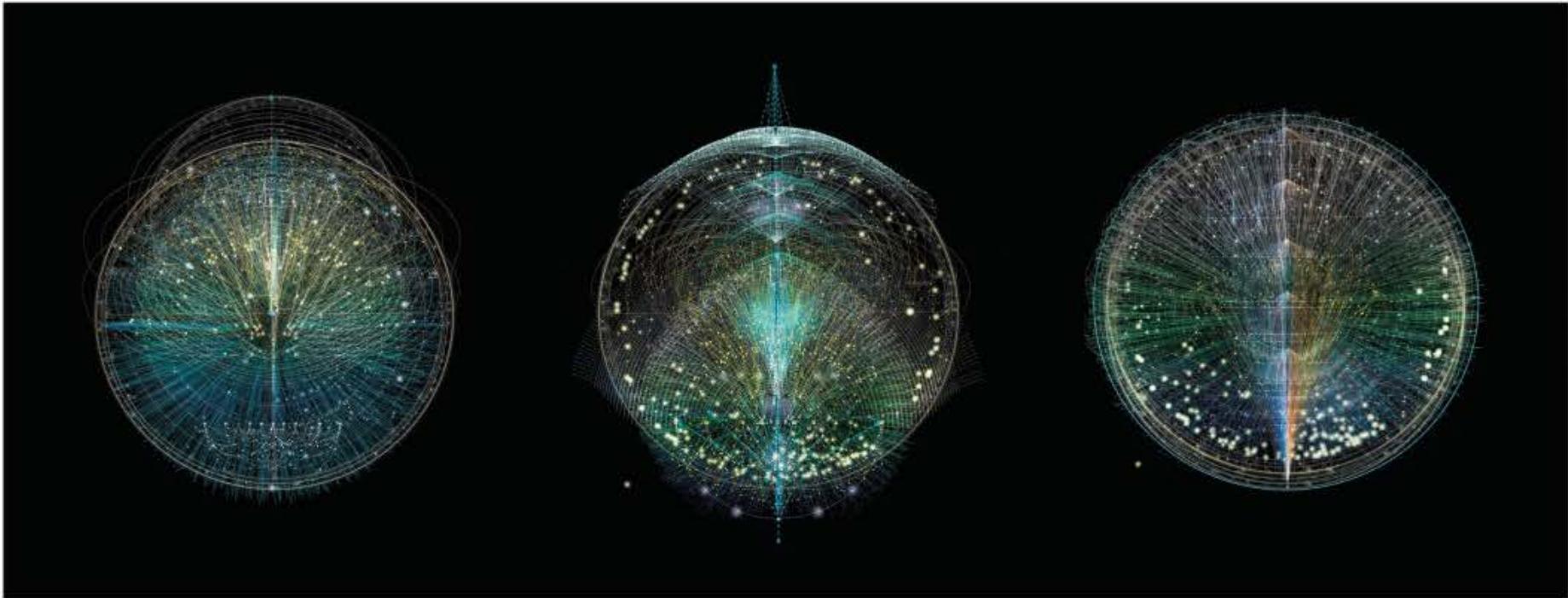
Embed a bias for change. Nature has a bias for change, rooted in its reproductive programming; elements and connections are constantly evolving through genetic mutations and recombination. Successful mutations are favored by natural selection, and a new, superior mutation may appear at any time. This process reinforces both the fitness of species and the resilience of populations. Constant mutation ensures continuous adaptation and the existence at any time of variants that can most likely survive some external calamity. But complexity is contained, because redundant or unfavorable mutations gradually disappear through selection.

Unfortunately, mutation doesn't happen automatically in businesses. In fact, organizational dynamics tend to resist change. Structures and processes become ossified as employees adapt to them. To prevent this ossification, organizations need to embed a behavioral bias for change.

Consider the Chinese tech giant Alibaba. One of its six core values is "embrace change," and Jack Ma, a cofounder and the former executive chairman, believes that "change is the best equilibrium." Unless there is a good reason *not* to change an element or process, Alibaba will proceed to do so. For example, in 2012 it rotated its 22 most-senior business unit managers across departments to break down silos and demonstrate its commitment to flexibility. In practice, the company changes constantly, and today's Alibaba looks very different from the Alibaba of just three years ago. The principle is also applied to hiring decisions, and the company carefully assesses its new recruits' experience of and comfort with change.

Relax control. Human beings have a natural propensity to assert control. But especially for complex or dynamic





problems, an emergent solution is often superior to a designed and micromanaged one. That's perhaps why Ming Zeng, Alibaba's former chief strategy officer, has said, "Never let an MBA near a marketplace that can run itself."

Instead of micromanaging each decision, smart companies realize that allowing individuals the freedom to engage in constant, iterative experimentation can lead to more-powerful outcomes than can deliberately designing and tightly managing each step. This is particularly true in organizations whose environments are evolving in unpredictable and unprecedented ways.

Relaxing control reinforces modularity and facilitates the emergence of innovations. The more that autonomous small teams are experimenting with new elements and connections, the more options they create for the organization—as long as the innovations are properly codified and made available to all teams and groups. Toyota provides a good example of how this works. All the company's employees are encouraged to experiment freely, but they are required to specify their recommendations and predict outcomes, and management's role is largely to serve as an enabler and a sounding board for the experimenters rather than to direct them precisely. (See, for example, "Decoding the DNA of the Toyota Production System," HBR, September–October 1999.)

Let the market judge. As we've noted, nature is governed by the invisible hand of natural selection. Successful mutations survive in the wild, and unsuccessful ones do not. Business needs to submit itself to an equivalent discipline. This may not come easily to individual decision makers, who may use every social advantage they have to achieve the outcome they want—benefiting their own careers and status, but not necessarily guaranteeing good outcomes for the

organization. The market will, of course, eventually discern the weaker outcomes, but often too late and long after those responsible have moved on.

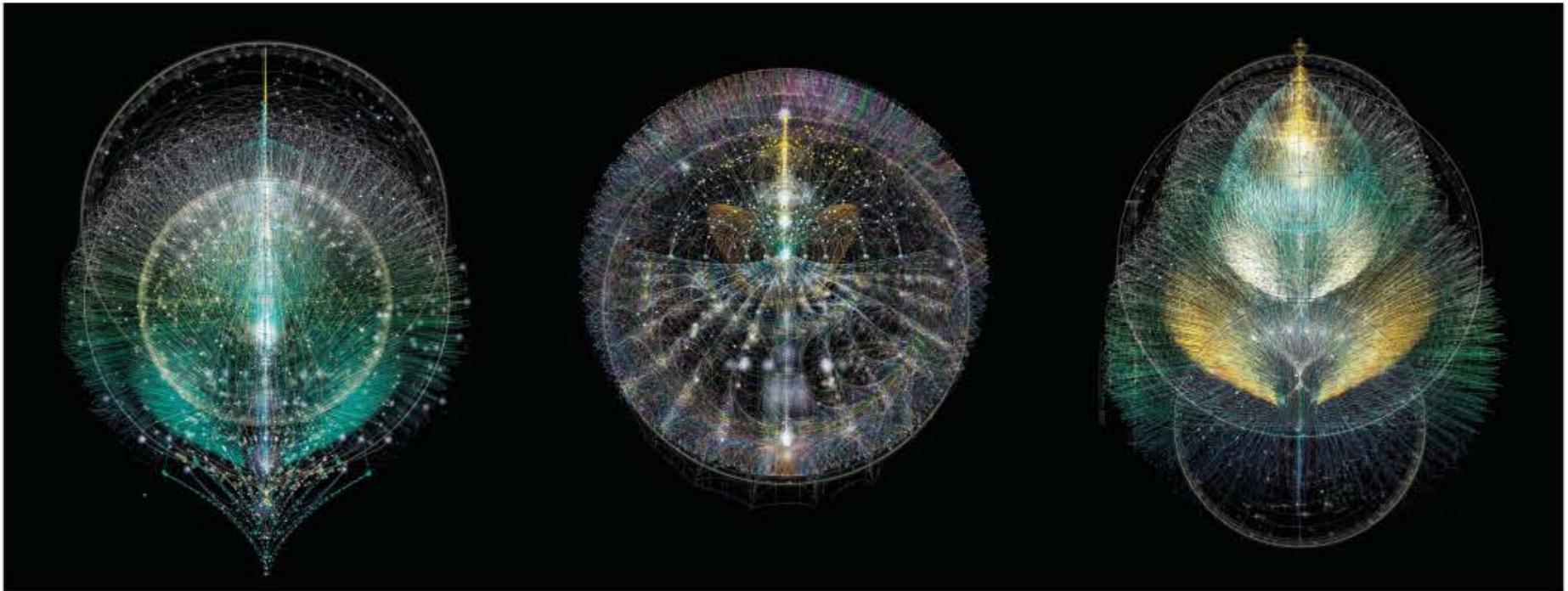
To resolve this agency problem, companies need to bring the market into decisions as early as possible. This rule should apply not only to products and services but to the business model, the operating systems, and the direction of the company itself.

Uber provides an example. Not only are everyday decisions—such as where to allocate supply or how much to charge riders—determined by market forces, but the company has developed an experimentation platform on which to rapidly test innovations in the market. It is running more than 1,000 experiments at any given time, which may range from which actions will appease dissatisfied customers to the feasibility of an entirely new service model.

Optimize globally. In natural organisms, healthy cells don't multiply unnecessarily, because that would crowd out other cells whose functioning is required for the organism's survival. That is precisely what happens in a cancer.

For the same reason, it is essential that the evaluation of new initiatives, processes, and structures be based on their impact not only on a certain group or product but also on the organization as a whole and its collective purpose. This helps balance the trade-offs of complexity—because the benefits of any single component may be concentrated in one small area, whereas the complexity costs may be distributed across the organization. A holistic view of all potential costs and benefits is needed: Companies that measure efficiency and profits but not flexibility, for example, won't be fully aware of the benefits of complexity.

Jeff Bezos, the CEO of Amazon, is acutely conscious of this trap. In his 2016 letter to shareholders he wrote that



in order to maintain vitality, leaders must “resist proxies.” What he meant was that measuring proxies for success, such as unit sales or project milestones, inevitably focuses attention on a specific goal or group, potentially damaging the company’s larger interests. Results should always be measured against the company’s purpose and ultimate objectives as well.

Fix, repair, and prune. Nature has built-in repair mechanisms. At the cellular level, antibodies identify and neutralize foreign matter that doesn’t belong. On a larger scale, small forest fires keep a forest healthy and reduce the likelihood of a major fire by preventing its spread with burnt-out patches. And more recently it has been shown that forgetting is a critical function of intelligent organisms, requiring its own active processes and mechanisms.

Organizations can replicate those mechanisms by creating protocols and social norms that encourage people to look out for and eliminate obsolete processes. At Netflix, for example, the company’s famous “Reference Guide on Our Freedom & Responsibility Culture” stipulates that it is the duty of managers to eliminate unnecessary rules. This principle enables the company to continue to develop new products and processes while avoiding a continual increase in total complexity. It is also credited with increasing the general level and pace of innovation. In the absence of an explicit injunction like this, managers might allow procedures and rules to reach the point where nobody has a complete understanding of them.

Sometimes complexity accumulates until it is intractable and hard to reduce through incremental action. In such situations, organizations should have explicit processes for retiring obsolete units and recycling resources to emerging opportunities. One way of achieving this is to establish new

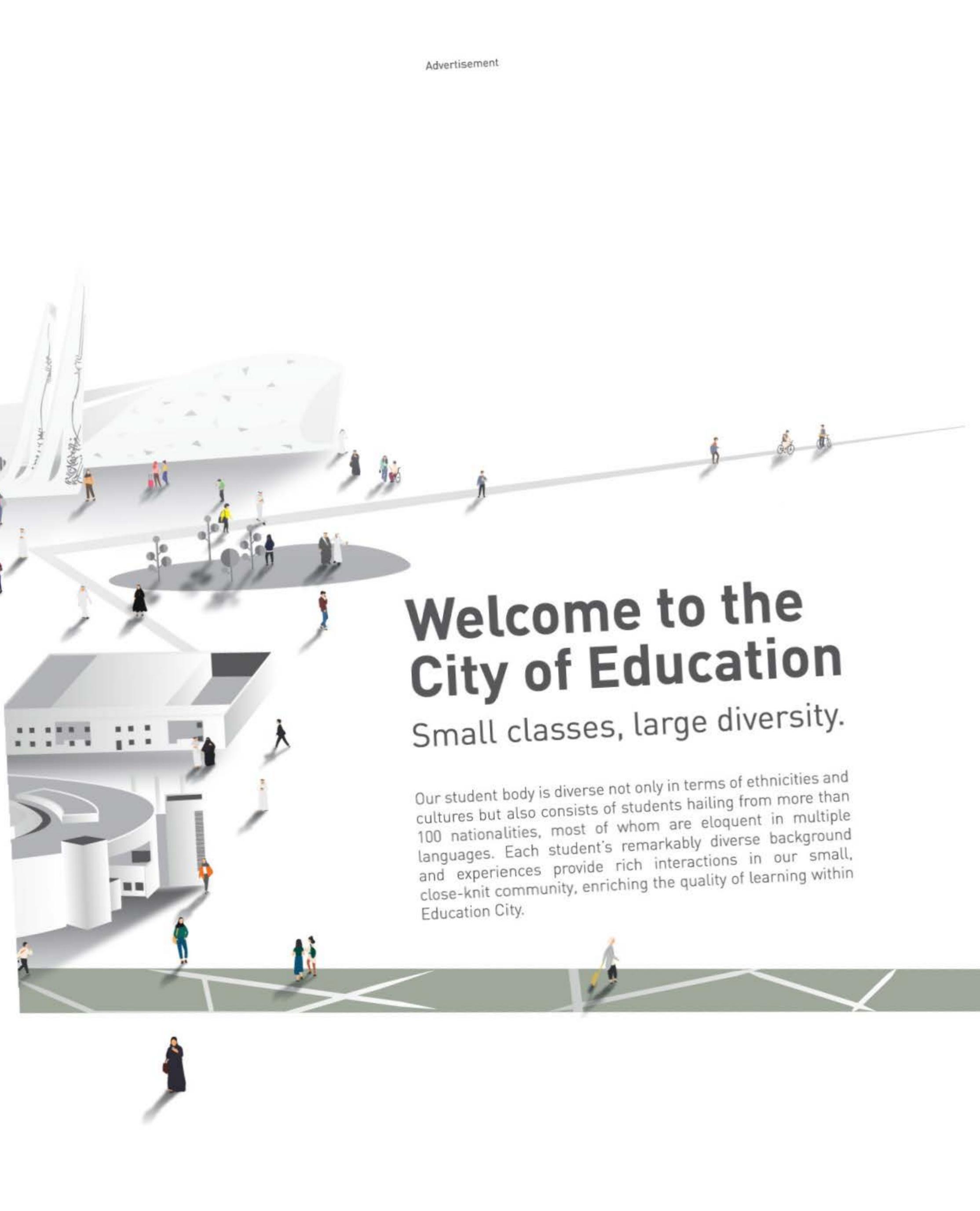
structures with a finite time horizon, identifying exit strategies in advance. By building in exit options at the beginning, rather than subjecting legacy elements to endless modification, leaders can avoid the accumulation of excessive complexity. Pharmaceutical companies take this approach because they know that patent coverage for new products will expire at some point. Product teams therefore have a finite, knowable life.

MANAGERS MAY PREFER simplicity over complexity, but the truth is that complexity is increasingly necessary for viability and competitiveness in today’s dynamic, unpredictable business environment. If your industry is prone to technological change and rapid obsolescence, then the package of resilience, adaptability, coordination, and inimitability becomes more attractive than the package of efficiency, understandability, manageability, and predictability. Maintaining complexity within productive bounds, however, is a difficult task involving challenging trade-offs. Fortunately, we can learn from a handful of pioneering businesses—and from biological systems—how to harness complexity on a sustainable basis.  **HBR Reprint R2001J**

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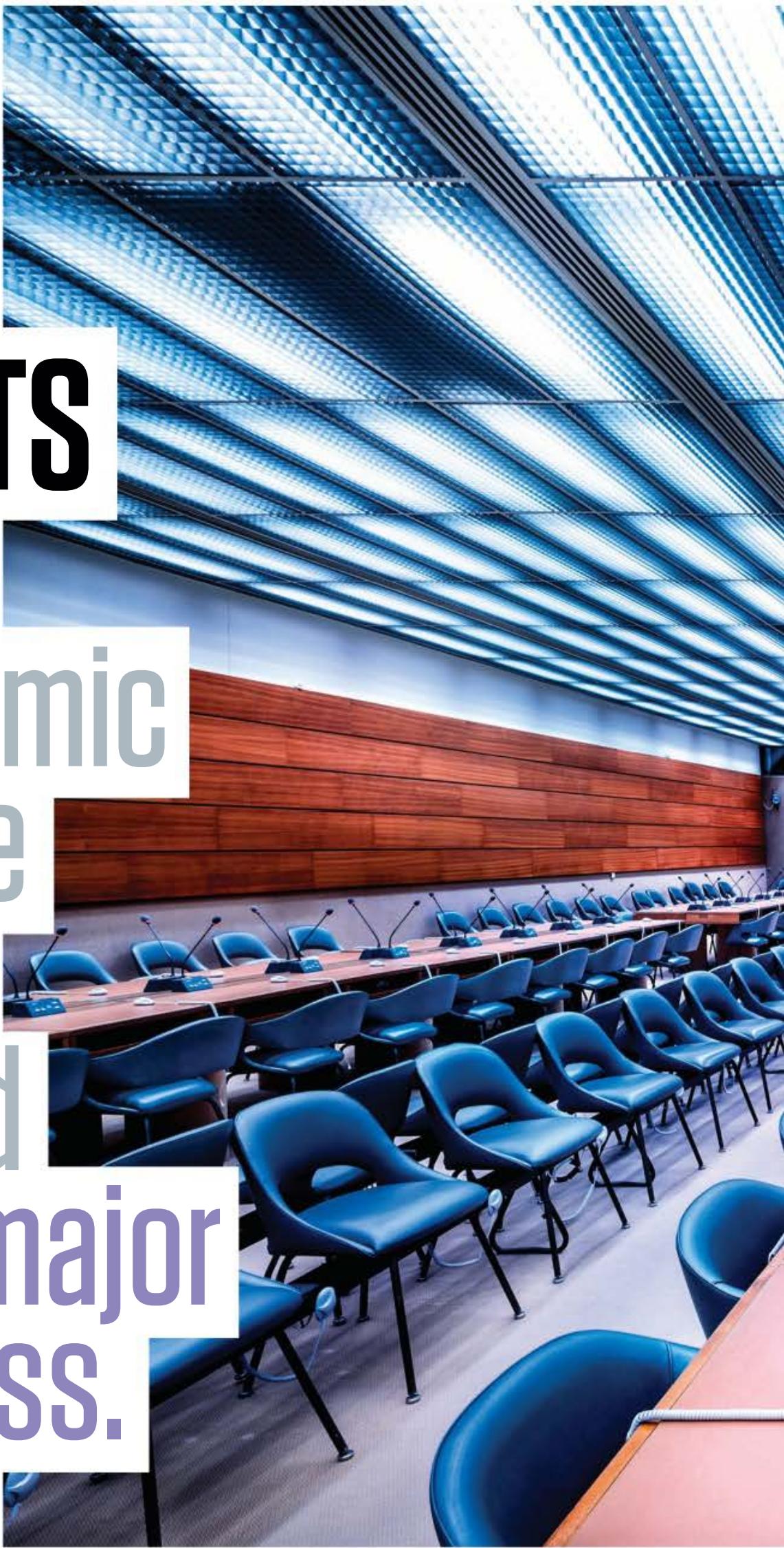
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CHOKE POINTS

Countries are turning economic infrastructure into political weapons, and that poses a major risk to business.



PHOTOGRAPHER LUCA ZANIER



IDEA IN BRIEF

THE VULNERABILITY

To keep the global economy working smoothly, crucial resources such as money, information, and components pass through an intricate system of conduits. But while this critical invisible infrastructure may seem to be decentralized and have multiple redundancies, it has significant choke points.

THE NEW RISK

A new political risk comes from powerful, wealthy states—especially the United States—that use legal authority or coercion to turn economic networks into tools of domination, ensnaring businesses in the process.

THE RESPONSE

Multinational businesses should analyze their exposure to network choke points. Lobbying government officials and teaming up with industry peers to resist coercion can mitigate the risks.



Since the end of the Cold War,

businesses have built an awe-inspiring global infrastructure. Digital pipelines move vast amounts of capital and data around the world, and supply chains crisscross international boundaries in a spider web of commerce. An intricate system of networks keeps the global economy running smoothly, but it's easy to take for granted, because it remains largely hidden from view.

Though these networks appear to have multiple redundancies and to be decentralized, many have significant choke points. Global finance relies on a single organization in Belgium to relay the majority of transactions between banks. Cloud computing's information storage facilities are often located in the United States. Complex supply chains can be dependent

Luca Zanier/Anzenberger



ABOUT THE ART

Photographer Luca Zanier's project *Corridors of Power* investigates international sites of political and economic power and the often unseen rooms where important decisions are made. Previous spread: UN Room XXIV, Geneva 2013. Left: Council of Europe Strasbourg I, Committee of Ministers, 2015.



on a handful of components, like the chips Qualcomm makes for devices with the Android operating system.

These choke points allow seemingly neutral infrastructure to be manipulated by governments to further their national strategic goals. China's push into 5G equipment has raised concerns in the West precisely because it might give the Chinese access to key parts of emerging communications networks. Japan recently restricted the export to South Korea of three chemicals crucial to the production of semiconductors, because of a political spat with Seoul. And the United States has aggressively exploited its control of a variety of seemingly technical structures that make global trade possible; it now appears increasingly willing to turn those structures into a machinery of domination.

This new reality was summed up by former NSA director Michael Hayden in describing why the U.S. government coerced tech companies to help its surveillance efforts by sharing confidential information routed through private servers on U.S. soil: "This is a home game for us....Why would we not turn the most powerful telecommunications and computing management structure on the planet to our use?"

Today the political risk businesses face doesn't come just from developing countries that might abruptly change market rules or nationalize assets. It comes from powerful, wealthy states that are turning economic networks into political weapons. The stakes are high. Companies that are isolated from critical networks can go out of business. A global bank blocked by the United States from accessing a secure interbank communication system because it provides financial services to an American adversary is not going to be a global bank for long. A technology manufacturer that can't buy sophisticated chips is in big trouble. Businesses that control digital hubs and are pressed into service by states can suffer reputational damage. U.S. tech giants like Google and Facebook, for example, took a hit in foreign markets after Edward Snowden revealed that they had cooperated with U.S. surveillance activities.

What can global firms do to protect themselves? The key is to understand the specifics of the networks your organization depends on and then create a strategy to address the possibility that they will become weaponized. But to start with, executives need to accept that the world—and specifically, America's role in it—has changed.

AMERICA'S NEW ROLE

As political scientists, we've been studying the United States' use of economic networks to achieve its national objectives for close to two decades, and we feel that the corporate world consistently underestimates the risks from this form of political muscle flexing. In large part that's because the country has long been a proponent and guarantor of global business, so it's hard to conceive of it as a potential threat. It's equally hard to imagine that the networks that have been the driving force of globalization could be used to chain and entangle companies. But we believe that the "America first" approach, which treats international business infrastructure as a political tool, is profoundly reshaping the world economy.

Note that this isn't a new strategy for the United States; Hayden's remarks were made in 2013. Indeed, the George W. Bush and Obama administrations both used U.S. Treasury controls and the dollar-clearing system—which converts foreign currencies into dollars, the lingua franca of international trade—to try to prevent financial institutions from providing services to Iran and North Korea. America's intelligence services pressed U.S.-based internet-communications firms not only to provide data on suspected terrorists but also to help spy on U.S. adversaries, rivals, and even partners.

However, what started as an aggressive and coordinated response after 9/11 has been supercharged by the Trump administration, which at times has replaced diplomacy with the raw exercise of power. The president has increasingly been weaponizing economic networks and has rarely coordinated with businesses or allies when doing so. And his administration has targeted developed nations and economic powers like China rather than rogue regimes and terrorists, which has emboldened China and other countries to retaliate or even mimic America's tactics to further their own interests.

To understand how things have changed, consider America's sanctions against Iran. The Society for Worldwide Interbank Financial Telecommunication (SWIFT), based in Belgium, runs a secure financial-messaging service that is used for most global financial transactions. In 2012 the Obama administration and the European Union used this choke point to press Tehran for concessions on its nuclear program. They cut Iranian financial institutions out of SWIFT in 2012 but then restored access after a nuclear deal was struck in 2015.



ECONOMICS
+
SOCIETY

CLOCKWISE FROM TOP LEFT: EU Parliament

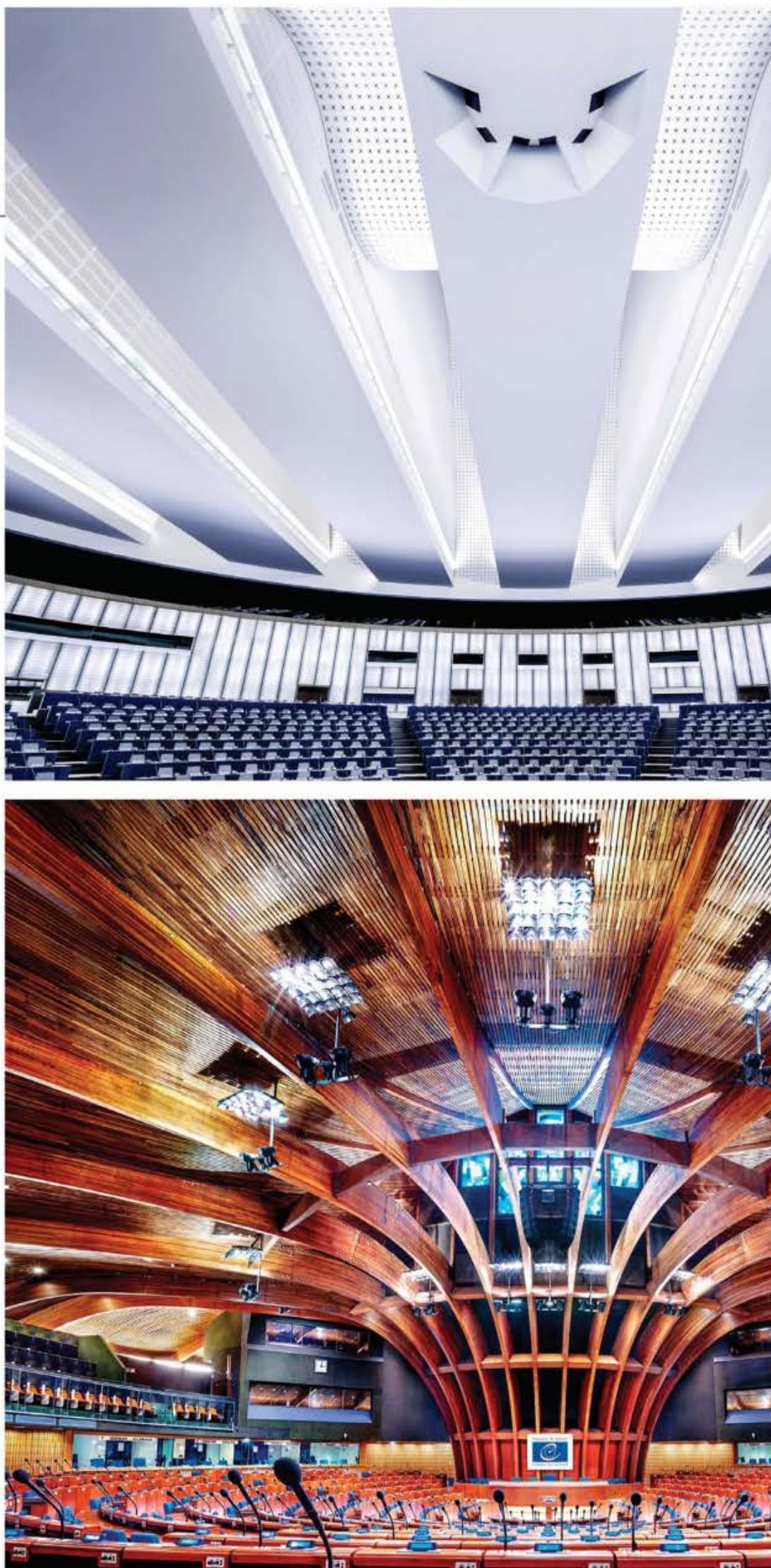
Strasbourg II, Plenary Chamber 2015;

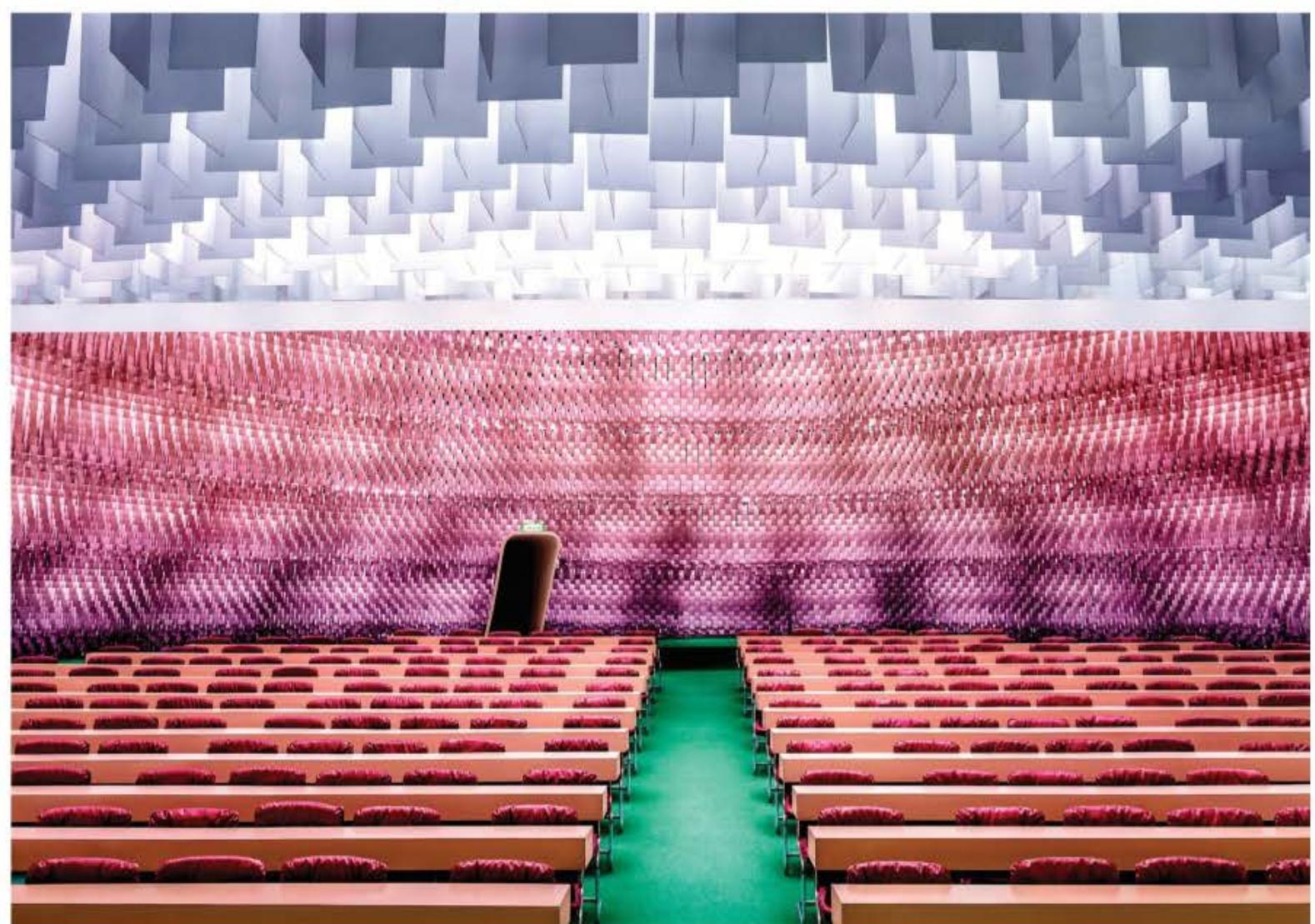
UN Security Council, New York 2008; PCF French Communist Party, Paris 2010; Council of Europe Strasbourg, Parliamentary Assembly 2015.

During the presidential campaign, Trump railed against the agreement with Iran. Despite desperate attempts by European politicians to save it, the United States withdrew from it in 2018 and then unilaterally reinstated sanctions that made it illegal to buy Iranian oil. Any banks—including foreign banks—that facilitate such transactions could face U.S. fines. BNP Paribas and others had already paid billions of dollars in penalties for violating the previous round of sanctions. Citing the risk that new fines associated with Iranian trades could destabilize the financial system, SWIFT felt it had no choice but to cut off Iranian banks' access in 2018. This time the Europeans were apoplectic. French finance minister Bruno Le Maire said that European countries should not accept the United States as the "economic policeman of the planet" and allow themselves to become its "vassals."

The Trump administration has also exploited its de facto control of the flow of crucial tech components to target both China and rogue states like Iran and North Korea. From 2010 to 2016 the Chinese telecommunications manufacturer ZTE sold restricted technologies to Iran and North Korea, violating U.S. export controls. It was forced to agree to an expensive settlement with U.S. authorities. When ZTE flouted that settlement, the U.S. government banned American firms from supplying ZTE with parts, including the Qualcomm chips it needs. This might have driven ZTE out of business if President Trump had not swapped a lighter penalty for concessions in his trade fight with China.

More recently, the U.S. government blacklisted the Chinese telecommunications giant Huawei. Corporate America had expected the United States to ban Huawei from selling to domestic markets. Many in the business community, however, didn't anticipate the decision to restrict the export of U.S. technology to Huawei, putting the firm's very existence in danger and injecting uncertainty into global supply chains. Huawei estimated that more than 1,200 U.S. firms would lose contracts with it. Google has warned that it will not provide Android to new Huawei phones, and Microsoft temporarily stopped selling Huawei laptops in its online store. This has led China to threaten to constrain its sales of essential rare-earth metals to U.S. technology companies and to start building its own blacklist of foreign firms. FedEx is at risk of being put on that list, because the Chinese government claims that the company knowingly rerouted







Huawei packages destined for China from other countries in Asia to the United States. U.S. manufacturers are frantically checking their supply chains to identify Chinese partners that might be subject to the new economic tensions, while financial firms are asking whether they want to orient themselves toward the United States or China. Everyone fears the worst is yet to come, because Trump has “ordered” U.S. companies to immediately find alternatives to Chinese suppliers, and other U.S. policy makers are asking whether America needs to “decouple” its economy from China’s. In October 2019 the U.S. government blacklisted an additional 28 Chinese firms for their role in human rights violations against Muslim minorities in China. As of this writing, the U.S. Justice Department was trying to block the completion of a \$300 million submarine cable that would connect Hong Kong and Los Angeles—and had already mostly been laid by Google, Facebook, and Dr. Peng Telecom & Media Group, a Chinese company—on the grounds of national security.

A NEW GAME

As other powerful states respond to and even model the U.S. strategy, a war is quietly being waged through manufacturing ties and business relationships. U.S. officials are concerned that Chinese-produced components could be compromised and then deployed in surveillance activities or even sabotage. Chinese leaders fear that the United States will use the ZTE playbook against more Chinese firms. They worry that America sees Chinese economic strength as a security threat and will do everything it can to hamper and even cripple the Chinese economy. This is one reason they’re trying to accelerate their ability to develop and manufacture advanced chips: so that they won’t be at the mercy of the U.S. government.

Although the European Union has officially identified China as a rival and begun to pay much closer attention to Chinese acquisitions, it is still far less belligerent toward China than the United States is. Indeed, it’s beginning to create ways to work around U.S. economic power and perhaps even oppose it. For instance, Europeans have started to experiment with alternative financial channels that are less exposed to U.S. pressure. In 2019 the governments of France, Germany, and the United Kingdom jointly created an international barter system, known as Instex, which offers an alternative

payment method that circumvents U.S. sanctions on Iran. Instex has had teething problems, and trade between Iran and Europe is negligible, but Europe’s experiment may give it the tools to counteract future U.S. sanctions against much more economically important countries, like Russia.

Disputes can quickly escalate. When Japan pushed back against South Korean claims for World War II reparations by blocking the export to Korea of key chemicals needed by the semiconductor and manufacturing industries, it sent chills through the boardrooms at Samsung and LG. South Korea, in turn, has threatened to retaliate by cutting off supplies of heating oil to Japan. Businesses are being forced into involuntary service in purely political disputes.

UNDERSTANDING YOUR EXPOSURE

The firms located at choke points are the most directly at risk. Google’s Android operating system, Visa’s payment channel, FedEx’s courier and logistics services, and Qualcomm’s chips are all hugely profitable because they sit at the center of vast global networks everyone wants access to. Their market control has always been a gold mine. It’s now also a political vulnerability, creating dependencies that powerful governments may want to exploit for national security purposes.

Companies that lie at emerging choke points are likely to also come under pressure. Behind the U.S. case against Huawei is a straightforward fear: that America will lose control over 5G networks and the internet of things. U.S. security would be threatened in a world where everyone depends on Chinese communications technology. Building a choke point, knowingly or not, puts you in the crosshairs.

When governments target choke-point companies, other businesses can get caught in the crossfire. The U.S. ban on Huawei reverberated throughout the firm’s supply chain. The U.S. chipmaker Skyworks, which got 12% of its sales from Huawei, was blindsided; its stock fell sharply and took weeks to recover. Upstream, political uncertainty is leading all telecommunications firms to delay 5G investments. The CEO of Sweden’s Tele2, Anders Nilsson, put it bluntly: “Decisions are postponed. This is not only Huawei; this is all vendors.”

As China retaliates, the economic fallout is likely to spread. Cisco’s CEO, Chuck Robbins, says the anti-American backlash in China is hurting his company: “We’re being uninvited to bid. We are not even being allowed to participate anymore.” Tertiary companies that are neither choke-point providers nor directly up- or downstream will also be affected. A slowdown in 5G’s rollout will reshape entire markets for mobile equipment, audiovisual offerings, and smart, connected products.

Can’t diversification help companies avoid this new form of risk? Firms don’t like relying on a single supplier anyway,

since that supplier might raise prices, defect to competitors, or go bust. But diversification won't mitigate political risk if all the suppliers of, say, a critical component are in the same country or dependent on the same choke point. Instead, executives should think about developing alternative network hubs or in-house or in-country capabilities that allow them to minimize vulnerabilities. After the ZTE incident, Huawei saw that it was at risk and stockpiled its U.S.-made components. Increased redundancy may also reduce vulnerability.

Doing an analysis of the risk your specific sector faces is helpful too. The Trump administration (and, ultimately, its successors) will probably weaponize a host of networks, but some sectors are more exposed than others are. In recent disputes with China, the United States has focused on technologies like telecommunications, drones, and surveillance systems, all of which are viewed as having both commercial and military applications. But less-obvious sectors are increasingly vulnerable. It is unlikely that Beijing Kunlun Tech expected the United States to request that it divest Grindr, a gay dating network, but if it had thought about how personal information could be used for blackmail, it might have foreseen the possibility. Companies that did not think of their sectors as politically risky—perhaps because they were producing relatively innocuous products such as camera-enabled doorbells—should have paid attention when U.S. defense legislation targeted Hikvision and its surveillance technology in early 2018. The U.S. intelligence community has also been issuing warnings about Huawei for several years. Executives dismiss these “weak signals” at their own peril.

MITIGATING THE RISK

Identifying risks is only the first step. As the global economy moves away from open trade, companies need new strategies and relationships that balance economic efficiency with security. Firms essentially have three choices: collaborate, resist, or educate.

After the terrorist attacks on 9/11, the U.S. government sought private sector help. A group of firms running network choke points, most notably FedEx, volunteered to work with it. FedEx CEO Fred Smith argued at the time, “All we are trying to do is to protect our assets and not have our assets be used for bad purposes.” This approach can have great benefits, but it may pose problems in a world where cooperating with one government may provoke another government to target you. HSBC, for instance, complied with U.S. authorities’ demand for financial information on Huawei, and now it is at risk of being blacklisted by the Chinese government.

Some firms may be less enthusiastic about cooperation and decide to push back. Apple, for example, is a tempting

target. The iPhone operating system is potentially a key hub for surveillance, allowing governments to learn what people are saying to one another. This is one reason Apple tried to design the system to make it impossible for anyone—even Apple itself—to access the phones without user passwords. Microsoft, which faces similar pressures from governments that want its data, has responded in a more directly political way. It is spearheading a global initiative known as the Digital Geneva Convention to develop core norms of cybersecurity. The goal is to persuade private companies to collectively commit to limiting offensive cyberattacks—including those by the U.S. government. Already over 100 firms have signed the initiative’s Cybersecurity Tech Accord. As tensions heat up between the United States and China and Russia, businesses with control of economic choke points will need to consider how they can work together to depoliticize their roles.

Businesses can also reduce some of the potential fallout of network attacks by educating government officials. Network connections are so complex that policy makers often don’t understand how interventions could produce unexpected consequences. When the United States announced sanctions against the Russian metals giant Rusal, it did not anticipate that they might bring the European auto industry to a halt, and it had to modify them swiftly. The more businesses’ government-relations offices can do to educate policy makers, the better. Firms also can push back directly against the most disruptive policies. In the wake of the initial Huawei ban, the U.S. semiconductor industry quietly lobbied the Commerce Department and the White House to ease it.

Once it was the places that globalization hadn’t yet reached that were politically dangerous. Now new political risks are found right at the heart of the global economy. They’re coming from the very infrastructure that facilitates global business, which powerful states are weaponizing. Executives who fail to understand this new world are likely to run into serious trouble. ☰

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Changes for the Better: Mitsubishi Electric's Next 100 Years Growing in Line with Human Development

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The year 2021 will mark the 100th anniversary of our company, which has become a suite of independent companies that are active in almost every sector of industry worldwide, ranging from utility systems and consumer electronics to semiconductors and space technologies.

As we look forward to the next 100 years, Mitsubishi Electric is focused on becoming an environmentally advanced company that can realize our “conglomerate premium,” leveraging the unity and diversity of our 12 business units (see graphic

below) around the world, to enhance the quality of life in our society and achieve sustainable growth.

We know that as an integrated electronics and electrical manufacturer, we can address challenges like climate change, the growth of sustainable cities, and clean energy while at the same time generating value through technological and business synergies. Under our “Environmental Sustainability Vision 2050,” we will work on climate change countermeasures, resource recycling and natural coexistence.

We signed the UN Global Compact in May 2018 to promote CSR activities that align with the international standard. Now, with our Global Only One strategy, we are focused on using our technological development at the global level to offer solutions to the grassroots level so that we can contribute to the sustainable development goals (SDGs).

In order to develop the right products and solutions, Mitsubishi Electric carried out fact-finding missions to gain insight into explosive social issues in each region and country. We addressed these issues through our best disruptive innovation solutions in an effort to facilitate growth according to four economic development stages: 1) underdeveloped developing, 2) emerging, 3) newly industrialized, and 4) developed economies.

With this understanding of the unique needs and challenges in each country/area, we have built a regional strategy that allows us to tap our wider global portfolio of the company group and the expertise accumulated over 100 years to solve social issues and accelerate economic growth in each country. As a global general electronics and electrical manufacturer, we believe we are in a unique position to provide solutions, in one stop, geared to each region's social issues and development stages.

Mitsubishi Electric Focuses on a Wide Range

Infrastructure



Clean & safe water

Industry



Productivity improvement & labor optimization

Stable Water & Electricity



Water resource management

Generating Employment Opportunities Manufacturing Evolution



Labor saving & automation



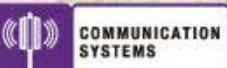
ENERGY
SYSTEMS



VISUAL INFORMATION
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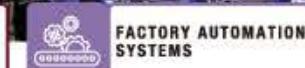
PUBLIC
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IT SOLUTION
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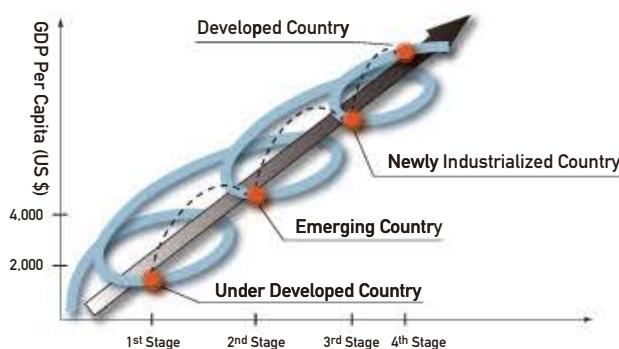


FACTORY AUTOMATION
SYSTEMS



SEMICONDUCTORS AND
DEVICES

As countries face challenges around industrialization and urbanization, our solutions are focused on four pillars of social issues: "Infrastructure," "Industry," "Mobility," and "Life," as detailed in the graphic below.



Our company is already a leader in innovation and sustainability. For instance, the efficient use of energy has grown in importance globally. Consumers are conscious of not only their utility expenses, but the impact on the environment when selecting home appliances such as air conditioners and heating systems.

As a leading air conditioning system manufacturer that has long strived to

provide comfort in a sustainable manner, we ensure that our products are at the forefront of energy efficiency. The Air to Water (ATW) Heat Pump System, which has been installed in homes across Europe and in other regions, exemplifies our expertise. It is markedly more efficient than traditional boiler systems that use electricity, gas, or oil. With conventional boiler systems, one kilowatt of input energy yields less than one kilowatt of output energy or heat. Our system uses a heat pump that can produce two to five times more heat in a hot water boiler by absorbing heat from outdoor air.

We are also innovators in transportation. The motor that propels a train can be used to generate power when it is slowing down or stopping, and this power can be transformed and used elsewhere as electricity. Mitsubishi Electric has developed advanced equipment to harness and share this power—called “regenerative power”—so it can be used not only by other trains when they accelerate, but in station buildings as well. It is realized with our in-house power device “IGBT.” Today our Advanced Power Technology for Trains can greatly reduce the

massive energy requirements of modern-day railway systems.

As we approach our 100th anniversary, our goals are both to become a group company that responds to the demands of our era and to achieve a higher level of growth through continuous innovation. It is boosted through the advantage of our “conglomerate premium.”

To realize a society that is simultaneously “sustainable” and “safe, secure, and comfortable,” we are committed to delivering satisfaction to all parties related to us, including society, customers, shareholders, and employees, while at the same time nurturing sound growth.

The Mitsubishi Electric Group hopes to build a better tomorrow by contributing to the creation of new societies, industries, and lifestyles. For more information, visit Mitsubishi Electric's website at www.MitsubishiElectric.com.



of Innovation to Create a Sustainable Future

Mobility



Improvement of traffic congestion

Life



Quality of life

Fast & Safe Mobility



Enriching people's lives with smarter mobility

Healthy & Comfortable Life



Sustainable comfort to the corners of the earth



TRANSPORTATION
SYSTEMS



SPACE
SYSTEMS



AUTOMOTIVE
EQUIPMENT



AIR CONDITIONING
SYSTEMS



BUILDING
SYSTEMS

The Big Idea Mobilizing for Climate Action



January 2020
Online at hbr.org/big-ideas

Westend61/Getty Images

Experience



MANAGING YOURSELF

BUILDING AN ETHICAL CAREER

A three-stage approach to navigating moral challenges at work

by Maryam Kouchaki and Isaac H. Smith

MOST OF US THINK of ourselves as good people. We set out to be ethical, and we hope that in pivotal moments we will rise to the occasion. But when it comes to building an ethical career, good intentions are insufficient. Decades' worth of research has identified social and psychological processes and biases that cloud people's moral judgment, leading them to violate their own values and often to create contorted, post hoc justifications for their behavior. So how can you ensure that from day to day and decade to decade you will do the right thing in your professional life?

The first step requires shifting to a mindset we term *moral humility*—the recognition that we all have the capacity to transgress if we're not vigilant. Moral humility pushes people to admit

that temptations, rationalizations, and situations can lead even the best of us to misbehave, and it encourages them to think of ethics as not only avoiding the bad but also pursuing the good. It helps them see this sort of character development as a lifelong pursuit. We've been conducting research on morality and ethics in the workplace for more than a decade, and on the basis of our own and others' findings, we suggest that people who want to develop ethical careers should consider a three-stage approach: (1) Prepare in advance for moral challenges; (2) make good decisions in the moment; and (3) reflect on and learn from moral successes and failures.

PLANNING TO BE GOOD

Preparing for ethical challenges is important, because people are often well aware of what they *should* do when thinking about the future but tend to focus on what they *want* to do in the present. This tendency to overestimate the virtuousness of our future selves is part of what Ann Tenbrunsel of Notre Dame and colleagues call *the ethical mirage*.

Counteracting this bias begins with understanding your personal strengths and weaknesses. What are your values? When are you most likely to violate them? In his book *The Road to Character*, David Brooks distinguishes between *résumé* virtues (skills, abilities, and accomplishments that you can put on your résumé, such as "increased ROI by 10% on a multimillion-dollar project") and *eulogy* virtues (things people praise you for after you've died, such as being a loyal friend, kind, and a hard worker). Although the two categories may

overlap, résumé virtues often relate to what you've done for yourself, whereas eulogy virtues relate to the person you are and what you've done for others—that is, your character.

So ask yourself: What eulogy virtues am I trying to develop? Or, as the management guru Peter Drucker asked, "What do you want to be remembered for?" and "What do you want to contribute?" Framing your professional life as a quest for contribution rather than achievement can fundamentally change the way you approach your career. And it's helpful to consider those questions early, before you develop mindsets, habits, and routines that are resistant to change.

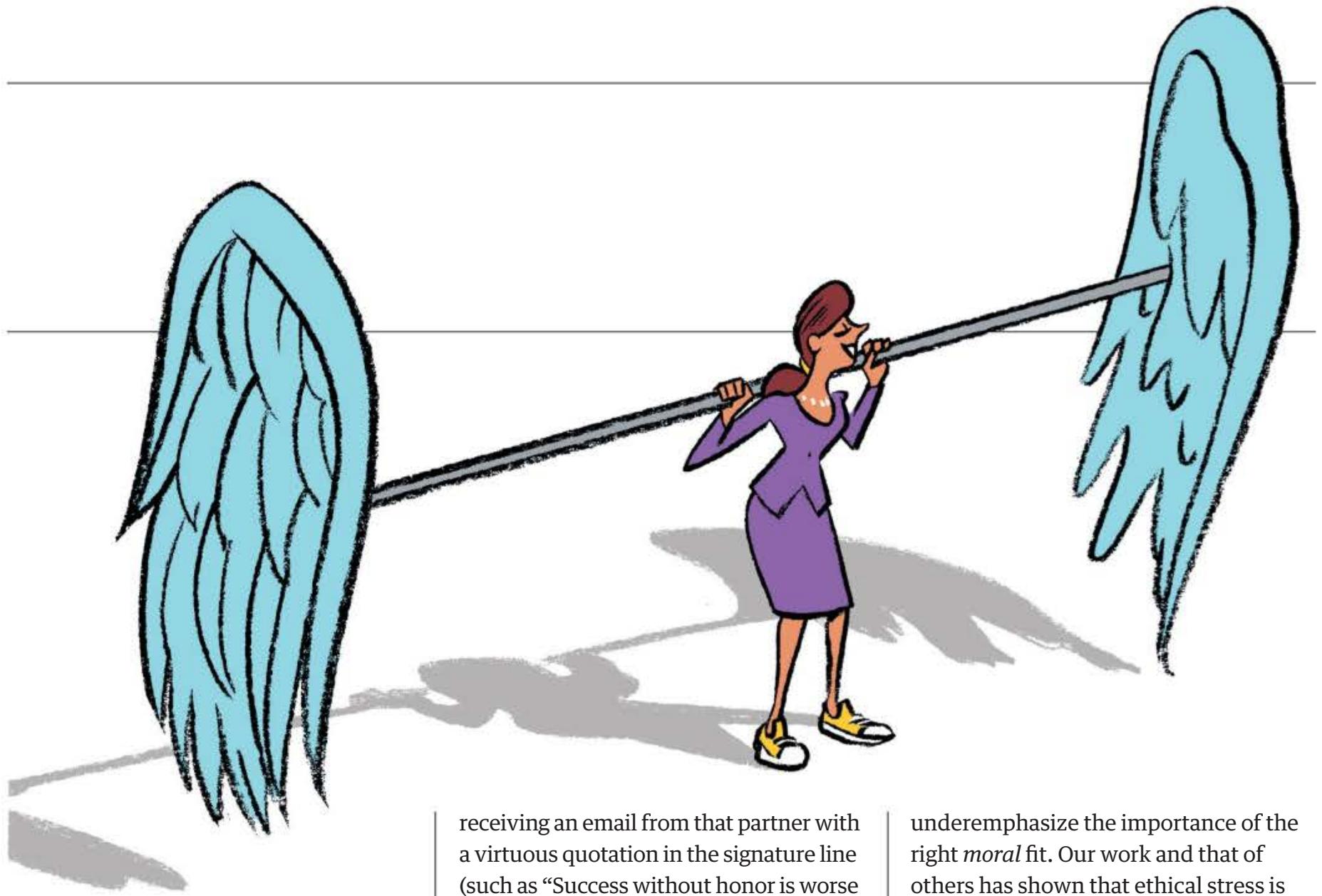
Goal setting can also lay the groundwork for ethical behavior. Professionals regularly set targets for many aspects of their work and personal lives, yet few think to approach ethics in this way. Benjamin Franklin famously wrote in his autobiography about trying to master 13 traits he identified as essential for a virtuous life (including industry, justice, and humility). He even created a chart to track his daily progress. We don't suggest that everyone engage in similarly rigid documentation, but we do suggest that you sit down and write out eulogy-virtue goals that are challenging but attainable. That is similar to what Clayton Christensen of Harvard Business School advocated in his HBR article "How Will You Measure Your Life?" After battling cancer, Christensen decided that the metric that mattered most to him was "the individual people whose lives I've touched."

Even the most carefully constructed goals, however, are still just good intentions. They must be fortified by

personal safeguards—that is, habits and tendencies that have been shown to bring out people's better angels. For instance, studies suggest that quality sleep, personal prayer (for the religious), and mindfulness can help people manage and strengthen their self-control and resist temptation at work.

We also recommend "if-then planning"—what the psychologist Peter Gollwitzer calls *implementation intentions*. Dozens of research studies have shown that this practice ("If X happens, then I will do Y") can be effective in changing people's behavior, especially when such plans are voiced aloud. They can be simple but must also be specific, tying a situational cue (a trigger) to a desired behavior. For example: *If* my boss asks me to do something potentially unethical, *then* I will turn to a friend or a mentor outside the organization for advice before acting. *If* I am solicited for a bribe, *then* I will consult my company's legal team and formal policies for guidance. *If* I witness sexual harassment or racial prejudice, *then* I will immediately stand up for the victim. Making if-then plans tailored to your strengths, weaknesses, values, and circumstances can help protect you against lapses in self-control, or inaction when action is required. But be sure to make your if-then plans *before* you encounter the situation—preparation is key.

Mentors, too, can help you avoid ethical missteps. When expanding your professional network and developing relationships with advisers, don't look only for those who can hasten your climb up the career ladder; also consider who might be able to support you when it comes to moral decisions. Build



connections with people inside and outside your organization whose values are similar to yours and whom you can ask for ethics-related advice. Both of us have reached out to mentors for advice on ethical issues, and we teach our MBA students to do the same. Having a supportive network—and particularly a trusted ethical mentor—may also bring you opportunities to make a positive impact in your career.

Once you've made a commitment to living an ethical life, don't be shy about letting people know it. No one likes a holier-than-thou attitude, but subtle moral signaling can be helpful, particularly when it's directed at colleagues. You can do this by openly discussing potential moral challenges and how you would want to react or by building a reputation for doing things the right way. For example, in a study one of us (Maryam) conducted, participants were much less likely to ask an online partner to engage in unethical behavior after

receiving an email from that partner with a virtuous quotation in the signature line (such as "Success without honor is worse than fraud").

Direct conversation can be tricky, given that people are often hesitant to discuss ethically charged issues. But if you think it's possible, we recommend engaging your coworkers, because ambiguity is a breeding ground for self-interested rationalization. Tactfully ask clarifying questions and make your own expectations clear: for example, "I think it's important that we don't cross any ethical lines here."

We are all shaped more by our environment than we realize, so it's also critical to choose a workplace that will allow if not encourage you to behave ethically. Not surprisingly, employees who feel that their needs, abilities, and values fit well with their organization tend to be more satisfied and motivated than their misaligned peers, and they perform better. Of course, many factors go into choosing a job—but in general people tend to overemphasize traditional metrics such as compensation and promotion opportunities and

underemphasize the importance of the right *moral* fit. Our work and that of others has shown that ethical stress is a strong predictor of employee fatigue, decreased job satisfaction, lower motivation, and increased turnover.

Some industries seem to have cultural norms that are more or less amenable to dishonesty. In one study, when employees of a large international bank were reminded of their professional identity, they tended to cheat more, on average, than non-banker counterparts given the same reminder. This is not to say, of course, that all bankers are unethical, or that only unethical people should pursue careers in banking (although it does highlight how important it is for banks to prioritize hiring morally upstanding employees). We do suggest, however, that anyone starting a new job should learn about the organization and the relevant industry so as to prepare for morally compromising situations. Job interviews often conclude with the candidate's being asked, "Do you have any questions for me?" A possible response is "What types of ethical dilemmas

Experience

might be faced in this job?" or "What does this company do to promote ethical business practices?"

Research also shows that elements of a work environment can enhance or diminish self-control, regardless of cultural norms: High uncertainty, excessive cognitive demands, long days and late nights, and consecutive stretch goals all correlate with increased rates of unethical behavior. Such pressures may wax and wane over time in your workplace, but during periods of intensity you should be extra vigilant.

MAKING GOOD DECISIONS

Even if you've planned for an ethical career and established safeguards, it can be difficult to face moral challenges in the moment. Sometimes people overlook the implications of their decisions—or they find fanciful ways of rationalizing immoral, self-interested behavior. In other instances, they face quandaries in which the right decision isn't obvious—for example, a choice between loyalty to one's coworkers and loyalty to a customer, or a proposed solution that will produce both positive and negative externalities, such as good jobs but also environmental damage. There are several ways to manage moments of truth like these.

First, step back from traditional calculations such as cost-benefit analysis and ROI. Develop a habit of searching for the moral issues and ethical implications at stake in a given decision and analyze

them using multiple philosophical perspectives. For instance, from the rule-based perspective of deontology (the study of moral obligation), ask yourself what rules or principles are relevant. Will a certain course of action lead you to violate the principle of being honest or of respecting others? From the consequence-based perspective of utilitarianism, identify potential outcomes for all parties involved or affected either directly or indirectly. What is the greatest good for the greatest number of people? And from the Aristotelian perspective of virtue ethics, ask yourself, Which course of action would best reflect a virtuous person? Each of these philosophies has advantages and disadvantages, but addressing the fundamental decision criteria of all three—rules, consequences, and virtues—will make you less likely to overlook important ethical considerations.

Note, however, that the human mind is skilled at justifying morally questionable behavior when enticed by its benefits. We often tell ourselves things such as "Everyone does this," "I'm just following my boss's orders," "It's for the greater good," "It's not like I'm robbing a bank," and "It's their own fault—they deserve it." Three tests can help you avoid self-deceptive rationalizations.

1. *The publicity test.* Would you be comfortable having this choice, and your reasoning behind it, published on the front page of the local newspaper?
2. *The generalizability test.* Would you be comfortable having your decision serve as a precedent for all people facing a similar situation?
3. *The mirror test.* Would you like the person you saw in the mirror after making this decision—is that the person you truly want to be?

If the answer to any of these questions is no, think carefully before proceeding.

Studies also show that people are more likely to act unethically if they feel rushed. Very few decisions must be made in the moment. Taking some time for contemplation can help put things in perspective. In a classic social psychology experiment, students at Princeton Theological Seminary were much less likely to stop and help a stranger lying helpless on the ground if they were rushing to get to a lecture they were scheduled to give—on, ironically, the biblical parable of the Good Samaritan, which is about stopping to help a stranger lying helpless on the ground. So be aware of time pressures. Minding the old adage "Sleep on it" can often help you make better moral decisions. And





A wide array of research—in psychology, computer science, nursing, education—suggests that reflection is a critical first step in learning from past personal experiences.

delaying a decision may give you time to consult your ethical mentors. If they are unavailable, practice a variation on the mirror and publicity tests: Imagine explaining your actions to those advisers. If that would make you uncomfortable, be warned.

But taking an ethical stand often requires challenging coworkers or even superiors, which can be excruciatingly difficult. The now infamous Milgram experiments (wherein study participants administered potentially lethal shocks to innocent volunteers when they were instructed to do so by an experimenter) demonstrated how susceptible people can be to pressure from others—especially those in positions of power. How can you avoid succumbing to social pressure? The authors of *The Business Ethics Field Guide* offer a few questions to ask yourself in such situations: Do they have a right to request that I do this? Would others in the organization feel the same way I do about this? What are the requesters trying to accomplish? Could it be accomplished in a different way? Can I refuse to comply in a manner that helps them save face? In general, be wary of doing anything just because “everybody else is doing it” or your boss told you to. Take ownership of your actions.

And don’t forget that many ethical challenges people face at work have previously been confronted by others. As a result, companies often develop specific guidelines, protocols, and value statements. If in doubt about a certain situation, try consulting the formal policies of your organization. Does it have an established code of ethics? If not, ask your ethical mentor for guidance. And if you’re dealing with something you

view as clearly unethical but fear reprisal from a superior, check to see whether your organization has an ombudsman program or a whistle-blowing hotline.

REFLECTING AFTER THE FACT

Learning from experience is an iterative, lifelong pursuit: A lot of growth happens after decisions are made and actions taken. Ethical people aren’t perfect, but when they make mistakes, they review and reflect on them so that they can do better in the future. Indeed, a wide array of research—in fields as diverse as psychology, computer science, nursing, and education—suggests that reflection is a critical first step in learning from past personal experiences. Reflecting on both successes and failures helps people avoid not only repeated transgressions but also “identity segmentation,” wherein they compartmentalize their personal and professional lives and perhaps live by a very different moral code in each.

But self-reflection has limitations. Sometimes ethical lapses are obvious; other times the choice is ambiguous. What’s more, people can be hemmed in by their own perspectives as well as by their personal histories and biases. That’s why we should seek the counsel of people we trust. You can approach this as you would job performance feedback: by asking specific questions, avoiding defensiveness, and expressing gratitude.

Finally, you can engage in what Amy Wrzesniewski of Yale calls *job crafting*: shaping your work experiences by proactively adapting the tasks you undertake, your workplace relationships, and even how you perceive your job, such that work becomes more meaningful and

helps you fulfill your potential. You can apply job crafting to your ethical career by making bottom-up changes to your work and the way you approach it that will help you be more virtuous. For example, in some of the earliest studies on job crafting, Wrzesniewski and colleagues found that many hospital housekeepers viewed their work in a way that made them feel like healers, not janitors. They didn’t just clean rooms; they helped create a peaceful healing environment. One custodian used her smile and humor to help cancer patients relax and feel more comfortable. She looked for opportunities to interact with them, believing that she could be a momentary bright spot in the darkness of their ongoing chemotherapy. She crafted her job to help her develop and cultivate eulogy virtues such as love, compassion, kindness, and loyalty.

YOU MAY FEEL that it isn’t all that difficult to be an ethical professional. As your parents may have told you, just do the right thing. But the evidence suggests that out in the real world it becomes increasingly difficult to remain on the moral high ground. So take control of your ethical career by cultivating moral humility, preparing for challenging situations, maintaining your calm in the moment, and reflecting on how well you’ve lived up to your values and aspirations. ☰

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CASE STUDY

Give Your Colleague the Rating He Deserves—or the One He Wants?

by Anthony J. Mayo, Joshua D. Margolis, and Amy Gallo

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 "Ramesh Patel at Aragon Entertainment Limited" (case no. 412042-PDF-ENG), by Anthony J. Mayo and Joshua D. Margolis, which is available at [HBR.org](#).

THE KICKOFF

"You're always reliable," Nisha Nayad said to her colleague Mark Cruz as she entered the meeting room.

"I got here a minute ago," Mark replied, smiling as he opened his lunch. They both looked at the clock on the wall and laughed.

"I think we're the only two people at Ness who show up early," Nisha said. "Glad you're on this team."

Punctuality wasn't a big part of the culture at the gaming company Ness Entertainment,¹ so it didn't bother Nisha that her coworker Ben Lassner still hadn't arrived by a few minutes past noon. The three of them didn't typically work together, but they were about to. As members of Ness's Innovation Board, a group

selected from across the company to work directly with the executive committee on developing recommendations for line extensions and new titles, they'd been given a new, highly visible assignment—one that Nisha, a business development associate director, was excited about.

She, Mark, and Ben had huddled quickly a week earlier to lay out a work plan for analyzing customer data and the competitive market for one of Ness's hottest games, Sokontia, so that they could choose an appropriate follow-up story line and the timing for a sequel.

Nisha was happy with both her teammates.² Mark, an associate director of marketing, had an excellent reputation. And Ben, a quality control engineer, had been a friend since they'd met

Experience



during new-employee orientation. They still got together for lunch every few months, and because they were at the same level in different functions, they often traded notes and advice about their work at Ness.

At 12:10 Ben walked into the room, apologizing. "It's already been a day. A week, really. We've been doing QC on Knight Days," he said, referring to one of Ness's older products, which was about to release a new version. "And I forgot we were doing lunch. Let me go grab my food. Feel free to start without me."

When he returned, Nisha began sharing what she'd found in her initial review of the customer data on Sokontia. "It's clearly filling a void," she said. "The story line is a hit, and although the graphics get some mixed reviews,

I think there's potential for an early extension."

"I agree," Mark chimed in. Because he was in marketing, he had taken on the initial task of reading through user reviews from influencers. "A few reviewers are already talking about what a 2.0 might look like. Did you see the PDF I sent with the highlights?"

He turned his laptop toward them to show the file. Nisha had read it carefully the night before.

"When did you send this?" Ben asked, squinting at the screen.

"Wednesday," Mark replied.

"Oh, right," Ben said, taking a bite of his sandwich. "We just need to see how this all overlays with the usage statistics."

"Exactly," Mark said. He nodded expectantly, but Ben kept eating. Nisha was confused. They had agreed that Ben would do the initial analysis on those statistics.

"You didn't look at usage?" Mark asked, a slight edge to his voice. "Or read through anything either of us sent?"

"Not yet," Ben admitted.

"I guess let's get you up to speed then," Mark said tersely.

Nisha was annoyed too, and she wondered whether she should say something. Ness's HR department was big on peer feedback. At the urging of the CEO, Martine Skoll, the company had rolled out two initiatives aimed at getting people to be more honest and direct with one another: first difficult-conversations training,

and then an app that allowed employees to submit ratings and short snippets of feedback directly to teammates on their performance.

Toward the end of the meeting Nisha gave herself a mental pep talk and asked Ben, as calmly as she could, "Why didn't you do what you said you'd do?"

He flinched a little, but he'd been through the training too, so he probably knew he was supposed to engage without getting his hackles up.

"I dropped the ball. My bad. The day after I found out about this project, I was put in charge of the QC push for Knight Days. It's consumed me and my team. We've been understaffed since May. I won't show up this unprepared again. Promise."

Ben left, and Nisha walked with Mark to the elevator. "I've been on too many projects with people who expect me to carry their weight," he said. "We're not letting that happen here."³

Nisha agreed with Mark but also knew that Ben was probably in a tough spot. His boss had a reputation for holding her team to an extremely high standard. And didn't everyone miss deadlines occasionally? Ben had never been unreliable when they'd worked on small projects together in the past. So she wasn't worried—not really.

"I trust him," she reassured Mark. "He'll keep his word."

"He'd better," Mark warned.



Case Study Classroom Notes

1. *The global video game industry had revenues of more than \$130 billion in 2018, with mobile games being the fastest-growing and largest segment.*

2. *What are the benefits—or the downsides—of being on an ad hoc team, in which members often have no prior agreement on how to collaborate?*

3. *"Social loafing," when a team member disengages from the group's process and fails to contribute to its work, is a common phenomenon.*

Experience



4. What might Nisha have texted to Ben at this point, rather than silencing her concern?

5. Many peer feedback systems, such as JetBlue's Lift program and Hershey's Smiles program, favor positive recognition over constructive criticism.

6. Experts recommend including three things when giving feedback: a concrete description of the behavior, its impact, and who was affected.

NO SURPRISES

Three weeks later Nisha was on the train with her laptop open. During her 45-minute commute home, she always tackled a single task. Today it was the presentation for the executive committee. She, Mark, and Ben had met three more times and had put together what Nisha felt was a strong analysis and an aggressive recommendation. When the Innovation Board met with the executive committee the following Monday, the team was going to suggest launching an extension of Sokontia as soon as possible, on a faster timeline than the company had ever previously managed.

She had agreed to pull the presentation together for the team by the next day. She was just waiting for Ben to send his last two slides.

She refreshed her email at 5:40 PM, and seeing nothing from him, texted, "Any update?"

He'd promised to send his slides by end of day. He texted back immediately: "So sorry. If I send you the rough data, can you produce the slides?"

Nisha took a deep breath. She really had thought he would come through. She typed, "No, I can't. Can u stop being an idiot?" But then she deleted it. She didn't want to do anything to jeopardize her chances of impressing the executive committee. Even though Ben deserved a lashing for how much he'd slacked off on this project, she couldn't get into a fight with him now. And her slides would be better anyway.

She texted, "Sure. Send it."⁴ "I owe you one," he replied.

You sure do, she thought.

Nisha's thoughts quickly turned to the new peer feedback app. At the previous month's Innovation Board meeting, HR had announced that everyone was expected to use it after the next

round of projects. So Nisha would have to rate both Ben's and Mark's performance soon—on a scale of 0 to 5—and she'd be rated by them.⁵ It hadn't come up in their meetings, but it was on her mind—and probably theirs, too.

On the train now, she fantasized about pressing the 0 next to Ben's name, but then she felt guilty. He was her friend. And HR had said that there should be no surprises in the ratings, meaning that teammates should share feedback along the way so that people could either improve or know what numbers to expect.⁶

She texted Ben again: "Can we talk for a minute? I'm going to call you when I get to my stop."

When he answered the phone, he was apologetic. She interrupted him: "It's OK. I mean, it's not OK, but I wanted you to know that I'm frustrated, and I feel like I've been covering for you—"

"It's just that my other work—"



"You've said that several times," Nisha was intentionally being short. She didn't want to sugarcoat her feelings about this.

Ben was quiet for a minute. Then he said, "I'm really appreciative of everything. And I hope you know I'd do the same for you."

I doubt that, Nisha thought. And even if you would, I'd never ask you to.

That night she sent a quick note to her mentor from her last job, Dennis Hodges: "Can we meet tomorrow? I need your advice."

TO BE HONEST

The next morning Nisha met with Dennis at a diner near his office and explained what had happened during the project.

"It's not like I did all of his work," she said, "but when he got in trouble with deadlines, I definitely finished some of what

he'd started. The other team member, Mark, has been annoyed too, but he hasn't picked up Ben's slack as much as I have.⁷ That's on me. I didn't have to do any of it, but I want this assignment to go well. And it will. I'm confident we're going to knock it out of the park on Monday. We've done the analysis, we've got the data, and our recommendation is bold."

Dennis smiled. "I have no doubts. So what are you thinking?"

"I'm most nervous about this peer-rating system. If I were being honest, I'd probably give him a 2."⁸

"What's holding you back?" Dennis asked.

Nisha had to think about that for a second. "It doesn't feel like it's entirely his fault. He's had a lot of other commitments and a ton of pressure from his boss. And we've known each other since I started at Ness."

So I'm worried about putting a low rating on his permanent record—especially since Mark told me he's giving him a 3. Ben's tough and would probably recover. But he might also hold a grudge."

"Have you spoken directly with Ben about this already?"

"Yes, several times."

"So," Dennis said, "I would give him the rating he deserves."

JUST ONCE

On the morning of the presentation, Ben asked Nisha to meet him at the café down the street. She assumed he wanted to go over his slides, since she knew them better than he did at this point.

"I just wanted to thank you again for everything," he said. "I'll admit that I almost feel bad about my name being on there."

Nisha knew that the polite thing would be to protest, but she



7. Why might men and women respond differently to teammates who aren't doing their share?

8. Does Nisha know what her purpose is in giving this feedback? Experts say that having clear intentions improves the quality of feedback, the openness of the recipient, the durability of the relationship, and the value of subsequent discussion and learning.

Experience

bit her tongue. They sat there awkwardly for a moment.

"It's really been a tough few weeks," Ben said, trying to break the tension. Nisha nodded.

"I would understand if you rated me poorly on the feedback thing, but I hope you won't," he continued. Nisha suddenly realized why he'd asked for this meeting—and paid for her coffee.

"If you were in my shoes, I'd have your back and give you a 5, or at least a 4," Ben said.

"I haven't decided what I'm going to do," she answered truthfully.

"Everyone has bad days."

"We've been working on this for weeks," she said, realizing that her tone was getting sharp.

Ben's voice got testier too. "You know what I mean. My boss will freak if I get bad ratings. And I know Mark's giving me a 3. If you give me a 5, it'll balance out. I know I don't deserve it, but I'm hoping you can do this for me, as a friend. Just once."

 **ANTHONY J. MAYO** is the Thomas S. Murphy Senior Lecturer of Business Administration in the Organizational Behavior unit of Harvard Business School.

JOSHUA D. MARGOLIS is the James Dinan and Elizabeth Miller Professor of Business Administration and the head of the Organizational Behavior unit at HBS. **AMY GALLO** is a contributing editor at Harvard Business Review and the author of the HBR Guide to Dealing with Conflict.



What rating should Nisha give Ben, and what should she tell him? THE EXPERTS RESPOND



DAN GOLDENBERG is an executive at Activision Blizzard and leads the Call of Duty Endowment.

In the gaming industry, cross-functional, short-term ad hoc teams are common.

In that environment you have to collaborate with new colleagues quickly and easily. This won't be the last time Nisha faces a group dynamic like this, so she needs to figure it out now.

She has various tools at her disposal; the peer feedback app isn't the first one she should use. She needs to begin by talking to Ben—much more candidly than she has before.

I'm a military veteran. In the service we sardonically call tools like this app "peer spears," because they often hurt colleagues and don't necessarily improve their performance. Nisha might need to use it eventually—for example, if Ben won't listen to her perspective and commit to preventing similar problems in the future. But especially because this is the first time he's let her down, she should have an in-depth conversation with him before giving him a low rating.

During that talk Nisha needs to take on the role of peer mentor. A tactic I like to use with colleagues is the Five Whys, an iterative technique that helps get to the root of a problem. For example, Nisha might ask Ben, “Why weren’t you able to meet your commitments?” (“Because I’m too busy with my job.”) “Why are you too busy with your job?” (“Because my team is understaffed.”) “Why are you understaffed?” (“Because my boss hasn’t prioritized hiring.”) “Why hasn’t your boss prioritized hiring?” And so on. Ultimately she would arrive at an action item for Ben—such as talking to his boss about getting more resources—that doesn’t involve her, their project, or the rating but boosts performance, for both of them and for Ness.

Another option is to include Mark in the conversation with Ben. Although that might feel more confrontational, there is strength in numbers, with both Mark and Nisha emphasizing that a high-performing environment like Ness (or like Activision Blizzard, where I work) has no room for people who don’t pull their weight. By backing each other up, they might deter Ben from dismissing his part in this problem.

At a previous company, I managed two people like Ben and Nisha. I was starting a new business unit and had a lean team with very aggressive deadlines. I noticed that one of my analysts was working extremely hard and was exhausted. When I talked with him about it, I learned that he was disproportionately picking up a colleague’s load. Ultimately, after several frank counseling sessions, I let the slacker go, because it was clear that he’d expected a less-demanding job.

I don’t recommend that Nisha go to her manager now. I think problems should always be solved at the lowest possible level in an organization. She can retain it as an option down the road, but for now she should go the more direct route. The rating system is meant to encourage candor, and you can’t have high performance without that.



AIKO BETHEA is the principal of RARE Coaching & Consulting.

I agree with Nisha’s mentor.

Nisha shouldn’t give Ben a rating he doesn’t deserve. He knew from the outset that he would be strapped for time, yet he stayed involved and didn’t carry his weight. Now he’s trying to manipulate her into giving him a score that he didn’t earn. She needs to stand her ground.

Sometimes we give people a pass: for a death in the family, a challenge with a child, or an ongoing divorce. But this doesn’t seem to be the case with Ben. He isn’t the only one with a heavy workload, and he should have bowed out if he thought he couldn’t follow through on his commitments. The fact that he and Nisha are friends doesn’t mean she has to go easy on him.

Of course, it wouldn’t be fair to give him a low rating without providing context. As a coach, I don’t like to use 360 evaluations that ask for numbers only. I prefer to do stakeholder interviews in which I ask everyone who works closely with a leader for examples, stories, and nuance behind the feedback. Nisha should be direct with Ben: “I’m giving you a 3 because...” and then list the things he failed to do.

She may fantasize about giving him a 0 (and he may deserve it), but I would advise against anything less than a 3, because Nisha played a role in enabling his behavior. She should have set clearer boundaries and expectations up front and emphasized the impact that his contribution (or lack thereof) would have on his rating. For example, during that first meeting she could have said, “This is going to take a lot of time, and we’re going to be rating one another on our performance. Are you sure you have

the capacity to do this?” That would have clarified her thinking on the peer feedback system and might have preempted his later asking for the “favor” of a soft rating.

That wasn’t the only time Nisha failed to speak up. In several instances she considered telling Ben what she was thinking but didn’t. Next time she should trust her instincts. She doesn’t have to be harsh, but she should have the confidence to be more direct, especially with a colleague who is a friend.

Now Nisha should point out that what Ben has asked for isn’t right. She might say, “Do you think this is fair to me?” He should realize what an uncomfortable position he’s putting her in.

As someone who specializes in diversity and inclusion, I note that Mark doesn’t seem to worry about his low rating of Ben. Research shows that women are often expected to be nurturers, which makes many of us hesitant to anger others or potentially damage relationships. Nisha should resist this mindset. She’ll perpetuate the stereotype and possibly carry resentment, neither of which helps her.

Throughout my education and career I’ve encountered many people who just don’t contribute as others do on projects. It isn’t always easy to say something about it, but I’m usually pretty forthcoming. And although I’ve gotten blowback on occasion, I know things would be worse if I didn’t speak up.

Nisha wants to support Ben because he’s a friend. But if he felt comfortable asking his colleague to cover for him and complete his work, he lacks judgment and self-awareness. So, as his friend, Nisha should point this out rather than enable his shortcomings. If he can’t respect her holding her ground, she should also question whether this friendship has any value. ☺

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Reprint Case only R2001X
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SYNTHESIS

#METOO'S LEGACY

Lessons from the movement, and what women want next

by Nicole Torres

IT HAS BEEN two long years since the *New York Times* and *New Yorker* exposés into allegations of sexual abuse by Hollywood producer Harvey Weinstein ignited a global reckoning over the scourge of workplace harassment. In what has become known as the #MeToo movement, millions of women have shared their stories, hundreds of men have stepped down or lost their jobs, and several states have passed legislation to protect more workers (including independent contractors and domestic workers) from mistreatment.

But the road to progress is a bumpy one. As soon as #MeToo got going, so did concerns that it was going too far. Critics worried

about false accusations, lack of due process, punishments that exceed offenses, a thinning line between professional and personal conduct, and an ever-expanding gray area of what constitutes inappropriate behavior. Researchers have attempted to quantify the backlash, and some of the data is troubling. A 2019 survey by the University of Houston found an increase over the previous year in the number of men who reported being reluctant to hire attractive women or meet with them one-on-one. A University of Colorado Boulder survey found that while overt sexual harassment is on the decline, sexism is on the rise.

So where are we on that road to progress? New books and a film offer insight into how the movement went mainstream, what it has achieved so far, and what we, as employers and colleagues, must do to carry it forward. Two prominent look-backs—*She Said*, by *New York Times* reporters Jodi Kantor and Megan Twohey, and *Catch and Kill*, by *New Yorker* contributor Ronan Farrow—present engrossing accounts of their investigations into Weinstein and, in Farrow's case, further allegations against NBC's Matt Lauer. The biopic about Fox News's Roger Ailes, *Bombshell*, and the memoir *Whistleblower*, in which former Uber engineer Susan Fowler exposes its sexist "bro" culture, also reveal the forces that allow sexual harassment to persist in firms and enable perpetrators to evade accountability.

Kantor and Twohey describe a “cottage industry” for settlements that enriched lawyers and silenced victims. They call out corporate leaders (in their book, at Miramax) who turned a blind eye to internal reports of abuse as “deeply complicit.” In too many cases, women’s only option in seeking redress was to go public, risking their careers, reputations, and privacy, which seemed “inherently unfair,” the journalists write. “Why was it their burden to publicly tell uncomfortable stories when they had never done anything wrong?”

Society has a poor track record of believing accusers (at least when they point a finger at white men). In the introduction to their collection of essays, *Believe Me*, Jessica Valenti and Jaclyn Friedman argue that “we are close to a tipping point on trusting women” but are not there yet. In one of my favorite pieces, “He’s Unmarked, She’s Marked,” writer and activist Julia Serano explores the concept of markedness, a linguistics term for diverging from the norm. Women, she writes, are already marked relative to men in our culture. That means their “bodies and behaviors garner more attention” and their perspectives and experiences are relegated to subcategories (women’s issues, women’s studies). Markedness is also why, when accounts of sexual harassment are probed, questions such as “What was she wearing?” and “Had she been drinking?” are considered legitimate, whereas what he wore and drank doesn’t matter.

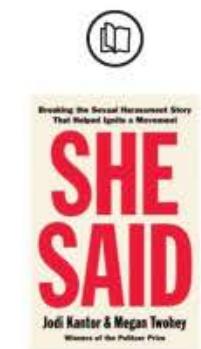
Serano notes that false allegations are rare—from 2% to 8% of cases—and that men are more likely to be victims of sexual assault than they are to be wrongly accused of it. She adds that those

most likely to have their accounts deemed questionable are the most marked in our society, among them trans women, or women of color, or people with disabilities.

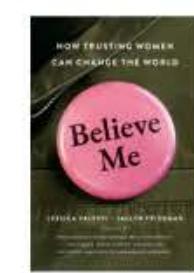
In *#MeToo in the Corporate World*, economist and consultant Sylvia Ann Hewlett suggests that the “movement has not had a big enough tent.” She surveyed more than 3,000 professionals in 2018 and found that the well-publicized accounts of “older white guys hitting on younger white women” don’t tell the whole story: Latinas, gay women and men, and black men are the most likely to be sexually harassed at work.

Hewlett explains how sexual misconduct harms companies as well as people. “Ongoing legal expenses, the loss of key rainmakers, and a crashing share price are just the beginning.” Her book lays out some prescriptions, from legal remedies to corporate policy changes to individual actions. I fumed at the advice not to “dress provocatively or otherwise signal sexual availability.” (Aren’t we past that by now?) But most of her recommendations—update core values, establish zero tolerance, and make the CEO an advocate—are sound. She cites Michael Roth, CEO of ad giant IPG, who not only emailed all 50,000 employees about zero tolerance for harassment but also installed a female CEO at one troubled affiliate. She also points to Abigail Johnson, Fidelity chairman and CEO, who, after the dismissal of two top portfolio managers following allegations of sexual misconduct, moved her office to the floor where fund managers and analysts sit.

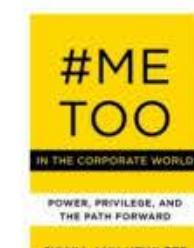
Another *Believe Me* essay, “Taking the Employer High Road to Address Sexual Harassment,” by lawyer Mónica Ramírez, shows



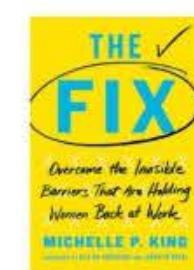
She Said
Jodi Kantor and
Megan Twohey
Penguin Press,
2019



Believe Me
Jessica Valenti
and Jaclyn
Friedman
Seal Press,
2020



**#MeToo in
the Corporate
World**
Sylvia Ann
Hewlett
Harper Business,
2020



The Fix
Michelle P.
King
Atria Books,
2020

how companies in high-risk industries like hospitality can do a better job of protecting vulnerable workers when existing laws fall short. For example, California restaurant Homeroom developed a color-coded warning system as a way for servers to alert managers to bad behavior without angering customers and risking tips.

The Fix, by Michelle King, Netflix’s director of inclusion, hammers home the point that employers are responsible for creating safe workplaces for women and for protecting them from not just harassment but also other forms of discrimination and threats to advancement. “We accept the inequality women experience at work as the way things are and then hold women accountable for fixing it,” she writes. She outlines the many other barriers women face and concludes that women aren’t the problem: Antiquated organizations are.

Like King, I think it’s time we stop trying to “fix” women (or any other marginalized group) and start listening to what they have to say. We are beginning to believe them when they report sexual harassment—but do we believe them when they say they’re penalized for being confident and assertive, held to higher standards, or underpaid relative to their white male peers? In *She Said*, Kantor and Twohey assert that #MeToo “is an example of social change in our time but is also a test of it.” Believing women is the first step toward meaningful change, and it doesn’t mean taking them at their word—it means taking their word seriously. ☺

 **NICOLE TORRES** is a senior associate editor at HBR.

Executive Summaries January–February 2020

SPOTLIGHT



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The Loyalty Economy

Managing for customer value | page 41



Are You Undervaluing Your Customers?

Rob Markey | page 42

Leaders recognize that they should manage their businesses to maximize the value of the customer base. But too often, earnings pressures result in cost-cutting measures that hurt customers.

Loyalty-leading companies operate differently. They create systems for measuring customer value and invest in the necessary enabling technology; they use design thinking methods to build customer loyalty; they organize the business around customer needs; and they engage the organization and stakeholders—employees, board members, investors—in the transformation.

And they report on their results in formats that allow investors and other stakeholders to make informed judgments.



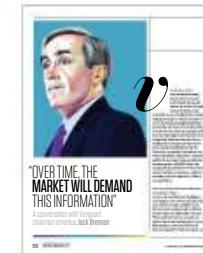
How to Value a Company by Analyzing Its Customers

Daniel McCarthy and Peter Fader | page 51

Customer-based company valuation, or CBCV, is a method that uses customer metrics to assess a firm's underlying value.

The premise behind CBCV is simple. Most financial-valuation methods require quarterly financial projections, most notably of revenue. Recognizing that every dollar of revenue comes from a customer who makes a purchase, CBCV exploits basic accounting principles to make revenue projections from the bottom up instead of from the top down.

This article details how managers and investors can utilize models of customer acquisition, attrition, and spending to gain new insights into the value of a firm.



"Over Time, the Market Will Demand This Information"

A conversation with Vanguard chairman emeritus Jack Brennan | page 56

Vanguard, the mutual fund company known for its low-cost index funds, frequently shows up on lists of organizations with the most-loyal customers—and that's no accident. During his tenure as CEO, from 1996 to 2008, Jack Brennan emphasized what he calls the virtuous circle of attracting loyal clients who stick around and create new ones through word of mouth. Now Vanguard's chairman emeritus, he is a leading voice on corporate disclosure issues. Brennan spoke with HBR about why companies should want to tell investors more about their customers—and how soon they may be required to.

HOW I DID IT


HOW I DID IT

IdeaWatch

THE FOUNDER OF CHEWY.COM ON FINDING THE FINANCING TO ACHIEVE SCALE

by Ryan Cohen

MOST PEOPLE ASSUME that the high point of my professional career came on April 18, 2014, when the investors at Volition Capital invested \$3.35 billion in Chewy.com, the pet retailer I had cofounded and run since 2005. That was an amazing, incredible. It represented the culmination of years of hard work, a reasonable amount of work. But believe it or not, after that moment, the real work—had just begun.

Photograph by MARY BETH KOOTH

Illustration by NISHANT CHOKSI

Harvard Business Review
Volume 91 Number 1 January 2013

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The Founder of Chewy.com on Finding the Financing to Achieve Scale

Ryan Cohen | page 35

As Ryan Cohen was on the verge of launching an online jewelry business with his friend Michael Day, he had a revelation: He was standing in a local pet store with his toy poodle, Tylee, discussing her food with the proprietor, when he realized that millions of other pet owners were equally concerned about their animals' well-being. Clearly, the opportunity was huge—and he cared much more about pet food than about jewelry.

He went door-to-door in Silicon Valley looking for funding, but not until Chewy had beaten sales projections did the company find a significant backer, at Volition Capital. Cohen describes that first round of funding as a major watershed. "From that point on, the mission was larger," he writes. "I was even more committed to making Chewy an industry leader because it was no longer just our own money on the line....I felt that responsibility." The financing allowed him and his team to scale up the operation rapidly and plan for an IPO, but before that happened, they sold Chewy to PetSmart for \$3.35 billion. Its early-stage investors made huge gains, and later-stage ones made significant money. "Those investors put their trust in me and my vision," Cohen writes, "and I repaid them with returns."

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MANAGING YOURSELF


Experience
Advice and Inspiration

BUILDING AN ETHICAL CAREER

A three-stage approach to navigating moral challenges at work

by Maryam Kouchaki and Isaac H. Smith

Illustration by NISHANT CHOKSI

Harvard Business Review
Volume 91 Number 1 January 2013

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Building an Ethical Career

Maryam Kouchaki and Isaac H. Smith
page 135

Most of us think of ourselves as good people. We set out to be ethical at work, and we hope that in pivotal moments we will rise to the occasion. But when it comes to building an ethical career, good intentions are insufficient. Decades' worth of research has identified psychological processes and biases that cloud people's moral judgment, leading them to violate their own values, and often to create contorted, post hoc justifications for their behavior.

How can we ensure that we will consistently do the right thing in our professional lives? The authors argue for a mindset shift to what they term *moral humility*—the recognition that we all have the capacity for ethical transgressions if we aren't vigilant. They suggest a three-stage approach for staying on the straight and narrow: Prepare in advance for moral challenges, including instituting proper safeguards; make good decisions in the moment; and reflect on and learn from moral successes and failures.

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NEED TO TOUGHEN UP AT WORK?

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Features

TECHNOLOGY



Competing in the Age of AI

Marco Iansiti and Karim R. Lakhani | page 60

Today markets are being reshaped by a new kind of firm—one in which artificial intelligence runs the show. This cohort includes giants like Google, Facebook, and Alibaba, and growing businesses such as Wayfair and Ocado. Every time we use their services, the same thing happens: Rather than relying on processes run by employees, the value we get is delivered by algorithms. Software is at the core of the enterprise, and humans are moved off to the side.

This model frees firms from traditional operating constraints and enables them to compete in unprecedented ways. AI-driven processes can be scaled up very rapidly, allow for greater scope because they can be connected to many kinds of businesses, and offer very powerful opportunities for learning and improvement. And while the value of scale eventually begins to level off in traditional models, in AI-based ones, it never stops climbing. All of that allows AI-driven firms to quickly overtake traditional ones.

As AI models blur the lines between industries, strategies are relying less on specialized expertise and differentiation based on cost, quality, and branding, and more on business network position, unique data, and the deployment of sophisticated analytics.

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HEALTH CARE



Managing the Most Expensive Patients

Robert Pearl and Philip Madvig | page 68

Discussions about reining in health care costs invariably turn to the sickest 5% of the population, who account for 50% of all health care spending. Most of these patients have multiple chronic conditions, and the hope is that through disease-management programs that use registered nurses and social workers to monitor and help them, we can care for them better and achieve big savings. But these programs are expensive. Typically each focuses on just one disease, which means that many patients deal with multiple teams. The programs also operate outside primary-care practices, so they often duplicate doctors' work as well. And in the experience of the authors, the former CEO and associate executive director of Kaiser Permanente (KP), they do not reduce net costs.

KP has come up with a better approach: providing coaching and support to patients through IT and inexpensive assistants who are integrated into primary-care practices—avoiding duplication. KP applies it judiciously, focusing only on patients whose chronic conditions can truly be improved (about a third of the most expensive 5%). This strategy has not only led to better medical outcomes but cut costs so much that KP has been able to lower premiums for millions of members by 10% to 15%.

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ORGANIZATIONAL CULTURE



The New Analytics of Culture

Matthew Corritore, Amir Goldberg, and Sameer B. Srivastava | page 76

Culture is easy to sense but hard to measure. The workhorses of culture research—employee surveys and questionnaires—are often unreliable.

Studying the language that employees use in electronic communication has opened a new window into organizational culture. New research analyzing email, Slack messages, and Glassdoor postings are challenging prevailing wisdom about culture.

- Some of the findings:
- Cultural fit is important, but what predicts success most is the rate at which employees adapt as organizational culture changes over time.
 - Cognitive diversity helps teams during ideation but hinders execution.
 - The best cultures encourage diversity to drive innovation but are anchored by shared core beliefs.

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HUMAN RESOURCES



The Transformer CLO

Abbie Lundberg and George Westerman | page 84

In today's fast-changing business environment, employees' continual development is essential. That's leading to a new and more powerful role for chief learning officers: They're not just trainers anymore; they're transformers who are reshaping organizational capabilities and culture.

The authors interviewed CLOs at 19 large companies and found that transformers are revamping their organizations' learning goals, learning methods, and learning departments. Their efforts offer a road map for anyone wishing to build a stronger workforce.

With respect to learning goals, the aim should be not just to teach employees specific skills but to cultivate broader capabilities, including strong leadership, digital literacy, and a growth mindset. With respect to learning methods, the trend is to move away from traditional classroom instruction and adopt approaches that can provide learning to more employees, in more-customized ways. (Think online and audio courses, videoconferencing, interactive simulations, and formal opportunities for employees to reflect on and apply what they've been taught.) As for transforming learning departments, the key is to make them leaner, more agile, and more strategic by curating useful external content, encouraging peer teaching, measuring the impact of training, and providing tools to tailor learning plans to individuals.

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STRATEGY

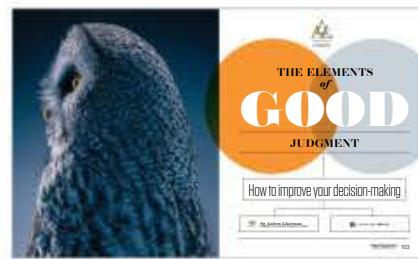
When Data Creates Competitive Advantage

Andrei Hagiu and Julian Wright
page 94

Many executives assume that customer data can give you an unbeatable edge. The more customers you have, the more data you can gather, and that data, when analyzed, allows you to offer a better product that attracts more customers. You can then collect even more data, repeating the cycle until you eventually marginalize your competitors. But this thinking is usually wrong. Though the virtuous cycles of data-enabled learning may look similar to those of network effects—wherein an offering increases in value to users as more people adopt it and ultimately garners a critical mass of users that shuts out competitors—they are not as powerful or as enduring.

Nevertheless, under the right conditions, customer data can help build competitive defenses. It all depends on whether the data offers high and lasting value, is proprietary, leads to improvements that can't be easily imitated, or generates insights that can be quickly incorporated. Those characteristics do give firms an advantage. And when learning from one customer rapidly improves an offering for others (think Google Maps), people will care about how many other people are adopting it, and it will enjoy those sought-after network effects.

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LEADERSHIP

The Elements of Good Judgment

Sir Andrew Likierman
page 102

Judgment—the ability to combine personal qualities with relevant knowledge and experience to form opinions and make decisions—is “the core of exemplary leadership,” according to Noel Tichy and Warren Bennis (the authors of *Judgment: How Winning Leaders Make Great Calls*). It is what enables a sound choice in the absence of clear-cut, relevant data or an obvious path. Likierman believes that a more precise understanding of what exactly gives someone good judgment may make it possible for people to learn and improve on it. He approached CEOs at a range of companies, from some of the world’s largest right down to start-ups, along with leaders in the professions: senior partners at law and accountancy firms, generals, doctors, scientists, priests, and diplomats. He asked them to share their observations of their own and other people’s exercise of judgment so that he could identify the skills and behaviors that collectively create the conditions for fresh insights and enable decision makers to discern patterns that others miss. As a result, he has identified six key elements that collectively constitute good judgment: learning, trust, experience, detachment, options, and delivery. He describes these elements and offers suggestions for improvement in each one.

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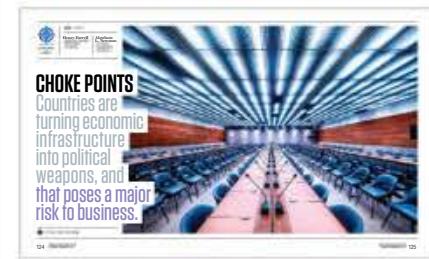
OPERATIONS

Taming Complexity

Martin Reeves et al. | page 112

It can be cognitively demanding to understand how a system or organization made up of many very different interconnected elements actually works. But the fact that such systems or organizations are difficult to understand doesn’t make them inherently bad. In addition to its more obvious costs, complexity confers critical benefits, especially in dynamic and uncertain environments. The authors draw on their experience and perspectives in business, biology, and physics to offer some reflections on the nature, benefits, and costs of complexity and provide some guidance on managing it. Their recommendations: In growing your organization, make sure that it remains modular in structure and that all components and connections conform to a small number of simple operating principles. Embed a bias for change, avoid imposing too many controls on your people, and let the market judge which changes work. Finally, always optimize your organization globally and keep fixing, repairing, and pruning.

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ECONOMICS & SOCIETY

Choke Points

Henry Farrell and Abraham L. Newman | page 124

To conduct international commerce, businesses have built an intricate system of networks that move money, information, and components around the world. These networks may look decentralized, but all too frequently, they have major choke points. The majority of global finance transactions, for instance, are relayed through a single organization in Belgium. Many global tech firms depend heavily on the chips Qualcomm makes for Android devices. A huge proportion of global communications are routed through private servers on U.S. soil. Increasingly, these choke points are being turned into political weapons by governments, and companies are getting caught in the cross fire. The stakes are high: Firms can go out of business if they’re cut off from critical networks. They need to analyze their exposure and develop a strategy to protect themselves.

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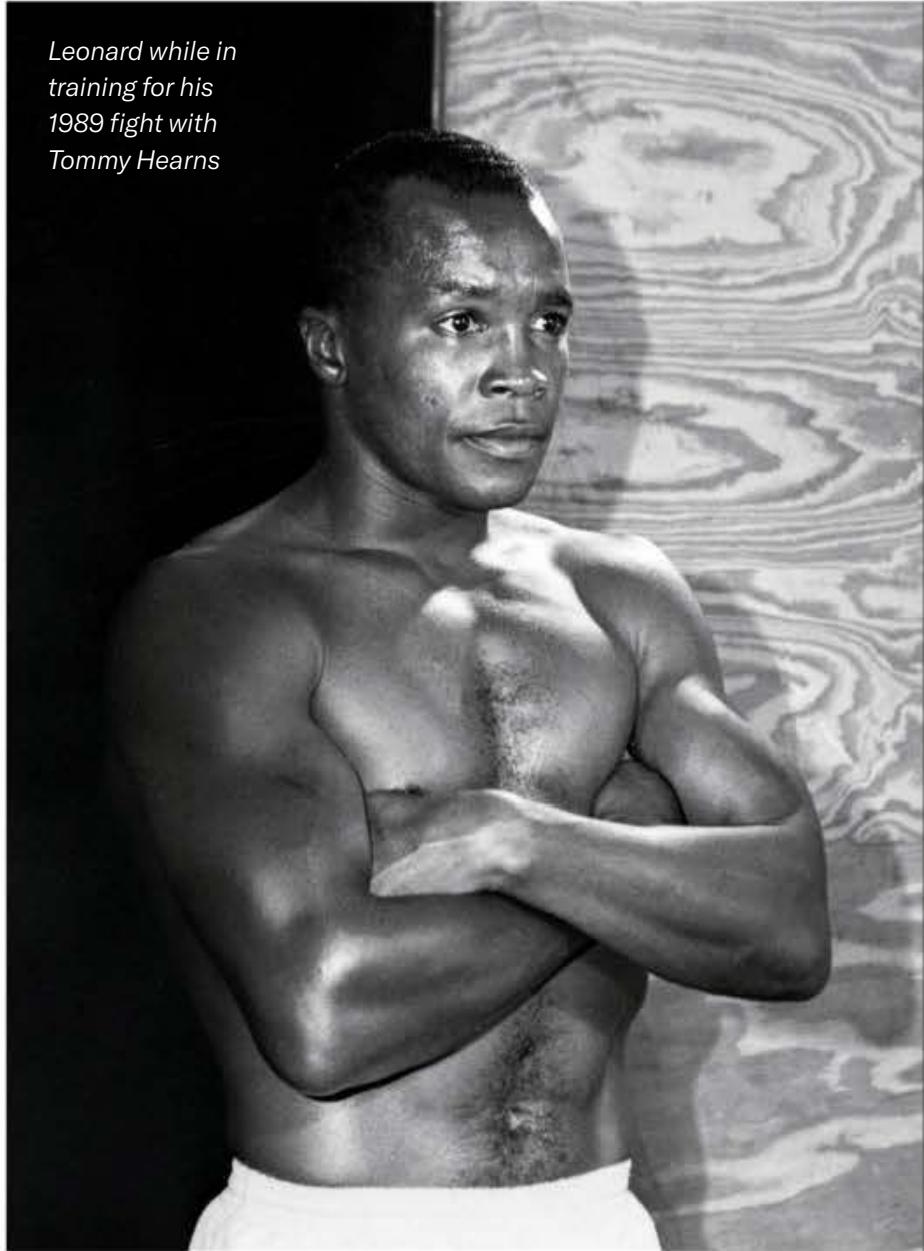
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“As a fighter, there’s certainly fear of injury, but it’s outweighed by the desire to be number one.”

Leonard while in training for his 1989 fight with Tommy Hearns



SUGAR RAY LEONARD

During his 20-year career as a professional boxer, Sugar Ray Leonard won world titles in five weight classes, became the first in his sport to earn more than \$100 million in prize money, and helped fuel fans' interest in boxing following Muhammad Ali's retirement. Today Leonard calls fights for the streaming sports service DAZN and raises money for pediatric diabetes research.

Interviewed by Daniel McGinn

HBR: You grew up in a violent neighborhood and saw a lot of conflict at home. Was that a useful upbringing for a boxer?

LEONARD: Boxing is a poor man's sport. It's a sport that demands your outright respect. Most people look at boxing or any other contact sport and say, "Wow, I couldn't do that," because they don't possess the thing inside of us that makes us go through pain. It takes something to activate that. That's what separates fighters from other people.

How did you come to bypass boxers' traditional reliance on promoters to arrange fights and instead do deals that gave you a bigger piece of revenues?

I'd seen so many horrible situations where legendary fighters were taken advantage of financially. And at the end of their careers they had nothing to show for their work. After I won the Olympic gold medal, I enrolled at the University of Maryland—I didn't plan to become a professional boxer. That changed because my dad was hospitalized for diabetes. I turned pro to pay the bills. I was introduced to an attorney, and he showed me how to structure my fights in a way that allowed me to control my life and my legacy. Our approach was unprecedented at the time.

What drove your success as a celebrity endorser? I'd like to think it was charisma. Other fighters said I was "white collar" because I was doing endorsements and other things outside the ring. That bothered me. I never discussed it, but in a strange way

it made me a better fighter. It was about composure, and not letting people get inside my head.

Your career was marked by repeated retirements. Why so much indecision?

I often say I was the champion of retirements. When I first retired, at 26, people told me how happy I should be—I had money and fame. But at that point it was about legacy. Coming back was about fighting other guys, particularly Marvelous Marvin Hagler. Around that time I also made a new friend named cocaine. As an alcoholic and an addict, I always felt safe inside the ring, because I controlled things there.

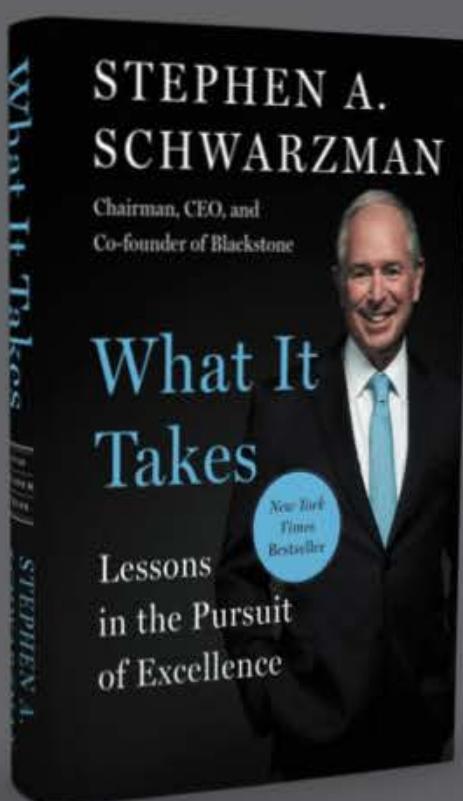
For people who've never seen you fight, which bout is most worth going back to watch?

My fight against Tommy Hearns in 1981 exemplifies determination, intestinal fortitude, and heart against one of the greatest fighters ever. I was losing after 12 rounds, and it took so much—mentally, spiritually, psychologically—to come back.

Do you regret the later comebacks, which kept you in the ring until age 40? I regret the ones I lost: Héctor Camacho, Terry Norris, the second fight with Tommy Hearns (which was a draw on the scorecard, but which he won as far as I'm concerned). Looking back, I do have regrets, but I wouldn't be the person I am today if I hadn't gone through it. Especially now, retired and at age 63, I say, "Wow, that was risky." But you take risks. ☺

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